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**CCT College Dublin Continuous Assessment**

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| **Programme Title:** | Higher Diploma Data Analytics for Business | | |
| **Cohort:** | Full-Time Feb2024 | | |
| **Module Title(s)**: | Strategic Thinking | | |
| **Assignment Type:** | Individual / Practical | **Weighting(s)**: | 20 % |
| **Assignment Title:** | CA 2 Capstone Report | | |
| **Lecturer(s)**: | James Garza ([james@cct.ie](mailto:james@cct.ie)) | | |
| **Issue Date:** |  | | |
| **Submission Deadline Date:** | 19th May 2024 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:** | **Moodle** | | |
| **Instructions for Submission:** | Your work must be uploaded to Moodle.   * Report in Word format ONLY. Word count: ~2,000. * Jupyter notebook artefact. * GitHub link at the end of the report. * ZIP or RAR files will not be accepted. Files must be submitted separately. | | |
| **Feedback Method:** | **Results posted in Moodle gradebook** | | |
| **Feedback Date:** |  | | |

**Learning Outcomes:**

Please note that this is not the assessment task. The task to be completed is detailed on the next page.

This CA will assess student attainment of the following minimum intended learning outcomes:

1. Critically evaluate the relationship between information technology infrastructure and organisational competitive advantage.

2. Critically analyse and select open source and proprietary software with a view to developing IT

solutions for business and business-related IT problems.

3. Utilise tools of strategic business analysis to evaluate the current macro and micro business environment with a view to formulating future action plans.

4. Research emerging technologies and critically evaluate their impact on business and business information systems in general.

5. Understand the relationship between data gathering/utilisation and business intelligence and its impact on industry policy.

Attainment of the learning outcomes is the minimum requirement to achieve a Pass mark (40%). Higher marks are awarded where there is evidence of achievement beyond this, in accordance with QQI *Assessment and Standards, Revised 2013*, and summarised in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Percentage Range** | **CCT Performance Description** | **QQI Description of Attainment** | |
| **Level 6, 7 & 8 awards** | **Level 9 awards** |
| 90% + | Exceptional | Achievement includes that required for a Pass and in **most** respects is significantly and consistently beyond this | Achievement includes that required for a Pass and in **most** respects is significantly and consistently beyond this |
| 80 – 89% | Outstanding |
| 70 – 79% | Excellent |
| 60 – 69% | Very Good | Achievement includes that required for a Pass and in **many** respects is significantly beyond this | Achievement includes that required for a Pass and in **many** respects is significantly beyond this |
| 50 – 59% | Good | Achievement includes that required for a Pass and in **some** respects is significantly beyond this | Attains all the minimum intended programme learning outcomes |
| 40 – 49% | Acceptable | Attains all the minimum intended programme learning outcomes |
| 35 – 39% | Fail | Nearly (but not quite) attains the relevant minimum intended learning outcomes | Nearly (but not quite) attains the relevant minimum intended learning outcomes |
| 0 – 34% | Fail | Does not attain some or all of the minimum intended learning outcomes | Does not attain some or all of the minimum intended learning outcomes |

Please review the CCT Grade Descriptor available on the module Moodle page for a detailed description of the standard of work required for each grade band.

The grading system in CCT is the QQI percentage grading system and is in common use in higher education institutions in Ireland. The pass mark and thresholds for different grade bands may be different from what you have experience of in the higher education system in other countries. CCT grades must be considered in the context of the grading system in Irish higher education and not assumed to represent the same standard the percentage grade reflects when awarded in an international context.

**Assessment Task**

This assessment aims to evaluate your ability to apply project management methodology to develop and execute a capstone project. You will select a dataset, conduct exploratory data analysis, pre-process the data, implement at least one machine learning algorithm, and present your findings effectively through a comprehensive report. The capstone project will be based on a dataset of your choice from any domain, such as finance, marketing, or any other.

You will submit a comprehensive report detailing the project plan, business understanding, data understanding, data preparation, machine learning implementation, and an artefact of code. The report should also include a summary of the findings, conclusions, and any future recommendations. The report should be presented in a clear and concise manner, and it should demonstrate your ability to use a project management methodology. The project management methodology should enable you to prioritise tasks and monitor the progress of the capstone project. Additionally, the report should provide an overview of the project's timeline, milestones achieved, and any challenges faced during the implementation phase. It should highlight the key insights gained from analysing the data and present any significant trends or patterns observed. Moreover, the report should address any limitations or constraints encountered during the project and propose potential solutions for future improvements.

This is a two-semester module, and the capstone project will continue into semester two.

Students are advised to review and adhere to the submission requirements documented after the assessment task.

Further details of the assessment:

1. **A GitHub repo must be created, and the Jupyter Notebook and report Word document must be put into a GitHub repo for version control. The lecturer will be added to the repo as a collaborator. The GitHub repo link will be added at the end of the report. There should be at least 5 to 10 commits throughout the time worked on the project.**
2. **Exploratory data analysis of your dataset. Use descriptive statistics.**
3. **Use at least one machine learning algorithm.**
4. **Support your analysis with references and properly reference ALL sources that you have used. WARNING – If you do not support your work, you will not receive a high mark!**
5. WORD COUNT: 2,000 words. If your report is too short or long, you may *lose up to 10% of marks*!

**Submission Requirements**

All assessment submissions must meet the minimum requirements listed below. Failure to do so may have implications for the mark awarded.

* Include a professional report paper in Word format ONLY of about 2,000 words.
* Code must be submitted as a Jupyter Notebook artefact.
* ZIP or RAR files will not be accepted. Files must be submitted separately.
* You must submit your work by the deadline date specified. Otherwise, you will be subject to late submission penalties.
* Use [Harvard Referencing](http://40.115.124.2/sp/subjects/guide.php?subject=harvardref) when citing third-party material.
* Make sure you submit your own work**. No plagiarism will be tolerated.**
* Include the CCT assessment cover page.

**Additional Information**

* In any situation, the lecturers are entitled to call you in for a further explanation of your code/report/slides.
* Lecturers are not required to review draft assessment submissions. This may be offered at the lecturer's discretion.
* In accordance with CCT policy, feedback to learners may be provided in written, audio or video format and can be provided as individual learner feedback, small group feedback or whole class feedback.
* Results and feedback will only be issued when assessments have been marked and moderated / reviewed by a second examiner.
* Additional feedback may be provided as individual, small group or whole class feedback. Lecturers are not obliged to respond to email requests for additional feedback where this is not the specified process or to respond to further requests for feedback following the additional feedback.
* Following receipt of feedback, where a student believes there has been an error in the marks or feedback received, they should avail of the recheck and review process and should not attempt to get a revised mark / feedback by directly approaching the lecturer. Lecturers are not authorised to amend published marks outside of the recheck and review process or the Board of Examiners process.
* Students are advised that disagreement with an academic judgement is not grounds for review.
* For additional support with academic writing and referencing students are advised to contact the CCT Library Service or access the [CCT Learning Space](http://learningspace.cct.ie/subjects/index.php).
* For additional support with subject matter content students are advised to contact the [CCT Student Mentoring Academy](https://moodle.cct.ie/mod/forum/view.php?id=55148)
* For additional support with IT subject content, students are advised to access the [CCT Support Hub](https://moodle.cct.ie/course/view.php?id=1861).
* The use of generative AI tools (e.g. ChatGPT, Dall-e, etc.) is permitted in this assignment for the following activities:
  + Brainstorming and refining your ideas;
  + Fine-tuning your research questions;
  + Finding information on your topic;
  + Drafting an outline to organise your thoughts; and
  + Checking grammar and style.
* The use of generative AI tools is not permitted in this course for the following activities:
  + Impersonating you in classroom context
  + Completing group work that your group has assigned to you
  + Writing a draft of a writing assignment
  + Writing entire sentences, paragraphs or papers to complete class assignments.
* You are responsible for the information you submit based on an AI query. Your use of AI tools must be properly documented and cited.
* Any assignment that is found to have used generative AI tools in an unauthorised way will be subject to college disciplinary procedures as outlined in the QA Manual.
* When in doubt about permitted usage, please ask for clarification.

**Marking Scheme Summary**

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| --- | --- |
| **Description** | **Weighting** |
| Project management and planning   * Project plan, timeline and execution * Challenges and solutions * GitHub number of commits. | 20 |
| Data Analysis and Preprocessing   * Exploratory Data Analysis (EDA) * Descriptive statistics * Visualisations * Initial findings of possible patterns, anomalies or insights from the data. * Data/data processing/feature engineering has been explained correctly with the aid of visualisation tools and metrics. | 25 |
| Machine Learning Implementation and Evaluation   * Algorithm selection and application * Model development and validation. * Methodology is sensible and explained appropriately. * Model has been discussed. * Code works. | 30 |
| Report Writing and Presentation   * Clarity and structure. * Analysis and Interpretation * Recommendations and future work * Analysis of results and conclusions are sensible. * Referencing and citations have been done correctly. | 25 |
| * Poor referencing, spelling, grammar, and layout will incur marking penalties. |  |
| **TOTAL** | **100** |