CCT College Dublin Continuous Assessment

Programme Title:	*BSc in Computing in IT - Sept 2021 cohort*		
Cohort:	*FT*		
Module Title(s):	*Problem Solving for Industry*		
Assignment Type:	*Individual / Group / Integrated*	**Weighting(s)**:	**Problem Solving for Industry:** 90%
Assignment Title:	*Capstone Group Project*		
Lecturer(s):	*Muhammad Iqbal, Ken Healy*		
Issue Date:	*24th Feb 2025*		
Submission Deadline Date:	*18th May 2025 (23:59 Irish Time)*		
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** • *Project Report* • *Poster Presentation* • *Solution/Artefact/Findings Demonstration*		
Instructions for Submission:	Upload separate files on Moodle including MS word report, Jupyter notebook, R/ Python code, Poster presentation, Presentation, and any other supporting documents.		
Feedback Method:	Feedback will be provided on Moodle.		
Feedback Date:	**After exam board approval**		

Learning Outcomes:
Please note 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:

- **MLO1:** Demonstrate an advanced ability to research an assigned problem area and propose an innovative solution while applying, professional, ethical and legal considerations. (Linked to PLO1)
- **MLO2:** Construct a detailed project report using appropriate scheduling techniques and perform a resource and risk analysis using various best practice approaches, with consideration for costs and benefits of both design and implementation choices. (Linked to PLO2)
- **MLO3:** Apply knowledge and understanding within specific areas in modern computing such as programming, databases, networking, web development and mobile technologies, in both familiar and unfamiliar domains. (Linked to PLO3)
- **MLO4:** Design and build a working prototype with consideration for various systems analysis and systems development approaches and formulate judgements and conclusions on design and performance with regard to possible trade-offs inherent in a given problem. (Linked PLO4)

- **MLO5:** Act under supervision to reflect on the project progression through the iterative design process and through the various supervised feedback mechanisms, and through peer feedback within teams. (Linked to PLO6)
- **MLO6:** Exhibit competence, accountability and autonomy by making informed critical decisions at key project milestones and perform relevant research required for in-depth understanding and awareness of project attributes to manage learning tasks independently. (Linked to PLO7)
- **MLO8:** Confidently present a working product in a succinct, efficient manner and show how the product was developed with specific reference to sectorial relevance, identify areas for improvement and further development. (Linked to PLO8)

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:

<table>
<tr><th rowspan="2">Percentage Range</th><th rowspan="2">CCT Performance Description</th><th colspan="2">QQI Description of Attainment</th></tr>
<tr><th>Level 6, 7 & 8 awards</th><th>Level 9 awards</th></tr>
<tr><td>90% +</td><td>Exceptional</td><td rowspan="3">Achievement includes that required for a Pass and in most respects is significantly and consistently beyond this</td><td rowspan="3">Achievement includes that required for a Pass and in most respects is significantly and consistently beyond this</td></tr>
<tr><td>80 – 89%</td><td>Outstanding</td></tr>
<tr><td>70 – 79%</td><td>Excellent</td></tr>
<tr><td>60 – 69%</td><td>Very Good</td><td>Achievement includes that required for a Pass and in many respects is significantly beyond this</td><td>Achievement includes that required for a Pass and in many respects is significantly beyond this</td></tr>
<tr><td>50 – 59%</td><td>Good</td><td>Achievement includes that required for a Pass and in some respects is significantly beyond this</td><td rowspan="2">Attains all the minimum intended programme learning outcomes</td></tr>
<tr><td>40 – 49%</td><td>Acceptable</td><td>Attains all the minimum intended programme learning outcomes</td></tr>
<tr><td>35 – 39%</td><td>Fail</td><td>Nearly (but not quite) attains the relevant minimum intended learning outcomes</td><td>Nearly (but not quite) attains the relevant minimum intended learning outcomes</td></tr>
<tr><td>0 – 34%</td><td>Fail</td><td>Does not attain some or all of the minimum intended learning outcomes</td><td>Does not attain some or all of the minimum intended learning outcomes</td></tr>
</table>

The capstone project will be a group-based endeavor where learners will explore a data analytics or artificial intelligence (AI) domain of their choice. Using the CRISP-DM (Cross Industry Standard Process for Data Mining) framework, students will identify and address a real-world problem within these fields. The pairs will be formed within the first two to three weeks of the programme based on a formation technique based on the cohort size, for example, randomisation, prior knowledge and experience or self-selection. The group size will be based on pair (Max 2 group members). Group members will collaborate using a GitHub classroom account with the module facilitators added as additional group members for monitoring and feedback purposes. Group members can use additional collaboration tools that they believe will enhance their pair communication and interaction, but GitHub classroom remains the only recognised repository for pair work for assessed purposes. The link for Github classroom is mentioned below

Github Classroom Link for Registration: https://classroom.github.com/a/wrIMrwrW

Note: The students are allowed to work alone or independently based on the permission by the module lecturer.

The initial area to be investigated should be an area of interest to all within each group. Facilitators will engage in these initial ideas and help groups scope the project to manageable proportions. This process

ensures learners are working towards deadlines and facilitates guidance as new learning and knowledge is acquired as the curriculum progresses. The structure of the project in phases is expressed in the below:

Deliverable	Description	Learner Activity
Deliverable 1	Project Report	Learner groups are formed, and groups begin reflecting on the overarching area of interest, investigate data available, and initially express their understanding and concerns. Learner groups engage in pair formation and the separation of roles and responsibilities to address the six phases of the CRISP-DM framework, which are: 1. Business Understanding 2. Data Understanding 3. Data Preparation 4. Modelling 5. Evaluation 6. Deployment In addition, you should have an Introduction to the report with a section dedicated to Roles and Responsibilities. The report should also contain a Conclusion chapter with an Appendix containing a Group Reflection and an Appendix capturing evidence of group work.
Deliverable 2	Poster Presentation	Learner groups will design and develop a Poster Presentation to capture their approach to the six phases of the CRISP-DM framework.
Deliverable 3	Solution/Findings Demonstration	Learner groups will present their working solution (Data visualisations, results, ML or AI models/ implementation, conclusions etc) in the form of a pre-recorded presentation. Learners will also be required to attend a live Q&A session where faculty members will raise specific questions relating to the documentation and solution produced.

Please review the CCT Grade Descriptor available in this CA Project 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.

Summary of Assessed Deliverables and Submission Dates

Deliverables	Assessed Element	Description	% Weighting	
			Individual Contribution	Group Contribution
Deliverable 1: Project Report (Due 18th May 2025 @11.59pm)	CRISP-DM Implementation	Learner groups will develop a project plan with roles and responsibilities to address their area of interest. The group will develop their plan following the CRISP-DM framework and associated phases.	10%	5%
	Group Reflection Report	The group will be required to complete an end of project summary reflection report.	10%	n/a
	Deliverable 1 Total Marks (25%)		**20%**	**5%**
Deliverable 2: Poster Presentation (Due 18th May 2025 @11.59pm)	Design, Content, Layout, Articulation	Learner groups will create a Poster Presentation to succulently capture their phased approach to addressing the overarching project problem and proposed solution.	20%	5%
	Deliverable 2 Total Marks (25%)		**20%**	**5%**
Deliverable 3: Solution/Findings Demonstration (Due 18th May 2025 @11.59pm. **LIVE Q&A Session to be held on 26th May and 27th 2025 between 10am and 4.00pm)**	Working Solution	Learner groups will present their working solution (Data visualisations, results, AI models/ implementation, conclusions etc.) in the form of a pre-recorded presentation.	10%	10%
	Q&A Session	All group members will be asked to attend a live Q&A session where questions will be raised by faculty members.	20%	n/a
	Deliverable 3 Total Marks (40%)		**30%**	**10%**
		TOTAL MARKS	**70%**	**20%**

Statement of Acceptable Use of Artificial Intelligence

Acceptable and Unacceptable Use of AI

• 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
  - Generating code for your assignment
  - 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.

Reassessment (General Policy)

Different but pedagogically equivalent and appropriately weighted repeat assessment tasks may be given for repeat assessments. Learners who fail to achieve the minimum intended learning outcomes associated with a given assessment will receive constructive feedback (in addition to the normal assignment feedback) on the submitted work and the brief of the repeat assessment. In the case of group work, the group may be directed to recover the failed element of a group assignment, and/or individuals within groups may be directed to recover the individually assessment elements of a group project.

Important Notes:

- Plagiarism detection software will be used on all submissions.
- Formative feedback will be provided in-class as the project progresses, and group monitoring will be conducted through the designated GitHub classroom account accounts.
- Your documentation should present your approach to the project, including elements of project planning (timelines).
- Ensure that your documentation follows a logical sequence through the planning/ research/ justification/ implementation phases of the project.
- Integrated/ Separate Jupyter notebooks/ Code files can be provided to show the code developed for the capstone project.
- Please ensure that additional resources are placed and linked to a logical file structure e.g., Scripts, Images, Report, Data etc…
- Ensure that you include your raw and structured datasets in your submission.
- 5000 (+/- 10%) words in report (not including code, code comments, titles, references or citations)
- Your Word count MUST be included in the report at the start.

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

- Jupyter Notebook/ Code Files, Word Document, Dashboard and version control address
- Be submitted by the deadline date specified or be subject to late submission penalties.
- Be submitted via Moodle upload link before the deadline.
- Use Harvard Referencing when citing third party material.
- Be the student's own work.
- Include the CCT assessment cover page in the report.

Additional Information

- 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 requested by *contacting Your Lecturer,* 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.
- For additional support with subject matter content students are advised to contact the CCT Student Mentoring Academy
- For additional support with IT subject content, students are advised to access the CCT Support Hub.