

DEREE COLLEGE SYLLABUS FOR: BAN 4848 Advanced Business Analytics								
(New course: Fall 2025)		UK Level: 6 UK Credits: 15 US Credits: 3/2/3						
PREREQUISITES:	CS 1070 Introduction to Information Systems or ITC 1070 Information Technology Fundamentals CS 2179 Business Information Systems or CS 3051 Business Driven Technology (Mathematics Placement Test) MA 2130 Calculus I MA 2021 Applied Statistics MA 2027 Linear Algebra BAN 1023 Introduction to Data Science CS 4252 Visualization and Reporting CS 4267 Applied Business Analytics							
CATALOG DESCRIPTION:	Data Science techniques, methodology, models, and processes. Multiple and logistic regression, and advanced material for business analysts with a main focus on artificial intelligence.							
RATIONALE:	This course delves into advanced Business Analytics. The course equips students with a profound understanding of artificial intelligence applications. Also, it empowers business analysts to harness complex data structures for strategic insights, enhancing their capabilities to navigate and leverage the evolving landscape of advanced analytics in business contexts.							
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Compose an advanced Business Analytics project. 2. Apply and combine advanced Analytics techniques in a real-life business scenario.							
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: ➤ Lectures, class discussions on case studies, flipped classroom, simulation and best teaching and learning practices. ➤ Laboratory hands-on sessions on business process design, business process mining and business process automation tools. ➤ Office hours held by the instructor to provide further assistance to students. ➤ Use of the Blackboard Learning platform to further support communication, by posting lecture notes, assignment instruction, timely announcements, and online submission of assignments.							
ASSESSMENT:	<table><tr><td colspan="2">Summative:</td></tr><tr><td>First assessment - Midterm Examination: Submission of a PowerPoint Presentation describing a proposal for an advanced Business Analytics Project followed by Q&A session</td><td>40%</td></tr><tr><td>Final assessment - Research Project: Submission of an essay presenting a real-life Advanced Business Analytics Project accompanied by Python code</td><td>60%</td></tr></table>		Summative:		First assessment - Midterm Examination: Submission of a PowerPoint Presentation describing a proposal for an advanced Business Analytics Project followed by Q&A session	40%	Final assessment - Research Project: Submission of an essay presenting a real-life Advanced Business Analytics Project accompanied by Python code	60%
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	<p>Formative:</p> <table border="1"> <tr> <td>Coursework: Case Problems</td><td>0%</td></tr> <tr> <td>Coding assignments</td><td>0%</td></tr> </table> <p>The formative assessments aim to shape teaching along the semester and prepare students for the summative assessments. The midterm examination tests Learning Outcomes 1. The research project tests Learning Outcomes 1 and 2.</p>	Coursework: Case Problems	0%	Coding assignments	0%
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READING LIST:	<p>REQUIRED READING:</p> <ul style="list-style-type: none"> Joel Grus "Data Science from Scratch". O'Reilly Media, latest edition, ISBN: 9781492041139. <p>RECOMMENDED READING:</p> <ul style="list-style-type: none"> Foster Provost and Tom Fawcett. "Data Science for Business: What you need to know about data mining and data-analytic thinking". O'Reilly Media, latest edition, ISBN-13: 978-1449361327. John Atkinson-Abutridy. "Text Analytics: An Introduction to the Science and Applications of Unstructured Information Analysis", Publisher: "Chapman and Hall/CRC", 2022, ISBN 9781000581072 Galit Shmueli, Peter C. Bruce, Peter Gedeck, Inbal Yahav, Nitin R. Patel. "Machine Learning for Business Analytics: Concepts, Techniques, and Applications with Analytic Solver Data Mining", Publisher: "Wiley", 4th edition, 2023, ISBN 1119829836, 978-1119829836. 				
COMMUNICATION REQUIREMENTS:	Daily access to the course's site on the College's Blackboard CMS. Effective presentation skills using proper written and oral English.				
SOFTWARE REQUIREMENTS:	MS Office, Blackboard CMS, and latest version of Python 3.				
WWW RESOURCES:	https://www.techtarget.com/searchbusinessanalytics/definition/advanced-analytics https://www.youtube.com/watch?v=T70pkWAhlwk https://www.python.org/				
INDICATIVE CONTENT:	<ol style="list-style-type: none"> 1. Introduction to Advanced Business Analytics 2. Linear Regression 3. Multiple Regression 4. Logistic Regression 5. Decision Trees 6. Neural Networks 7. Deep Learning 8. Clustering 9. Natural Language Processing 10. Network Analysis 11. Recommender Systems 12. Databases and SQL 13. MapReduce 14. Data Ethics. 				