

Written Modelling report

The weight: 30%

The task:

Students are to form groups of 3-4 people. Each group will work on a project for an assigned optimisation problem. For the assigned problem:

PART A:

1. Formulate a detailed linear program.
2. Solve the resulting LP model with Excel (use add-in 'Solver')
3. Compile a report that describes the problem and the results. The report must include:
 - a. Introduction (the given problem)
 - b. Mathematical formulation, that includes decision variables, objective function and constraints
 - c. Clear explanation of what decision variables signify, and how the objective function and the constraints are derived and what they signify.
 - d. Explanation of how the input for the Excel Spreadsheet is organised
 - e. The summary of the results
4. The Excel spreadsheet with the LP model and solution must be submitted separately. **Please ensure that the results obtained can be reproduced using the submitted Excel spreadsheet. The Solver model should function correctly on a standard UTS desktop running Microsoft Excel.**
5. Part A of the report should not exceed 4 A4 pages (excluding pictures and diagrams).

PART B:

1. Explain how the [principles of ethical engagement](#) with Aboriginal and Torres Strait Islander peoples would apply in the context of the (hypothetical) assigned problem. What should you keep in mind when communicating, consulting and working for and with the relevant communities?
2. Part B of the report should be at least 1 A4 page and should not exceed 3 A4 pages (excluding pictures and diagrams).

Written Modelling Report marking rubric

Criteria	Scale			Score/Of
	Accomplished 5 8-10 17-20	Satisfactory 3-4 5-7 10-16	Unacceptable or Absent 0-2 0-4 0-9	/5 /10 /20
Spreadsheet - 30				
Spreadsheet model – appropriate structure and data	The input and output cells are set-out efficiently (colour scheme), data is correct appropriately referenced (range names).	The input and output cells are set-out clearly (colour scheme); most data is correct	You can't tell the difference between the input and output cells; Most of the data is incorrect The spreadsheet is unfathomable, data is fictitious	/10
Spreadsheet model – correct optimal solution	The optimal solutions are correct and can be read easily from the spreadsheet.	The optimal solution to at least one question is correct and can be read easily from the spreadsheet. Solver dialogs are properly set .	Model is absent or incorrect , Solver model is absent or does not reproduce the results presented in the spreadsheet.	/20
Report - 30				
Formulation of the LP model	Correct and clear mathematical formulation of the linear program, using set notation; clear explanation of how the model has been set up.	Mostly correct mathematical formulation of the linear program, with explanation of how the model has been set up.	No formulation/or the formulation is completely incorrect	/5
Literacy - Grammar, spelling, punctuation, vocabulary, report's structure	Sentences are complete and grammatically correct. Excellent flow of information. No spelling, grammar and/or punctuation mistakes. All elements of the report are present and completed to an exceptionally high standard.	Sentences are complete and grammatically correct; however, the report is not easy to read. No spelling, grammar and/or punctuation mistakes All elements of the report are present and completed to a satisfactory standard.	Spelling, grammar and/or punctuation mistakes; Many elements of the report are missing and those that are included are completed to unsatisfactory standard.	/5
Application of principles of ethical engagement with Indigenous Australians to problem scenario	Clear and detailed understanding of ethical engagement principles and exceptional application to problem scenario. Comprehensive and respectful consideration of aspects of the scenario that may impact on Indigenous communities. Appropriate language and terminology (complying with UTS IGA Communication Guide) used, without error, throughout.	Good understanding of ethical engagement principles and a realistic application to problem scenario. Recognition of aspects of the scenario that may impact on Indigenous communities. Appropriate language and terminology (complying with UTS IGA Communication Guide) used without major errors.	Inadequate or inaccurate understanding of ethical engagement principles. Lack of application to problem scenario or unrealistic application. Absence of appropriate language and terminology (UTS IGA Communication Guide not followed).	/20
Total				/60