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**CCT College Dublin Continuous Assessment**

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| **Programme Title:** | Higher Diploma in Data Analytics for Business / Higher Diploma in AI Apps | | |
| **Delivery Mode:** | Online | | |
| **Cohort Details:** | Higher Diploma Data Analytics Sep2025 FT/PT Semester 1 | | |
| **Module Title(s)**: | Strategic Thinking | | |
| **Assignment Type:** | Individual | **Weighting(s):** | 20 % |
| **Assignment Title:** | CA 1 – Capstone Project Proposal | | |
| **Lecturer(s)**: | Taufique Ahmed | | |
| **Issue Date:** | 22nd Sept 2025 | | |
| **Submission Deadline Date:** | 29th October, 2025 at 23:59 | | |
| **Late Submission Penalty:** | Late submissions will be accepted up to **5** calendar days after the deadline. All late submissions are subject to a penalty of **10%** of the mark awarded.  Submissions received more than 5 calendar days after the deadline above **will not** be accepted and a mark of 0% will be awarded. | | |
| **Method of Submission:** | **This assignment is submitted via Moodle.** | | |
| **Instructions for Submission:** | Your work must be uploaded to Moodle.  • Capstone Project Proposal in Word format ONLY. The word count is 1,000.  • Ethics form signed by all students and submitted as PDF.  • ZIP or RAR files will not be accepted. Files must be submitted separately. | | |
| **Feedback Method:** | **Results posted in Moodle gradebook** | | |
| **Feedback Date:** |  | | |

Strategic Data Analysis for Student Retention in Jiu-Jitsu Academies

**Introduction**

The expansion and viability of a Jiu-jitsu academy depend essentially on the ability to keep students engaged and committed. Compared to other business models with continuous income, student loyalty is key to reducing churn and ensuring the academy's long-term economic stability. This project aims to put data analysis into practice to convert customer relationships from reactive to proactive.

**Problem Definition**

The high student turnover rate is a commercial weakness that has an immediate impact on the academy's financial organisation, resulting in extra costs such as marketing and attracting new students. The threat of attrition is amplified by the fundamental principle of Customer Relationship Management (CRM), which posits that the cost of acquiring a new customer can be up to five times higher than the cost of retaining an existing customer (Dyche, 2002). This problem is most evident at the base: ‘the biggest and most immediate retention opportunity for most academies is definitely in retaining white belts’ (JJGF, n.d.)

**Objectives**

This Capstone project aims to analyse strategy gaps through thorough data analysis in order to accurately predict which students are highly likely to drop out. The goal is to enable the creation of a new methodology for the engagement and retention programme that is economically sustainable and focused, improving investments in CRM.

**Scope of the Project**

The scope of the project focuses on using data analytics techniques and predictive models to identify risk patterns based on engagement metrics such as average class attendance and contract duration. The main area of focus will be to concentrate retention efforts on groups of students recognised as high risk, confirming the strategic value of Data Analytics in the sustainability of ongoing service businesses.

Methodology

The method will consist of the following steps:

1. Exploratory Data Analysis (EDA): Identification of dropout correlates (e.g., belt level and training frequency)

2. Predictive Modelling: Application of Decision Trees, a model for Data Analytics for Business due to its high interpretability and ability to generate clear business rules (Dyche, 2002).

3. Retention Strategy Development: Proposal of a segmented retention plan. The predictive model will be translated into actionable business rules (e.g., ‘If frequency is less than X and the contract is monthly, activate incentive plan Y’), allowing for continuous and proactive management action.