

A COURSE MODULE DESCRIPTOR FORM

Module Information			
Course Module Title	OOP with C++		
ناوی کۆرس مۆدیول	OOP به C++		
عنوان الوحدة	OOP مع C ++		
Course Module Type	Core	Module Code	IT302
ECTSs	7		
Department	Information Technology Department		
Department Code	IT		
Module Website (CMW)	https://lms.noble.edu.krd		
Module Leader (ML)	Murthad Hussein Sabri		
NTI - E – mail	marthed.hussain@edu.krd		
ML Acad. Title	Asst. Lect.		
ML ORCID	0000-0003-3705-7062		
ML Google Scholar Acc	https://scholar.google.com/citations?user=2OKNS34AAAAJ&hl=en		



NOBLE TECHNICAL INSTITUTE

Ministry of Higher Education and
Scientific Research
Kurdistan Region – Iraq

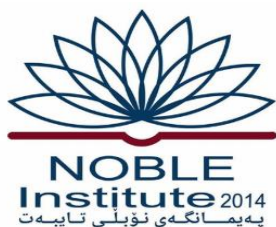


Fall Semester

Academic Year 2023 – 2024

3rd semester 2nd graders

Relation with Other Modules	
Pre-requisites	Null
Module Aims, Learning Outcomes and Indicative Contents	
Module Introductory Description	<p>This course provides in-depth coverage of object-oriented programming principles and techniques using C++. Topics include classes, overloading, data abstraction, information hiding, encapsulation, inheritance, polymorphism, file processing, templates, exceptions, container classes, and low-level language features. The course briefly covers the mapping of UML design to C++ implementation and object-oriented considerations for software design and reuse. The course also relates C++ to GUI, databases, and real-time programming. The course material embraces the C++ language standard with numerous examples demonstrating the benefits of C++.</p>
Module Aims	<p>This course provides an introduction to object oriented programming (OOP) using the C++ programming language. Its main objective is to teach the basic concepts and techniques which form the object oriented programming paradigm. Students completing the course should know: The model of object oriented programming: abstract data types, encapsulation, inheritance and polymorphism</p>
Module Learning Outcome	<ul style="list-style-type: none"> Understand the features of C++ supporting object oriented programming Understand the relative merits of C++ as an object oriented programming language Understand how to produce object-oriented software using C++ Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism Understand advanced features of C++ specifically stream I/O, templates and operator overloading



NOBLE TECHNICAL INSTITUTE

Ministry of Higher Education and
Scientific Research
Kurdistan Region – Iraq



Fall Semester

Academic Year 2023 – 2024

3rd semester 2nd graders

Learning and Teaching Strategies

Strategies	<p>Small groups, video learning, working on projects, student center (presenting seminars by students), scientific trips to telecommunication companies, letting students become an assistant at lab.</p> <p>Class activities like; problem-based learning, Gap fill, Jigsaw method, Teach back teaching method.</p> <p>The mentioned learning and strategies have been implemented as a strategy of learning and teaching in order to motivate the students to participate and engage to the class more effectively.</p>
-------------------	---

Required texts and References

<ol style="list-style-type: none"> 1) Deitel's "C++ How to Program", Deitel & Deitel, 2007 2) Robert Lafore, "Object-Oriented Programming in C++", Sams, 2007 3) Bjarne Stroustrup, "The C++ Programming Language: Special Edition", Addison-Wesley, 2000 4) ORIENTED PROGRAMMING IN C++ , Author: Rajesh K. Shukla <ul style="list-style-type: none"> • PowerPoint presentation lecture notes prepared by lecturer
--

Module Delivery

Total workload	
Contact Theoretical Hours – Per semester	45
Contact Practical Hours – Per Semester	144

Module Assessment			
Module Activities	Time /Number	Weight (Marks)	Week Due
Contact hours - Participation	1	5%	All the weeks
(Science / Lab) (Social science / Critical thinking)	1	5%	4
Presentation / Seminar	1	5%	6
Tutorial	2	5%	4,10
Quiz	5	5%	3,6,8,10,11
Midterm Exam	1	20%	8
Self-study	1	5%	9
Projects	1	5%	10
Oral assessment	1	5%	12
Final Exam	1	40%	15
Total		100%	

Delivery Plan (Designed Syllabus) – Theory	
	Course Module Content
Week 1	Introduction of OOPs
Week 2	Principles of OOPs, Benefits and Applications
Week 3	Identifiers, Variables and Constant
Week 4	Operators and Constant
Week 5	How to write Function in C++
Week 6	The Function continues
Week 7	Object and Class (explain in General)

Week 8	Object and Class (Writing Program)
Week 9	Midterm
Week 10	Private and Public and Protected
Week 11	Static Data and Function
Week 12	Inside and outside Constructors and their type
Week 13	Destructor & Declarations of constructors
Week 14	Destructor & Declarations of constructors
Week 15	Operator Overloading & Encapsulation (Understanding)
Week 16	Operator Overloading & Encapsulation (Program)
Week 17	Concept of Inheritance & Polymorphism
Week 18	Final Exam

Delivery Plan (Designed Syllabus) – Practical	
	Course Module Content
Week 1	Lab-1-Program Basics
Week 2	Lab-2- String (Types and Methods)
Week 3	Lab-4- Reference (Programming)
Week 4	Lab- Pointers & Memory Address (Understanding)
Week 5	Lab-Program on Functions (creating Functions)
Week 6	Lab- Program on Functions
Week 7	Lab-Introduction of objects (Create Objects)
Week 8	Lab-Introduction of objects (writing Program with multiple objects)
Week 9	Midterm
Week 10	Lab-Program with help of Objects
Week 11	Lab-create class (writing Program)
Week 12	Lab-Create objects
Week 13	Lab-Declarations of constructors
Week 14	Lab-Declarations of constructors
Week 15	Lab-Encapsulation & Inheritance



NOBLE TECHNICAL INSTITUTE

Ministry of Higher Education and
Scientific Research
Kurdistan Region – Iraq



Fall Semester

Academic Year 2023 – 2024

3rd semester 2nd graders

Week 16	Lab-understanding Polymorphism
Week 17	Lab-writing program in Polymorphism
Week 18	Final Exam

Course Keywords

Object, Class, Functions, Inheritance