AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)

Faculty of Science and Technology (FST)
Department of Computer Science (CS)
Undergraduate Program

COURSE PLAN	**SPRING 2021-2022** SEMESTER

I. Course Core and Title

CSC 1101: Introduction to Computer Studies

II. Credit

1 credit hour (3 hours of lab per week)

III. Nature

Introductory Course for BSc. in CS

V. Vision:
Our vision is to be the preeminent Department of Computer Science through creating recognized professionals who will provide innovative solutions by leveraging contemporary research methods and development techniques of computing that is in line with the national and global context.

VI. Mission:
The mission of the Department of Computer Science of AIUB is to educate students in a student-centric dynamic learning environment; to provide advanced facilities for conducting innovative research and development to meet the challenges of the modern era of computing, and to motivate them towards a life-long learning process.

VII - Course Description:

At the end of the course, the following objectives shall have been attained:

- Understand AIUB's and CS department's rules and regulations.
- Develop the pre-requisite and essential knowledge for further courses (e.g., Introduction to programming, Data Structures, Algorithms).
- Define number systems, Boolean expressions for performing basic mathematical operations.
- Discussions on *safe internet browsing* for 21st century.
- Understand how to design problems using Flowcharts.
- Define aspects of computer programming language.
- Demonstrate basic structural programming concept.
- Learn about hardware and software systems.
- Make good use of Office 365 tools.
- Explore different domains of Computer Science.
- Students will undertake CISCO IT Essentials training during this course.

VIII – Course outcomes (CO) Matrix:

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

		C	P	A	S	PO Assessed**
		Level of Domain*	
CO 1.1	Explore and apply the Number System understanding for solving several problems and perform techniques.	3			CT	1.1
CO 1.2	Explore and apply the Boolean logic and logic gates understanding for solving several problems and perform techniques.	3			CT	1.2
CO 2.1	Illustrate the techniques for drawing a flowchart which indicates the step by step process of solving a problem,		4		CT	2.1
CO 2.2	Present a topic from the domain of computer science related to the real life scenario.		4		TS	2.2

C: Cognitive; P: Psychomotor; A: Affective; S: Soft-skills (CT: Critical Thinking, TS: Teamwork)
*The numbers under the 'Level of Domain' columns represent the level of Bloom's Taxonomy each CO corresponds to.
** The numbers under the 'PO Assessed' column represent the PO each CO corresponds to.

PO 1

Name: Engineering Knowledge
Objective:
Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

Components:		CO Definition	Blooms level	Blooms learning level	Assessment method
1.1	Understand the impact of professional engineering solutions in societal and environmental contexts	By applying the knowledge of number system solve and evaluate real life problems and basics understanding of computing	3	C	Quiz
1.2	Demonstrate the knowledge of and need for sustainable development.	Learning the approach to solve a problem for various computing system and understand the step wise approach representation	3	C	Assignment

PO 2

Name: Problem Analysis
Objective: Identify, formulate, research, and analyze complex engineering problems and reach substantiated conclusions using the principles of mathematics, the natural sciences and the engineering sciences.

Components:		CO Definition	Blooms level	Blooms learning level	Assessment method
2.1	Demonstrate knowledge and understanding of engineering and management principles	Identify and analyze the core concepts of a computing circuit and their designing	4	P	Quiz
2.2	Apply these to one's work as a team member or a leader to manage various environments.	Explore the components of office tools and demonstrate the team work with a relevant topic of real life computing	4	P	Presentation & Viva

IX – Topics to be covered in Theory class*:

TOPICS	Specific Objective(s)	Time Frame	Suggested Activities	Teaching Strategy(s)	CO Mapped
• Mission & Vision of AIUB • Rules and Regulations of the CS department • Course Outline • CISCO IT Essentials	a) Mission & Vision of AIUB b) To understand key difference between university education and Higher Secondary level. c) What is CISCO IT Essential? d) Significance of the CISCO Module	Week 1	Lecture and Lab Work	Class Discussion, Self-Study & Lecture Slides	CO1.1
• Introduction to Computers • Number System • IT Essentials-Chapter 1 • Discussion about course Add/Drop procedure	a) What is a Computer? b) Familiarization with basic Input and Output Devices c) How does Computer work? d) Significance of Number system in computing e) Chapter -1 of IT Essentials	Week 2	Lecture and Lab Work	Class Discussion, Self-Study & Lecture Slides	CO1.1
• Flow chart. • IT Essentials-Chapter 2,3 • Introduction to VUES and AIUB website • Introduction to Learning System Management	a) What is Flow chart? b) Understand the significance of Flow-chart in program writing c) Develop programs from Flow-chart d) Chapter-2, 3 IT Essentials e) Getting familiar with VUES and online resources. f) Unitization of Learning System Management.	Week 3	Lecture, Lab Work and Assignments, Quiz-1	Class Discussion, Self-Study & Lecture Slides	CO2.1
• Basic computer architecture • IT Essentials Chapter 4 and Chapter 5 • Academic	a) Discussion about Basic Computer Architecture. b) Chapter-4, 5 IT Essentials. c) Discussion about Academic honesty,	Week 4	Lecture and Lab Work	Class Discussion, Self-Study & Lecture Slides	CO2.1

Honesty	AIUB policies about disciplinary cases, and probable Impact on academic life. d) Academic Integrity				
• Discussion about different domains of computer science. • IT Essentials Chapter 6 and 7 • AIUB Grading Structure & Exam Permit Policy	a) Exploring knowledge and opportunity of different domains of Computer Science. b) Chapter-6,7 IT Essentials. c) Understanding about AIUB grading structure and calculation. d) Discussion about Exam Permit policies during and before exam.	Week 5	Lecture, Lab Work and Assignments	Class Discussion, Self-Study & Lecture Slides	CO2.1
• Assessment class • IT Essentials Chapter 8 and 9	a) Exploring knowledge and opportunity of different domains of Computer Science. b) Chapter-8, 9 IT Essentials.	Week 6	Lecture, Lab Work and Assignments, Quiz-2	Class Discussion, Self-Study & Lecture Slides	
Week 7 - Midterm Examination					
• Introduction to Office 365. • Pre-registration & Pre-requisite courses. • IT Essentials Chapter (1-9) Final	a) Explain tools available in Office 365 b) Microsoft Word, Excel (introduce basic features i.e. plot, row-column calculation etc.) c) IT Essentials Chapter (1-9) Final d) Discussion about pre-registration & pre-requisite courses.	Week 8	Lecture and Lab Work	Class Discussion, Self-Study & Lecture Slides	CO2.2
• MS Power-point • IT Essentials Chapter 10,11 • Pseudo Code & Algorithm	a) Creating presentation using Microsoft Power Point b) Use of different features available in power point to	Week 9	Lecture, Lab Work and Assignments	Class Discussion, Self-Study & Lecture Slides	CO2.2

	make presentation attractive c) Chapter-10,11 IT Essentials. d) Describe pseudo code and algorithm.				
• Introduction to Internet browsing • Logic Gate • IT Essentials Chapter 12 • Learning Systems	a) What is safe browsing? b) Browsing policy in AIUB c) Create Email account using internet d) Chapter 12 IT Essentials. e) Understanding Logic Gate and the use of these. f) Discussion about different Learning Systems.	Week 10	Lecture, Lab Work and Assignments, Quiz-3	Class Discussion, Self-Study & Lecture Slides	CO1.2
• Boolean Algebra • Introducing Logic Circuits • IT Essentials Chapter 13,14	a) Understanding Logic Circuits. b) Boolean algebra problem solving. c) Chapter 13,14 IT Essentials.	Week 11	Lecture and Lab Work	Class Discussion, Self-Study & Lecture Slides	CO1.2
• Digital Content Handling • Setting Life Goals & Managing Time • Presentation • IT Essentials Chapter 10-14 Final	a) What is Digital Piracy? b) Strategies about setting life goals & managing time to achieve that. c) Chapter 10-14 IT Essentials. d) Understanding Logic Gate and the use of these. e) Group Presentation.	Week 12	Lecture, Lab Work and Assignments, Quiz-4	Class Discussion, Self-Study & Lecture Slides	CO2.2
• Assessment and Discussion • Presentation • IT Essential Composite Final	• Group Presentation • Presentation on their chosen recent topic. • IT Essential Composite Final	Week 13	Lecture, Lab Work and Assignments	Class Discussion, Self-Study & Lecture Slides	CO2.2
Week 14 - Final term Week					

* The faculty reserves the right to change, amend, add or delete any of the contents.

X- Course Requirements

At least **80% class attendance** is necessary to sit for the exam. If there is any assignment given to the students, they have to submit it before the deadline decided by the course teacher.

XI – Evaluation & Grading System

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Marking Distribution (Midterm)		Marking Distribution (Final term)	
Class Quiz (Best 1 out of 2)	15%	Class Quiz (Best 1 out of 2)	15%
Mid Quiz (No Option)	10%	Final Quiz (No Option)	10%
Assignment	10%	Presentation	20%
CISCO Exam	45%	CISCO Exam	35%
Viva	20%	Viva	20%
Total	100%	**Total**	100%
Final Grade/ Grand Total			
Midterm:	40%		
Final Term:	60%		

Grand Total= 40% of Midterm + 60% of Final Term

The following grading system will be followed strictly in this class

Letter	Grade Point	Numerical %
A+	4.00	90-100
A	3.75	85 - < 90
B+	3.50	80 - < 85
B	3.25	75 - < 80
C+	3.00	70 - < 75
C	2.75	65 - < 70
D+	2.50	60 - < 65
D	2.25	50 - < 60
F	0.00	< 50 (Failed)
A+	4.00	90-100
I	Incomplete	
W	Withdrawal	
UW	Unofficial Withdrawal	

The evaluation system will be strictly followed as per the AIUB grading policy.

XII – Teaching Methods

Maximum topics will be covered from the textbook. For the rest of the topics, reference books will be followed. Some Class notes will be uploaded on the web. White board will be used for most of the time.

For some cases, multimedia projector will be used for the convenience of the students.

Students must study up to the last lecture before coming to the class and it is suggested that they should go through the relevant chapter before coming to the class. Just being present in the class is not enough- students must participate in classroom discussions.

XIII – Textbook/ References

1. Computer Fundamentals – Pradeep K. Sinha; Sixth Edition.
2. Computer Systems: Digital Design, Fundamentals of Computer Architecture and Assembly – Ata Elahi.
3. Number Systems: An Introduction to Algebra and Analysis - Sergei Ovchinnikov.
4. Digital Fundamentals - Thomas L. Floyd.
5. Computer Science: A Very Short Introduction - Subrata Dasgupta.
6. Introduction to Computer Science - Gilbert Brands.
7. Flowchart and Algorithm Basics: The Art of Programming - A. B. Chaudhuri.
8. The Elements of Computing Systems: Building a Modern Computer from First Principles.
9. The Elements of Computing Systems – Noam Nisan.
10. Fundamentals of Computer – E Balagurusamy.

XIV - List of Faculties Teaching the Course

1. ARGHO DAS
2. DR. ASHRAF UDDIN
3. DR. KAMRUDDIN NUR
4. DR. M M MANJURUL ISLAM
5. DR. MD. SOHIDUL ISLAM
6. DR. S M HASAN MAHMUD
7. M. ARIFUR RAHMAN
8. MAZID-UL-HAQUE
9. MD. SAJID BIN FAISAL
10. MD. MEHEDI HASSAN ONIK
11. MOHAMMAD SAMAWAT ULLAH
12. MST. TASNIM PERVIN
13. NAZIA ALFAZ
14. NAZMUL HOSSAIN
15. NAZMUS SHAKIB SHAN
16. RASHIDUL HASAN NABIL
17. RIFATH MAHMUD
18. SUPTA RICHARD PHILIP
19. WARDAH SALEH

XV – Verification:

Prepared by	Approved by:
![signature] ------------------------------- Dr. Ashraf Uddin (Course convener) Assistant Professor Department of CS Date : 25.01.2022	 .... Mashiour Rahman Associate Professor and Associate Dean Faculty of Science and Technology Date: