Course Outline

ULAB
UNIVERSITY OF LIBERAL ARTS
BANGLADESH

Basic Information

Faculty	Satyaki Das, (Room PC-315)
Office Hour	**Sunday:** 9:15 am – 10:00am (Permanent Campus: Room: PC-315) **Tuesday:** 9:15 am – 10:00am (Permanent Campus: Room: PC-315) **Monday:** 11:30 am – 12:40pm & 2:30 pm – 4:30 pm (Permanent Campus: Room: PC-315) **Wednesday:** 11:30 am – 12:40pm & 2:30 pm – 4:30 pm (Permanent Campus: Room: PC-315) **Thursday:** 9:30 am – 12:30 pm (Permanent Campus: Room: PC-315) Note: Also available by Email Appointment at other times satyaki.das@ulab.edu.bd
Contact Details	**Room:** PC315 satyaki.das@ulab.edu.bd
Course Pre-requisites	CSE 103 and CSE 104

Department offering the course	Computer Science and Engineering	Google classroom
Course Title	Object Oriented Programming C++	Core course

Course Code	CSE 201 (section-1)	Credit	3	Term	Fall 2020

Number of Lectures	24	Number of Tutorials	0	Number of Practical	24	Total	24

Course Details

1. Course Description

This course will familiar the students with the concepts of Object-Oriented Programming C++ and they learn how to use this concept in application level. At the end of the class, we expect students be able to write and read basic C++ code.

2. Course Objective

1. To **provide** a thorough understanding of object-oriented programming concepts and the resource requirements.
2. To **introduce** several important features of object-oriented programming that are interesting both from a theoretical and also practical point of view.
3. To **enable** students to design and write programs using C++ programming language.
4. To **emphasize** on solving practical problems using C++ programming language.

3. Intended learning outcomes of the course (ILOs)

KNOWLEDGE	1. **Describe** the principles and concept of OOP
	2. **Explain** important features of object-oriented programming that are important to design and develop OOP
SKILLS	3. **Solve** a wide range of practical problems using C++ computer programming language.
	4. **Understand** a real-life problem and **be able** to design and code a small system using C++ language

4. Mapping of Course LO and PLO:

Learning Outcome (LO) of the Course	Program Learning Outcome (PLO)											
	1	2	3	4	5	6	7	8	9	10	11	12
ILO 1	MJ	MN										
ILO 2	MJ			MN	MN							
ILO 3	MJ	MJ	MJ	MN	MN							
ILO 4		MJ		MJ	MN							

5. Contents

ILO	Topic	Teaching Strategy	Assessment Strategy	Number of Sessions
1-2	Review of Structured programming and Introduction to of OOP	Lecture Exercise	Assignment	2
1-3	Decision Making and Coding Conventions of OOP	Lecture Exercise	Assignment	1
1-3	Class, Object, Access Modifiers	Lecture Exercise	Quiz Assignment Examination	3
1-4	Methods/functions and function overloading	Lecture Exercise	Assignment Quiz Examination	4
1-4	Constructor and Destructor	Lecture Exercise	Assignment Quiz Examination	2
1-4	Friend function and Friend class	Lecture Exercise	Assignment Quiz Examination	4
1-4	Inheritance and inheritance hierarchies in C++	Lecture Exercise	Quiz Assignment	3

			Examination	
1-4	Polymorphism and Encapsulation	Lecture Exercise	Q/A Test Assignment	2
1-4	Virtual function, Pure virtual Function, Abstract class and file operations	Lecture Exercise	Assignment Quiz Examination	3
			Total	24

5. A. Assessment Schedule

Assessment 1	Class Test	Session	Week 4, 8, 12
Assessment 2	Assignment	Session	Week 3, 5, 9, 11, 12
Assessment 3	Mid Term Final	Session	Week 7
Assessment 5	Final	Session	Week 14 &15

B. Weights of Assessments

Assessments	%
Mid-term Examination	25
Final Term Examination	25
Attendance and Class Participation	15
Assignments	15
Class Test	20
Total	100

C. Grading Policy

Policy	Letter Grade	Grade Point	Assessments
95% and above	A+	4.00	Outstanding
85% to below 95%	A	4.00	Superlative
80% to below 85%	A-	3.80	Excellent
75% to below 80%	B+	3.30	Very Good
70% to below 75%	B	3.00	Good
65% to below 70%	B-	2.80	Average
60% to below 65%	C+	2.50	Below Average
55% to below 60%	C	2.20	Passing
50% to below 55%	D	1.50	Probationary

below 50%	F	0.00	Fail
--	I	0.00	Incomplete
--	W	0.00	Withdrawn
--	AW	0.00	Administrative Withdrawal

6. List of References

Course Notes	Please check the moodle and the facebook group page to access course notes.
Essential Books (Text Books)	A Complete Reference of C++ - Herbert Schildt
Recommended Reference Books	Teach Yourself C++, by Herbert Schildt Programming with C++, John R. Hubbard, (Schaum's outlines)
Online Resources	Will be suggested during lecture

Facilities Required for Teaching and Learning

Multimedia projector, white board and marker, internet connection, a computer with MS office suites

Course Policies and Procedures

- Failing to attend more than 5 classes will result in an automatic fail
- Students are advised to keep the cell phones into silent mode
- Cheating and plagiarism are strictly prohibited
- There will be No makeup exam/quiz
- ULAB regulations will be followed in conducting exams and evaluating answer scripts and grading
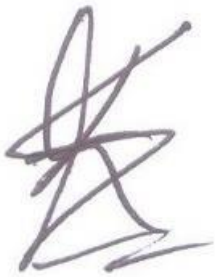- ULAB regulations will be followed in conducting makeup mid exam and final exam.

Appendix-1: Program Learning Outcome (PLO)

No.	PLO
1.	**Engineering Knowledge**
2.	**Problem Analysis**
3.	**Design/Development of Solutions**
4.	**Investigation**
5.	**Modern Tool Usage**
6.	**The Engineer and Society**
7.	**Environment and Sustainability**
8.	**Ethics**
9.	**Communication**
10.	**Individual and Team Work**
11.	**Life Long Learning**
12.	**Project Management and Finance**

Generic Skills (Detailed):

1. **Engineering Knowledge (T)** -Apply knowledge of mathematics, sciences, engineering fundamentals and manufacturing engineering to the solution of complex engineering problems;
2. **Problem Analysis (T)** – Identify, formulate, research relevant literature and analyze complex engineering problems, and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences;
3. **Design/Development of Solutions (A)** –Design solutions, exhibiting innovativeness, for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, economical, ethical, environmental and sustainability issues.
4. **Investigation (D)** Conduct investigation into complex problems, displaying creativeness, using research-based knowledge, and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions;
5. **Modern Tool Usage (A & D)** -Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations;

6. **The Engineer and Society (ESSE)** -Apply reasoning based on contextual knowledge to assess societal, health, safety, legal, cultural, contemporary issues, and the consequent responsibilities relevant to professional engineering practices.
7. **Environment and Sustainability (ESSE)** -Understand the impact of professional engineering solutions in societal, global, and environmental contexts and demonstrate knowledge of and need for sustainable development;
8. **Ethics (ESSE)** –Apply professional ethics with Islamic values and commit to responsibilities and norms of professional engineering code of practices.
9. **Communication (S)** -Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions;
10. **Individual and Team Work (S)** -Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
11. **Life Long Learning (S)** -Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
12. **Project Management and Finance (S)** -Demonstrate knowledge and understanding of engineering management and financial principles and apply these to one's own work, as a member and/or leader in a team, to manage projects in multidisciplinary settings, and identify opportunities of entrepreneurship.

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Course Coordinator/ Teacher   *Head of the Department*

Date: 22.10.2020   Date: