

CB312 System Analysis For Const. Eng.

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laborator y	
BA329	3	6	2	2	0	3

COURSE AIM

The course aims at introducing the student to the fundamentals of systems analysis and its application in the construction engineering and management domain.

COURSE WEEKLY CONTENTS

- 1 Introduction to the mathematical models.
- 2 Formulation of the linear programming models.
- 3 Solving LP models using the graphical solution.
- 4 Solving LP models using the simplex method.
- 5 The transportation problems.
- 6 The assignment problems.
- 7 Midterm Assesment
- 8 Utility estimation and decision making based on utility optimization. Economic aspects.
- 9 Resource allowance, minimum cost models, maximum output models.
- 10 The optimization of resource utilization, and formulation and solving of minimum cost and maximum output models.
- 11 Resource allowance, minimum cost models, maximum output models (continued).
- 12 12th week exam.
- 13 The optimization of resource utilization, and formulation and solving of minimum cost and maximum output models.
- 14 Resource allowance, minimum cost models, maximum output models (continued).
- 15 The optimization of resource utilization, and formulation and solving of minimum cost and maximum output models.

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	1 0	M A R K S		→	30
To be freely distributed among possible assessments							
8 to 12	←		2 0	M A R K S		→	20
13 to 15	←		1 0	M A R K S		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

REFERENCES

- Textbook** Introduction to Management Science: Quantitative Approaches to Decision Making, David R Anderson, Cengage Learning, 2009.
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- Other** Techniques for Decision Making in Construction by Tang, S. L., Ahmad, I. U., Ahmed, S. M., and Ming, L. Publisher: Hong Kong University Press, 2004.
Introduction to Operations Research by Ecker, J.G., Kupferschmid, M. Publisher: Krieger Publishing Co., Malabar, USA, (1988).