COURSE GUIDE

Course / Section	**IT365 Data Analytics 1**	Credit Units	3
Term Offered	First Semester 2021-2022	Total Hours	90
Instructor	Jasmine A. Tulin		
Pre-Requisite/s	CSIT 122		
Co-Requisite/s	None		

Course Description

This course provides students with the fundamental concepts and tools needed to understand the emerging role of business analytics in organizations and shows students how to apply basic business analytics tools in a spreadsheet environment and statistical computing and graphics software. How to use and interpret analytic models and results for making better business decision. Students use a computer software package for data analysis.

Course Learning Outcomes

CLO1: Explain the importance of the course in relation to the goals and objectives of the program, the college and the university
CLO2: Demonstrate knowledge on different data models.
CLO3: Design a data model with visualization using Microsoft Excel/ R
CLO4: Implement analytical models using software tools R , WEKA and Microsoft Excel Analysis ToolPak
CLO5: Create their own data models

Topics / Modules and Intended Learning Outcomes

Topic 1: Introduction on Data Analytics
LO1: Recognize the importance of data analytics to decision making
LO2: Determine the types of data
LO3: Differentiate analytic methods categories
LO4: Create a study using one data variable and being able to describe the collected data
Topic 2: Data Visualization
LO1: Develop graphs using excel
LO2. Develop a dashboard from a given big data
Topic 3: Measures of Locations and Variability
LO1: Solve problems using measures of location
LO2: Solve problems using measures of variability
LO3: Perform Excel Functions
Topic 4: Measures of Association Between Two Variables
LO1: Describe different types of relationship between two variables using Scatter plot diagram
LO2: Use appropriate model for distribution
LO3: Gather data with two variables and able to identify the relationship between variables
LO4: Interpret relationship between to variables
Topic 5: Simple Linear Regression Model
LO1: Construct a simple linear regression model using excel and R studio
LO2: Compute the coefficients of the regression model
Topic 6: Multiple Linear Regression Model
LO1. Describe and identify dependent and independent variables
LO2. Examine independent variables though inference and regression
LO3: Use R and Excel in computing regression
LO4: Develop a Multiple Regression Model
Topic 7: Classification Method
LO1: Create a decision tree
LO2: Analyze Confusion matrix
LO3: Create an association rule

MADE4Learners FRAMEWORK

Approach	√	Distance Blended		Distance		Online	/	Online Blended
Technical Requirements	○ Hardware: PC / laptop, and/or Smartphone capable of text, call, email, PDF reader ○ Software: Microsoft Excel, R Studio, Weka ○ Materials, etc: Wifi connection at home							
Communication Means	○ MS Teams chat, email ○ Learning Management System: Moodle							
Reminders	○ It is expected that students have the maturity and discipline to do self-directed learning and that the Instructor facilitates the learning through consultation and/or elaboration of topics. ○ The learning activities will be uploaded in both the Moodle and MSTeams channel. ○ Submission of output/s is every end of the week preferably Friday and should be submitted through the Moodle/MS Teams channel. ○ The student must have the capability to do video conferencing for online class consultation/discussions. ○ Written summative exams like midterm and final shall be done in CIT University if ECQ will be lifted already. ○ The student can contact their instructor online during their class hour time.							

PLAN OF LEARNING

Week	Specific Dates	Teaching / Learning Activities	Output / Formative Assessment	Assessment Tools
1	August 23 - 27	Class Orientation Topic 1: Introduction on Data Analytics Laboratory: Case Study Presentation	Download class materials for the next two weeks. Join class group (MS Teams, Moodle) Library Work Case Study presentation	 Rubric Case Study
2	August 31 – September 3	Topic 2: Data Visualization Laboratory: Create a dashboard given a big data	 Assignment Dashboard	 Rubric on Dashboard
3	September 6 - 10	Topic 3: Measures of Locations and Variability Laboratory: Excel Activity in measures of locations and variability	Assignment Quiz	Functions evaluations
4	September 13 - 17	Topic 4: Measures of Association Between Two Variables Case Study: Measures of association between to variables using Excel, R Studio	Case Study	Functions evaluations Rubric on Relationship between two variables
5	September 20 - 22	Continuation of Topic 4		
Midterm Requirement – September 13(Written Exam), September 24(Practical Exam)				
6	September 27 – October 1	Topic 5: Simple Linear Regression Model Laboratory: Perform Linear Regression using Excel, R Studio and Weka	 Assignment	 Functions evaluations

7	October 4 - 8	Topic 6: Multiple Linear Regression Model Laboratory: Excel Activity in measures of association between to variables using Excel	Assignment Quiz Proposal on their Project for Multiple Regression	Functions evaluations Rubric on Linear Regression
8	October 11 - 15	Topic 7: Classification Method Laboratory: Perform Naïve Bayes, Association using Weka	Models	Functions evaluations
9	October 18 - 20	Project Presentation		
Final Exam – October 22				

GRADING SYSTEM

A. Midterm Grade
   Formative Assessment (All Exercises and Case Study) - 70%
   Summative Assessment (Midterm Examination) - 30%

B. Tentative Final Grade
   Formative Assessment (All Exercises and Case Study) - 70%
   Summative Assessment (Final Examination) - 30%

C. Final Grade
   Midterm Grade - 50%
   Tentative Final Grade - 50%

Faculty In-charge:

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