

BA 327 Statistics and Numerical Methods

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
BA124	3	6	2	2	0	3

COURSE AIM

This course provides an introduction to Statistical analysis and theory of probability without burdening the student with a great deal of measure theory, in addition to an introduction to numerical analysis. The course helps to build up the important Skill The course helps to build up the important Skills necessary for understanding, analyzing and solving problems

COURSE WEEKLY CONTENTS

- 1 Probability & Statistics / Elementary Probability – Probability Theorems.
- 2 Probability & Statistics / Conditional Probability and Independence.
- 3 Probability & Statistics / Bayes' theorem and total Probability.
- 4 Probability & Statistics / Discrete Probability Distributions - Probability Mass Function – Mathematical Expectation – Mean and Variance.
- 5 Probability & Statistics / Special Discrete Probability Distributions.
- 6 Probability & Statistics / Continuous Probability Distributions - Probability Density Function- Mathematical Expectation – Mean and Variance.
- 7 Midterm Exam
- 8 Probability & Statistics / The Normal distribution.
- 9 Numerical methods / Solution of equations- by iteration : The Bisection Method.
- 10 Numerical methods / Solution of equations by iteration: Newton's Method & The Secant Method.
- 11 Numerical methods / Polynomial Interpolation: Lagrange Form
- 12 Numerical methods / Polynomial Interpolation: Divided Difference Form. + 12th Assessment
- 13 Numerical methods / Polynomial Interpolation: Finite Difference Form.
- 14 Numerical methods / Numerical Integration: Trapezoidal Rule & Simson's Rules.
- 15 General worked Examples and General Review.

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	Probability & statistics for Engineers and Scientists, ninth edition, by Walpole/ Myers / Myers and Ye.
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Other