Xi'an Jiaotong-Liverpool University
西交利物浦大学

XJTLU Entrepreneur College (Taicang) Cover Sheet

Module code and Title	**DTS206TC Applied Linear Statistical Models**
School Title	**School of AI and Advanced Computing**
Assignment Title	**Coursework**
Submission Deadline	**23:59 31st May (Friday)**
Final Word Count	**NAN**
If you agree to let the university use your work anonymously for teaching and learning purposes, please type **"yes"** here.	

I certify that I have read and understood the University's Policy for dealing with Plagiarism, Collusion and the Fabrication of Data (available on Learning Mall Online). With reference to this policy I certify that:

- My work does not contain any instances of plagiarism and/or collusion.
  My work does not contain any fabricated data.

By uploading my assignment onto Learning Mall Online, I formally declare that all of the above information is true to the best of my knowledge and belief.

Scoring – For Tutor Use	
Student ID	

Stage of Marking	**Marker Code**	**Learning Outcomes Achieved (F/P/M/D) (please modify as appropriate)**			**Final Score**
		A	**B**	**C**	
1st Marker – red pen					
Moderation – green pen	**IM Initials**	The original mark has been accepted by the moderator (please circle as appropriate):			Y / N
		Data entry and score calculation have been checked by another tutor (please circle):			Y
2nd Marker if needed – green pen					

For Academic Office Use			**Possible Academic Infringement (please tick as appropriate)**	
Date Received	**Days late**	**Late Penalty**	☐ **Category A**	Total Academic Infringement Penalty (A,B, C, D, E, Please modify where necessary) _____
			☐ **Category B**	
			☐ **Category C**	
			☐ **Category D**	
			☐ **Category E**	

The assignment must be submitted via Learning Mall Online to the correct drop box. Only electronic submission is accepted and no hard copy submission. All students must download their file and check that it is viewable after submission. Documents may become corrupted during the uploading process (e.g. due to slow internet connections). However, students themselves are responsible for submitting a functional and correct file for assessments.

Data Analysis with Linear Statistical Models using *R*

Task.

For this coursework, you are required to choose a dataset of your own interest and perform a regression analysis using *R*. You will then write a short report documenting your analysis and findings.
Report Requirements: The report should cover the following key aspects:

Table 1: Marking Criteria 1 (60 marks)

Criteria	Marks	Details
Data Analysis & Visualization	15	5 marks: Describe the chosen dataset and its variables of interest.
		5 marks: Perform exploratory data analysis using appropriate *R* functions and packages.
		5 marks: Visualize the data using plots, histograms, scatterplots, or other relevant graphical techniques.
Linear Regression	20	5 marks: Conduct linear regression analysis using *R*.
		5 marks: Specify the regression model and justify the choice of variables.
		5 marks: Interpret the coefficients.
		5 marks: Assess the goodness-of-fit of the model.
Diagnostics & Remedial Measures	15	5 marks: Perform diagnostic checks on the regression model to assess its validity.
		5 marks: Identify any violations of the assumptions of linear regression.
		5 marks: Implement appropriate remedial measures to address any issues identified.
Conclusion	10	5 marks: Summarize the key findings of the regression analysis.
		5 marks: Discuss the implications of the results and any insights gained from the analysis.

Table 2: Marking Criteria 2 (40 marks)

Criteria	**Marks**
Clear and concise manner, with appropriate headings and subheadings.	5
Clarity and organization of the report.	5
Quality and professionalism of the overall report.	5
Depth, accuracy and completeness of the regression analysis.	5
The program runs correctly.	5
Include *R* code snippets to demonstrate their analysis and visualization techniques.	5
Originality	5
Reference	5

Note: for each item in the tables above, the work will be marked with the standard below:

- excellent = 5 marks
- good = 3 marks
- fair = 1 marks
- poor = 0 marks

Submission requirements.

- Only English solutions are accepted.
- Both report and codes should be submitted.
- File naming rule:
  - report: *DTS206TC_CW_StudentID.pdf*
  - code: *DTS206TC_CW_StudentID.R*
    If multiple code files are to submit, create a code folder compresse it as *.zip* file, with the name of *DTS206TC_CW_StudentID_codes.zip*
- File format
  - report : only *.pdf* is accepted.
  - code : *.R*
  - Data : Please do NOT include the data in the folder if the data is more than 80M. If you would like to share the data, please upload it to any e-Drive and paste the share link in the report (as reference or footnote).
  - Coverpage should be inserted in the report.
- Page limit: 10-30 pages
- The assignment must be submitted via Learning Mall Online to the correct drop box. Only electronic submission is accepted and no hard copy submission.