DSC3108 Big Data Mining and Analytics	(3rd Year Undergraduate, 1st Semester) (BSCS_3:1)
University	Uganda Christian University
School /Faculty	ENGINEERING, DESIGN AND TECHNOLOGY
Department	Computing and Technology
Programme	Bachelor of Science Data Science
Course Code	DSC3108
Course Title	Introduction To Data Science
Total Contact Hours	48
Practical Hours /Week	2
Personal Study Hours	45
Lecture Hours/ Week	2
Credit Units	45
Course Designer	Dr. Daphne Nyachaki Bitalo
Lecturer(s)	Dr. Daphne Nyachaki Bitalo. Email: dbitalo@ucu.ac.za Ms. Bibian Amito. Email: bamito@ucu.ac.ug
Welcome message	Welcome to the Big Data Mining and Analytics course! This is an elective course where you will be introduced to the fundamentals of big data, how to mine it, transform it, analyse it and see its various applications.

Description	Students will explore theoretical issues, methods, tools and problems that relate to data-rich issues in medicine, social sciences, and finance. We will examine real world examples and cases to place data big data analytics in the Ugandan context. In addition, we will work hands-on using Python programming language, and their associated big data libraries.

Audience Description	Year 3, Semester 1 (15 students)
Delivery Mode	This course takes into account exceptional coaching and teaching methods. Along with lectures, sensible education, and practical training, the students are trained in elective subjects of various specializations. The teaching methodology is designed to offer adaptability and communicative-based learning to the students. Listed below are the teaching methodology and techniques for this course: 1. Group and Individual Projects (1 project a semester) 2. Traditional Classroom-Based Teaching (4 hours a week) 3. Practical Lab Sessions (2 hours a week) 4. Invited guest lectures on the scope and applications of probability and statistics 5. Continuous and remedial assessments

Course Objectives	• To develop practical data analysis skills, which can be applied to practical problems. • To develop fundamental knowledge of concepts underlying data science projects from multiple disciplines. • To develop practical skills needed in modern analytics. • To give hands-on experience with real-world data analysis. • To develop applied experience with handling big data tools for predictive analysis, clustering analysis and machine learning

Brief Content Description	• Fundamentals of Big Data • Data Mining Concepts and Techniques • Big Data Tools and Platforms • Big Data Analytics

	• Big Data Applications and Ethics

Teaching and Learning Methods	•Discussions, •role plays •case studies •field visits at data centers
Learner Support Plan	•Face-to-face meetings •Moodle (Online) •Group discussions

Resources/Teaching and Learning Materials	Recommended Reading: "Data Mining: Concepts and Techniques" Third Edition by Jiawei Han and Micheline Kamber Statistical and Machine-Learning Data Mining: Techniques for Better Predictive Modeling and Analysis of Big Data, Third Edition by Bruce Ratner Language of instruction: Python
Course Plan Assessment	This course counts for 45 credits. Course work, projects and class tests contribute to 60% of the final grade and the exam contributes 40% of the final grade. Class quizzes and practical assessments: Will be communicated Test 1: 20% (Week 3-Week 4) Course Project: 20% (Week 6-Week 10) Test 2: 20% (Week 7-Week 8) Remedial test: 40% (Week 11) [**This test will only be recommended for students who fail Tests 1 and 2**] Final examination: 40% (Week 13-Week 14)