PROGRAMMING CODE BASED PROJECTS DISSERTATION RUBRIC (IICT – MQF LV 6)

N.B. This rubric is applicable only to dissertations that include an IT project.

GRADING CRITERIA	LEVEL OF PERFORMANCE (MARKS)				Student score
	0	1	2-3	4-5	
APTITUDE, PROACTIVITY AND CREATIVITY **K1:** Demonstrate initiative, proactivity, creativity and critical self-reflective aptitude.	Student showed no initiative or creativity. Work on the research was mostly passive. No participation was demonstrated during supervisor meetings. There was a general inability to identify strengths and limitations in the research plan and no dissertation ideas were developed.	Student showed a general lack of initiative and creativity. Work on the research was somewhat passive and minimal participation was shown. Suggestions were mostly provided by the supervisor. There was a slight inability to identify potential strengths and weaknesses in the research plan. An idea was partially developed with the assistance of the supervisor	Student showed a moderate amount of initiative and creativity. Proactivity in terms of research work was average. While a moderate amount of participation was shown, student had a fair understanding of the hypothesis. Some strengths and weaknesses were identified within the research plan and one or more dissertation ideas were developed with the assistance of the supervisor	Student demonstrated good creativity and initiative. S/he proactively showed a solid understanding of the hypothesis and actively participated during supervisor meetings. S/he identified most strengths and weaknesses of the research within the research plan. Constructive suggestions for improvement were also provided. Self-reflective ability was also shown through innovative research methods and/or data-analysis methods that were designed.	
COMMITMENT, TIME MANAGEMENT AND FOLLOW-UP ON MEETINGS **K2:** Show commitment, time management and ability to follow-up on supervisor comments and recommendations.	Student showed no commitment to the final output of the dissertation. There was no attempt to adhere to milestones and was unaware of what backup strategies are. A general inability to follow up on supervisor recommendations was identified.	Student showed minimal commitment to the final output of the dissertation. There was minimal attempt to adhere to some of the milestones. Student relies on the supervisor for feasible backup strategies. A proper follow up on supervisor recommendations was not always possible due to lack of understanding	Student was moderately committed to the final output of the dissertation. Most (but not all) of the milestones were adhered to. Backup strategies were provided but were not always feasible. A proper follow up on supervisor recommendations was not always possible either due to lack of time or understanding	Student was very committed to maximising the output and insight of the dissertation. Most milestones were adhered to. Milestones were mostly adhered to and where necessary feasible backup strategies were provided. There were regular follow ups on supervisor recommendations were made. Queries related to research the problem were also done to third parties.	
RESEARCH QUESTIONS AND OBJECTIVES **K3:** Outline a clear set of research questions and objectives that specifically address the problem within the given context	Research questions and objectives were not researchable and the research outline was absent. No research context was defined and no connection to existing research was established.	Most of the research questions and objectives were either badly formulated or not researchable. The research outline was somewhat weak. The research context was vaguely defined however a connection to existing research was not established.	Most (but not all) of the research questions and objectives were clear and concise. The context of the research was properly defined however a connection to existing research was only established where the student was recommended (by the supervisor) to do so.	All research questions were meticulously formulated and provided a clear set of objectives. Additionally, the scope of the research was clearly defined. A novel area was identified within the research context and further insight was provided throughout the dissertation.	

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DOCUMENT STRUCTURE AND REFERENCING **K4:** Reproduce a well-structured document that conforms to the college guidelines while also containing the textual quality and referencing style required of a dissertation.	Document does not conform to the college guidelines. Document is badly-structured. Information was presented in the wrong locations. Level of detail was not sufficient. Textual quality is very port. Most of the document contained spelling and grammatical errors thus making it unreadable. Referencing is mostly lacking and/or is not used properly if present.	Document mostly does not conform to college guidelines. Information in the document is placed in different areas of the dissertation. Sections rarely follow any logical order and lack the required level of detail (e.g. missing, inconsistent, irrelevant information). Textual quality is poor. Numerous spelling and grammatical errors are present making the document difficult to understand. Student made minimal use of the referencing framework. More often references are lacking.	Document mostly conforms to college guidelines. While most of the dissertation structure is correct, not all the information is located correctly. Sections do not always follow the logical order of the document hierarchy. The level of detail across all sections is inconsistent. Some sections are redundant. Textual quality of the document is fair with a number of spelling and grammatical errors. The text may be equivocal in the meaning being conveyed. Student made proper use of the referencing framework in the dissertation.	Document conforms to college guidelines. Overall, the dissertation is well-structured. All information is located correctly. Sections are unique, concise, serve a specific purpose and follow an ordered hierarchy with a gradual increase in the level of detail (where necessary). Textual quality of the dissertation is praiseworthy. A good command of the English language is demonstrated throughout the entire document. Very few (if any) spelling and grammatical errors. Student made proper use of the referencing framework in the dissertation.	
RESEARCH DOMAIN **K5:** Show sufficient knowledge of the domain and demonstrate the ability to convey the purpose of the research.	The abstract was not provided or does not conform to the standards being proposed. Does not include any relevant information that attempts to summarise the dissertation document. Poor content quality **(MARKS: 0)**	Abstract is a poor representation of most the dissertation. Around half (or less) of the following were covered with a poor level of detail: research domain, introduction, statement of the problem, objectives, research methodology, measures used, sample, results, conclusions and future recommendations. **(MARKS: 0.5)**	Abstract Includes a fair (to above average) representation of most aspects of the dissertation. Contains most (but not all) of the following: research domain, introduction, statement of the problem, objectives, research methodology, measures used, sample, results, conclusions and future recommendations. **(MARKS: 1-1.5)**	Abstract includes a good (to excellent) representation of all the aspects of the dissertation. A good description of the research domain, introduction, Statement of the problem, objectives, research methodology, measures used, sample, results, conclusions and recommendations for future research were provided. The abstract is very concise yet meticulous throughout. **(MARKS: 2-2.5)**	
	The Introduction was not provided or somewhat does not tap into the research domain in any manner. Poor level of content provided and does not adhere to dissertation standards. **(MARKS: 0)**	A poor (to average) introduction was provided. Barely taps into the research domain and is for the majority lacking detail or misses out on sections such as: overview of the research domain, problem statement, motivation, hypothesis, research questions, objectives and outline of the research **(MARKS: 0.5)**	An average (to good) introduction was produced. Sections such as: overview of the research domain, statement of the problem, motivation, hypothesis, research questions, objectives and outline of the research were competently covered however some sections lacked the required level of detail. **(MARKS: 1-1.5)**	A very good (to excellent) introduction was produced. Sections such as: overview of the research domain, statement of the problem, motivation, hypothesis, research questions, objectives and outline of the research were all rigorously covered. **(MARKS: 2-2.5)**	

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	0	1-3	4-5	6-7	
LITERATURE REVIEW **A1:** Analyse, process, compare and contrast relevant sources to construct a solid review of literature.	Student was unable to organize literature and come up with a valid synthesis.	Student was able to organize the literature in the form of a basic comparison. It contains a limited amount of sources. Therefore, the synthesis does not necessarily provide proper insights, hypotheses or conclusions.	Student was able to organize literature in the form of a good comparison. A good number of sources were used. Adequate comparison was provided in the final version of the literature review. The synthesis contains valid insights, hypotheses or conclusions.	Student was able to organize literature which includes a vast array of sources. The comparison and critical evaluation of the literature was very good to excellent. The final version of the literature review is very clear and concise.	
CANDIDATE TECHNIQUES **A2:** Identify, analyse and document candidate techniques that are of relevance to the present study.	No information regarding established candidate techniques was provided within the dissertation document as part of the literature review and methodology.	Some valid information regarding established candidate techniques relevant to the present study was provided. Poor level of detail was provided as part of the literature review and methodology.	Valid information regarding established candidate techniques relevant to the present study was provided. Fair level of detail was provided as part of the literature review and methodology.	Detailed information regarding established candidate techniques relevant to the present study was provided. Good level of detail was provided as part of the literature review and methodology.	
DATA ACQUISITION, PROCESSING AND INTERPRETATION **A3:** Apply procedures of data acquisition, processing and interpretation based on the appropriate research methodology.	No methodological basis was selected and applied. Student was unable to collect, process, and/or interpret data.	Research methodology was selected and applied, Student was able to organize the data, and provide some basic interpretations of it. Minimal to no data processing was performed. This led to minimal contribution towards the research question/s.	Research methodology was well selected and applied. The student was able to collect, process and interpret the data correctly. This led a valid contribution towards the research question/s	A very good to excellent research methodology was applied. Student was able to collect, process and interpret the data and was also able to perform elaborate checks on the data. Additional measures to ensure noise reduction in the data.	
TESTING **A4**: Adapt relevant measures of testing and validation to the present research.	Student was unable to setup and/or execute any measures of testing / validation.	Student was able to setup and/or execute some testing measures. Errors were made, thus invalidating (part of) the test. Supervision was required.	Student was able to execute testing measures that have been used in existing literature. Due consideration was given to error and uncertainty while testing. Some form of pilot testing has also been implemented.	Student was able to execute and adapt testing measures to the present research. Quantitative consideration of sources of error and uncertainty were taken into account. Execution of the experiment was flawless. Additional testing (such as pilot testing) was made to ensure the validity of the techniques used.	

IMPLEMENTATION **A5:** Produce a prototype that targets the research objectives utilising a relevant technique.	Student was unable to produce a prototype for the present research.	Student was able to produce a prototype and was also able to make minor modifications to an existing model. Errors were present in the output. No validation was provided.	Student was able to produce a prototype and was able to make major modifications to an existing model based on literature. Minimal to no errors were present. Some basic validation was provided	Student was able to produce a prototype completely from scratch and/or added a core functionality to an existing model such that it is better suited for the research objectives of the present study. Excellent technical background was demonstrated. Advanced validation was provided.	

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	0	1-3	4-5	6-7	8-10	
THEORETICAL FRAMEWORK **S1:** Compile and utilise a list of sources which comprise the theoretical underpinnings of the present research.	No discussion of underlying theories was provided in the dissertation document. Reference list contained a minimal number of sources and were barely used in context.	There is some discussion of underlying theories within the dissertation document. In some instances, the information provided is inaccurate. Reference list contained a small number of sources. Some of the sources included were relevant.	Theories relevant to the research were identified and discussed in the dissertation document. No theories were adapted to the requirements of the present study. Reference list contained a fair number of sources. A fair number of sources included were relevant.	Theories relevant to the research were identified and discussed in the dissertation document. Theories were partially adapted to the requirements of the present study. Reference list contained a fair to good number of sources. Most of the sources included were relevant.	Theories relevant to the research were identified and discussed in the dissertation document. A complete overview of relevant theories was provided Theories were completely adapted to the requirements of the present study. Reference list contained a good number of sources (including a number of peer-reviewed papers). All sources included were relevant.	
IMPLEMENTATION **S2:** Develop a research artefact in a logical and meticulous manner	Student was unable to produce a research artefact that addressed the objectives. No core techniques were implemented.	Student was able to produce a research artefact and one core technique was implemented but failed to address any research objectives.	Student was able to produce a research artefact and one core technique was implemented that addressed one or more research objectives. This is because, the student was in part unable to adapt the core technique to the present research.	Student was able to produce a research artefact that was partially adapted to the research objectives. One core technique was implemented. Good technical background was demonstrated. More than half the research objectives were addressed.	Student was able to produce a research artefact that is completely adapted to the research objectives. More than one technique was implemented to determine the most optimal outcome. Excellent technical background was demonstrated. All research objectives were addressed.	

RESULTS AND DISCUSSION **S3:** Evaluate, challenge and discuss the research findings and limitations of the present study.	Discussion section was completely missing in final submission or was not tapping onto the key points.	Discussion section was very poor and limited. Answers to the original questions were not addressed properly. Student identified only some possible limitations which were either irrelevant or non-existent. Poor critical evaluation of the results with almost no references to existing literature.	Discussion section was fair and somewhat limited. Research questions were answered but some arguments were not well-constructed. Student indicated most limitations in the research, but did not weigh their impact on the main results. Fair critical evaluation of the results with some references to existing literature were made.	A good discussion section with some minor flaws in writing and clarity of arguments. Student indicated most limitations in the research and also weighed their impact on the main results. Good critical evaluation of the results with references to existing literature was provided	An impeccable discussion of results with very concise and clear arguments. Student was able to identify all possible limitations in the research and also indicated which limitations affect the conclusions most. Student critically evaluated the results and rigorously referred to existing literature. In case of differences, a possible reason for the discrepancy is provided.	
SUMMARY OF FINDINGS AND CONCLUSIONS **S4:** Synthesize and present appropriate argumentations, conclusions and recommendations for further research and development.	Summary of Findings, conclusions and recommendations for further research were missing or did not meet expected standard. No connection between research questions, results and conclusions was provided.	Summary of findings, conclusions and recommendations for future research were very poorly formulated. In many cases only partial answers to the research questions were provided. Conclusions were a mere repetition of the results.	Fair level of detail in summary of findings, conclusions and recommendations for further research was provided. Most (but not all) research questions were addressed. Some conclusions were substantiated by results while some others were not.	Good level of detail in summary of findings, conclusions and recommendations for further research was provided. All research questions were addressed. Most (but not all) conclusions were substantiated by results.	Excellent level of detail in summary of findings, conclusions and recommendations for further research was provided. Very good links to all the research questions were substantiated by result highlights. All conclusions were clearly-defined. Recommendations were well-linked to the findings.	

LEVEL OF PERFORMANCE – VIVA (to be completed by the viva board – tick only one)			
Student was unable to defend or discuss the dissertation. Knowledge of the document was very poor. Student was unable to explain anything related to the document.	Student found it difficult to defend or discuss the dissertation. Knowledge of the document was poor. Student was unable to explain most parts of the document.	Student was able to defend the dissertation. Knowledge of the document was fair. Certain parts of the document were explained with a good level of detail; however certain other parts could not be explained properly.	Student was very confident in defending the dissertation. Knowledge of the document is very good. Student was able relate the findings in the dissertation existing research and was also able to convey the practical implications of the findings.

TOTAL SCORE	FINAL GRADE

Reference Documents

- DOC 100 Dissertation Guidelines