COURSE OUTLINE: CSA103 - BUSINESS APPLIC I

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Course Code: Title	CSA103: BUSINESS APPLICATIONS I
Program Number: Name	2095: COMPUTER PROGRAMMING
Department:	COMPUTER STUDIES
Academic Year:	2023-2024
Course Description:	In this course, the learner will work with spreadsheets, databases, geographic information systems and data mining / modelling software. Microsoft Excel will be the application of choice for spreadsheets where the learner will produce several business models that incorporate various formulas to produce numerical, charting and statistical outputs. The learner will use Microsoft Access to create database business solutions that include tables, relationships, forms and queries leading to SQL, report and data mining outputs. In addition, the learner will setup databases on Microsoft SQL Server, apply security permissions, then create a link to Microsoft Access front-end forms. The learner will utilize Power BI to analyze and present their data outputs in visual, filtered and unfiltered solutions.
Total Credits:	4
Hours/Week:	4
Total Hours:	56
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Substitutes:	CSA102
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**2095 - COMPUTER PROGRAMMING** VLO 4 Implement robust computing system solutions through validation testing that aligns with industry best practices. VLO 5 Communicate and collaborate with team members and stakeholders to ensure effective working relationships. VLO 8 Adhere to ethical, legal, and regulatory requirements and/or principles in the development and management of computing solutions and systems. VLO 9 Support the analysis and definition of software system specifications based on functional and non-functional requirements. VLO 11 Apply one or more programming paradigms such as, object-oriented, structured or functional programming, and design principles, as well as documented requirements, to the software development process. VLO 12 Model, design, implement, and maintain basic data storage solutions.
Essential Employability Skills (EES) addressed in this course:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems.

	EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	A+ = 90-100% A = 80-89% B = 70-79% C = 60-69% D = 50-59% F < 50% Students are expected to be present to write all tests in class, unless otherwise specified. If a student is unable to write a test due to illness or a legitimate emergency, that student must contact the professor prior to class and provide reasoning. Should the student fail to contact the professor, the student shall receive a grade of zero on the test. If a student is not present 10 minutes after the test begins, the student will be considered absent and will not be given the privilege of writing the test. Students exhibiting academic dishonesty during a test will receive an automatic zero. Please refer to the College Academic Dishonesty Policy for further information. In order to qualify to write a missed test, the student shall have: a.) attended at least 75% of the classes to-date. b.) provide the professor an acceptable explanation for his/her absence. c.) be granted permission by the professor. NOTE: The missed test that has met the above criteria will be an end-of-semester test. Labs / assignments are due on the due-date indicated by the professor. Notice by the professor will be written on the labs / assignments and verbally announced in the class. Labs and assignments that are deemed late will have the following penalty: 1 day late - 10% reduction, 2 days late, 20% reduction, 3 days late, 30% reduction. After 3 days, no late assignments and labs will be accepted. It is the responsibility of the student who has missed a class to contact the professor immediately to obtain the lab / assignment. Students are responsible for doing their own work. Labs / assignments that are handed in and are deemed identical or near identical in content may constitute academic dishonesty and result in a zero grade. Students are expected to be present to write in-classroom quizzes. There are no make-up options for missed in-class quizzes. Students have the right to learn in an environment that is distraction-free, therefore, everyone is expected to arrive on-time in class. Should lectures become distracted due to students walking in late, the professor may deny entry until the 1st break period, which is 50 minutes into the class or until that component of the lecture is complete. The total overall average of test scores combined must be 50% or higher in order to qualify to pass this course. In addition, combined tests, Labs / Assignments total grade must be 50% or

higher.

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Demonstrate an understanding of spreadsheet concepts, terminology and screen layouts.	1.1 Demonstrate the basic structure of a spreadsheet - rows, columns, cells 1.2 Explain why spreadsheet applications are used 1.3 Demonstrate the use of screen menus, shortcuts, options and toolbars 1.4 Open and save workbooks and templates 1.5 Enter labels and values 1.6 Name, rename and move worksheets 1.7 Preview and print worksheets
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Demonstrate an understanding of how to use formulas and perform calculations.	2.1 Enter and edit numbers 2.2 Copy and move cell contents 2.3 Apply absolute and relative addressing 2.4 Copy formulas with both relative and absolute cell references 2.5 Build conditional formulas using the IF function including operators 2.6 Utilize the sum, max, min, average, product, pmt and vlookup functions
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Demonstrate an understanding of how to format a worksheet.	3.1 Format values 3.2 Adjust fonts and font size 3.3 Change attributes and alignment 3.4 Adjust column width 3.5 Use AUTOFORMAT 3.6 Insert and delete columns and rows 3.7 Apply colours, patterns, and borders 3.8 Utilize conditional formatting 3.9 Check Spelling 3.10 Freeze columns and rows 3.11 Hide and protect worksheet cells and sheets
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Demonstrate an understanding of how to create and edit charts.	4.1 Plan and design a chart 4.2 Create a Pie, Column and Bar chart 4.3 Edit and make changes to charts 4.4 Apply labels and features to charts 4.5 Preview chart types
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Demonstrate an understanding of automating worksheet tasks.	5.1 Plan, record, run and edit a macro 5.2 Use shortcut keys with macros 5.3 Use the Personal Macro Workbook 5.4 As a macro as a menu item 5.5 Create a toolbar for macros 5.6 Add buttons to operate macros

Course Outcome 6	Learning Objectives for Course Outcome 6
6. Demonstrate an understanding of Geographic Information Systems.	6.1 Create an Arcgis online account 6.2 Create a GIS model on paper, demonstrating visual knowledge of coordinates 6.3 Create detailed GIS data using Microsoft Excel 6.4 From Arcgis, import your Microsoft Excel .csv data 6.5 Format your data to produce accurate numerical representation 6.6 Produce heat maps to visualize patterns in the GIS data 6.7 Create web-apps using web-map data
Course Outcome 7	**Learning Objectives for Course Outcome 7**
7. Demonstrate an understanding of database concepts using tables.	7.1 Create tables utilizing various field types (attributes) 7.2 Establish primary and foreign keys in tables 7.3 Create one-to-one and one-to-many relationships between tables 7.4 Apply input masks and data validation to field types 7.5 Apply referential integrity as needed 7.6 Establish input masks and validation rules
Course Outcome 8	**Learning Objectives for Course Outcome 8**
8. Demonstrate the use of forms development.	8.1 Create forms using the blank form and form wizard options 8.2 Demonstrate knowledge of objects, properties and values 8.2 Utilize the resize and align controls 8.3 Modify form objects properties 8.4 Perform calculations using text boxes 8.5 Modify tab order 8.6 Create combo boxes to retrieve data from several tables 8.7 Insert images 8.8 Create visual basic code to perform actions using objects and events 8.9 Build if-else-endifs statements using VBA 8.10 Utilize the msgbox function to test your VBA code routines 8.11 Implement the check box object in conjunction with if-else-endif code 8.12 Utilize the on-load options in the Form_Load event
Course Outcome 9	**Learning Objectives for Course Outcome 9**
9. Demonstrate the use of queries and reports.	9.1 Create queries using the blank query and query wizard options 9.2 Add fields from one or more tables to establish queries 9.3 Use the criteria field option to selectively filter data 9.4 Create paramater queries 9.5 Build summary and crosstab queries 9.6 View and interpret the sql outputs of the queries 9.7 Create reports using the report wizard 9.8 Use queries to feed your report creation process 9.9 Customize reports to fit user needs
Course Outcome 10	**Learning Objectives for Course Outcome 10**
10. Demonstrate the use of	10.1 Establish a SQL Server using classroom lab solutions

	Microsoft SQL Server.	10.2 Create databases 10.3 Create the login credentials to the databases 10.4 Create tables including primary and foreign keys 10.5 Link your tables via relationships 10.6 Apply security to the tables specific to your authorized database users 10.7 Create an automated backup of your data, then test it 10.8 Create and test SQL Views 10.9 Create an ODBC link to Microsoft Access 10.10 Create forms in Microsoft Access to allow for data entry and editing of SQL Server data 10.11 Produce queries and reports including html web page outputs
	Course Outcome 11	**Learning Objectives for Course Outcome 11**
	11. Demonstrate the use of Microsoft Power BI.	11.1 Install and configure Power BI 11.2 Link Power BI to your SQL Server data 11.3 Create various visual outputs of your SQL data 11.4 Filter SQL data to refine visual findings

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Databases and Data Mining	30%
Lab Assignments	40%
Spreadsheets and GIS	30%

Date: May 31, 2023

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.