Course Assessment

DATA 245

PLO 2

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
Apply Naive Bayes (NB) method to classify data.	Test	Unable to provide the correct and complete answer.	Able to provide the correct answer with some issues.	Able to provide the correct and complete answer.
Implement any ML algorithms from class from scratch	Project	Unable to complete assignment using basic python package to implement ML algorithms.	Able to complete assignment on-time but the algorithm performance is fair.	Able to complete assignment on-time with good ML performance and prepare a good quality report.
Apply ML algorithms to solve practical problems	Project	The project does not cover every aspect, e.g., data collection, modeling and validation, in realizing a ML project.	The project does cover every aspect, e.g., data collection, modeling and validation, in realizing a ML project. But the quality of report is not well written	The project does not cover every aspect, e.g., data collection, modeling and validation, in realizing a ML project with excellent report and presentation.

DATA 298A

PLO 2

Rubric	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
- Summarize data preparation results, including raw, pre-processed, transformed and prepared datasets. - Statistically present the results in visualization formats.	Workbook and Project Report (multidisciplinary data analytics technologies)	- Incorrectly summarize data preparation results, including raw, pre-processed, transformed and prepared datasets, or - Statistically present the results in poor visualization formats.	- Correctly summarize data preparation results, including raw, pre-processed, transformed and prepared datasets. - Statistically present the results in visualization formats.	- Correctly summarize data preparation results, including raw, pre-processed, transformed and prepared datasets. - Statistically present the results in excellent visualization formats.
- Compare models including targeted problems, features, approaches (statistics, machine learning, and deep learning), strengths and limitations. - Provide justifications for each model.	Project Report (data analytics and machine learning models)	- Incorrectly or insufficiently compare models including targeted problems, features, approaches (statistics, machine learning, and deep learning), strengths - Provide insufficient justifications for at least one model.	- Correctly and adequately compare models including targeted problems, features, approaches (statistics, machine learning, and deep learning), strengths and limitations. - Provide sufficient justifications for each model.	- Correctly and thoroughly compare models including targeted problems, features, approaches (statistics, machine learning, and deep learning), strengths and limitations in a good format. - Provide sufficient justifications for each model.

PLO 4

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
- Survey of current technologies including summary and classifications of features and applications. - Comparison of current solutions including approaches, algorithms and models.	Workbook and project report (Literature survey on data analytics and machine learning research)	- Either incomplete survey of current technologies or include incorrect summary and classifications of existing projects, features and applications. - Either incorrect or in complete and comparison of current solutions including approaches, algorithms and models.	- Complete survey of current technologies including correct summary and classifications of existing products, features and applications. - Correct and complete and comparison of current solutions including approaches, algorithms and models.	- Complete survey of current technologies including correct and clear summary and classifications of existing products, features and applications. - Correct, complete and clear comparison of current solutions including approaches, algorithms and models.
Describe individual contributions to the technology and solution survey	Workbook and Project Report (Technology survey)	Inapt to conduct independent research and/or generate poor research results	Capable of conduct independent research and generate adequate research results	Fully capable of conduct independent research and generate excellent research results

PLO 6

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation

- Identified issues and recommended a plan of potential solutions. - Described achievements including solutions to issues identified in previous meetings.	Progress Report	- The engagement and productivity of meetings do not meet expectations. - Unable to identify realistic issues and recommend a plan of potential solutions. - Unable to clearly describe achievements including solutions to issues identified in previous meetings.	- The engagement and productivity of meetings meet expectations. - Identified realistic issues and recommended an adequate plan of potential solutions. - Clearly described most achievements including solutions to issues identified in previous meetings.	- The engagement and productivity of meetings exceed expectations. - Identified realistic issues and recommended a comprehensive plan of potential solutions. - Clearly described all achievements including solutions to issues identified in previous meetings.

DATA 298B

PLO 1

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
Demonstrated sufficient knowledge to engage in the total lifecycle of data analytics projects	Project Report – Section 1.2, Chapters 2, 4 and 5	Can't complete the total project lifecycle	Completed the total project lifecycle and delivered adequate project artifacts	Completed the total project lifecycle and delivered quality project artifacts

PLO 3

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
Demonstrated effective written and oral communication skills	Project report, presentation and demonstration	Didn't demonstrated effective written and oral communication skills	Demonstrated effective written and oral communication skills	Demonstrated very effective written and oral communication skills

PLO 5

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
Demonstrated ability to utilize quantitative skills and knowledge to solve the project problems	Project Report – Sections 6.1, 6.3, and 6.4	Didn't demonstrate ability to utilize quantitative skills and knowledge to solve the project problems	Demonstrated ability to utilize quantitative skills and knowledge to solve the project problems	Demonstrated excellent ability to utilize quantitative skills and knowledge to solve the project problems

PLO 7

Rubrics	Data Source	Below Expectation	Meet Expectation	Exceed Expectation
Demonstrated ability to identify the project contribution to the cultural, economic, educational and social well-being in diverse contexts.	Project Report – Section 7.6	Didn't identify the project contribution to the cultural, economic, educational and social well-being in diverse contexts.	Identified the project contribution to the cultural, economic, educational and social well-being in diverse contexts.	Identified and estimated the project contribution to the cultural, economic, educational and social well-being in diverse contexts.

Multi-year Assessment Schedule

	Spring 2024	Spring 2025	Spring 2026	Spring 2027	Spring 2028
PLO 1	DATA 298B	DATA 298B	DATA 298B	DATA 298B	DATA 298B
PLO 2	DATA 245 DATA 298A	DATA 245 DATA 298A	DATA 245 DATA 298A	DATA 245 DATA 298A	DATA 245 DATA 298A
PLO 3	DATA 298B	DATA 298B	DATA 245 DATA 298B	DATA 245 DATA 298B	DATA 245 DATA 298B
PLO 4	DATA 270	DATA 298A	DATA 298A	DATA 298A	DATA 298A

	DATA 298A				
PLO 5	DATA 240 DATA 298B	DATA 298B	DATA 298B	DATA 298B	DATA 298B
PLO 6	DATA 298A	DATA 298A	DATA 298A	DATA 298A	DATA 298A
PLO 7	DATA 298B	DATA 298B	DATA 298B	DATA 298B	DATA 298B