SCHOOL OF STEM SYLLABUS

TERM:

INSTRUCTOR:

COURSE CODE: CSC-111

OFFICE HOURS:

COURSE TITLE: Computer Science I

OFFICE LOCATION:

DAY(S) AND TIME(S):

EMAIL:

LOCATION:

PHONE:

COURSE PREREQUISITE: MATH-100

CREDITS: 3

COURSE DESCRIPTION:
This course introduces the fundamentals of computer science. Algorithm design, flowchart, structure, programming methodology, hardware, and software are discussed. Programming languages Visual Basic 2019 or above are used to illustrate these concepts.

STUDENT LEARNING OUTCOMES:

Upon the successful completion of this course students will be able to:

- Implement Visual Basic applications for ease of use (CLO#1)
- Use Visual Basic programming language facilities (CLO#2)
- Draw forms and controls as part of the user interface and assign properties (CLO#3)
- Code event and general procedures; sub procedures; function procedures; in forms files and in code modules (CLO#4)
- Create complex interface structures involving forms and controls, menus and dialog boxes (CLO#5)
- Use the inherent file handling capabilities of Visual Basic (CLO#6)
- Debug and write applications using Visual Basic product tools such as Database (CLO#7)
- Use the extensive conversion and formatting capabilities of Visual Basic (CLO#8)
- Use the data control to display and update Access data bases (CLO#9)

TEXTBOOK AND SUPPLEMENTAL MATERIALS:

For this course, all course materials are Free and under ZCT Open Educational Resource(OER)
Visual Basic Fundamentals:

A Beginner's Guide to Programming, First Edition

Author: Mohammad Imam,

School of STEM, Hudson County Community College

Students will use the book Visual Basic Fundamentals, Visual Studio 2019 community edition and Online editor/compiler to complete their tasks. .

GRADING POLICY:

Learning Activities	Points
Discussions	**100**
Labs	**600**
Research Project	**100**
Quizzes	**200**
Total	**1000**

SAMPLE COURSE SCHEDULE:

Unit, Title	Lecture / Readings	Learning Activities	Grade	Learning Outcome and Number
Unit 1 Basics of VB.NET Programming	Read Chapter 1 Understanding the History and Fundamentals of Visual Basic Programming Language from your OER textbook Watch faculty Unit 1 Video Watch till part 4 up to 0:42 hours of https://www.youtube.com/watch?v=HFWQdGn5DaU	**Unit 1** Discussion: Visual Basic as Object-Oriented Programming Language **Unit 1 Lab #1:** Download and install Visual Studio(VS) Community edition 2019. Explore basic form and controls. Writing a simple program with Visual	25 points 50 points 50 points	CLO#1, CLO#2

		Studio(VS) and an online compiler		
Unit 2 Control Structures and Data Types	Read Chapter 2 Fundamentals of Visual Basic Programming from your OER textbook Watch faculty Unit 2 Video Watch till part 8 up to 1:20 hours of https://www.youtube.com/watch?v=HFWQdGn5DaU	**Unit 2** Discussion: Research Project selection **Unit 2 Lab #2:** Writing a VB program with an online compiler declaring constants, and different types of variable writing VB codes to utilize these constants, variables, and data types. **Unit 2 Lab #3:** To design UI that adds, subtracts, multiplies, divides, and evaluates exponential of 2 numbers **Quiz #1**	25 points 50 points 50 points 50 points	CLO#2, CLO#3, CLO#4
Unit 3 Advanced GUI Design	Read Chapter 3 Graphical User Interfaces and Event-Driven Programming from your OER textbook Watch faculty Unit 3 Video Watch till part 11 up to 2:00 min of https://www.youtube.com/watch?v=HFWQdGn5DaU	**Unit 3** Discussion: Research project Data Sources and Relevance **Unit 3 Lab # 4:** Designing GUI* and Utilizing controls (buttons, text boxes, labels, etc.) to enhance user experience with the following concepts. If-Else, Select Case, and Looping structures (For, While, Do-While) **Unit 3 Lab #5:** Designing GUI* and Utilizing controls (buttons, text boxes, labels, msg box). Nested selections and Nested loops to handle advanced software challenges	25 points 50 points 50 points	CLO#3, CLO#5
Unit 4 Functions and Methods	Read Chapter 4 Modularizing VB.NET Code with Functions and Methods from your OER textbook Watch faculty Unit 4 Video	**Unit 4** Discussion: Can we have a useful program without Functions or Methods? **Unit 4 Lab #6 and Lab**	25 points	CLO#4, CLO#7

	Watch till part 16 up to 2:30 min of https://www.youtube.com/watch?v=HFWQdGn5DaU	**#7:** Editing, Compiling, and Running a VB** program with an online compiler utilizing Functions, Methods, and Procedures **Quiz #2**	50 points 50 points 50 points	
Unit 5 Working with Arrays and File I/O	Read Chapter 5; Working with Arrays in VB.NET and Chapter 6; Working with Files in VB.NET from your OER textbook Watch faculty Unit 5 and 6 Video	**Research Project First Draft** **Unit 5 Lab #8:** Editing, Compiling, and Running a VB Program with array definitions and manipulation of array **Unit 5 Lab #9:** Editing, Compiling, and Running complete VB programs utilizing Files for inputs and outputs.	50 points 50 points 50 points	CLO #6, CLO #7. CLO #8
Unit 6 Graphics, Multimedia, and Database	Read Chapter 7; Integrating Graphics, Animation, and Sound in VB.NET and Chapter 8; Database Interaction with VB.NET from your OER textbook Watch faculty Unit 7 and 8 Video	**Unit 6 Discussion:** Importance of Animation and Graphics in Visual Basic **Unit 6 Lab #10:** Editing, Compiling, and Running complete VB programs incorporating graphics, animation, sound effects, and multimedia elements into Visual Basic applications **Unit 6 Lab #11:** Editing, Compiling, and Running complete VB programs utilizing Database connections. **Quiz #3**	50 points 50 points 50 points 50 points	CLO #5. CLO#9

Unit 7 Research Project		**Research Project Presentation** **Quiz #4 as the Final Exam**	50 points 50 points	CLO #1 to. CLO#9

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