

Business Forecasting (QUA 307)

Batch : Semester 1 (1443h)

Section: 27517

Credit hours : 3 Number of Sessions : 45 (16 weeks)

Course Instructor: Dr.Manahil Kamal M. Eltayeb

Office : Building 3 , 2nd Floor, Office No. 118

E-mail: maltib@ksu.edu.sa Website: <https://fac.ksu.edu.sa/maltib>

Lecture Time: Monday (8-11)

Office Hours : Monday (11-12) AM, Tuesday, Thursday (12-1) PM " on Bb .

Course Objectives:

- The aim of this course is the **understanding of forecasting methods** for economic, social and administrative phenomena, to assist it in interpretation of current and future behavior for decision-making and policy based on sound statistical tools.
- To provide the student **knowledge of the principles and basic concepts of forecasting methods** and their uses and problems related
- To understand and use the **modern software techniques** for Modeling of the administrative problems in the predictable future.
- To prepare the students to perform **scientific interpretation** of current and future behavior for decision-making and policy based on sound **statistical tools**.

Text Book Recommended

John E. Hanke and Dean W.Wichern / Business Forecasting , Pearson, Ninth Edition.

Title	Required Topic	Weeks
Introduction to Forecasting	<ul style="list-style-type: none"> • IS FORECASTING NECESSARY? • TYPES OF FORECASTS • MACROECONOMIC FORECASTING CONSIDERATIONS • CHOOSING A FORECASTING METHOD • FORECASTING STEPS • MANAGING THE FORECASTING PROCESS 	1
Exploring Data Patterns and an Introduction to Forecasting Techniques	<ul style="list-style-type: none"> • EXPLORING TIME SERIES DATA PATTERNS • EXPLORING DATA PATTERNS WITH AUTOCORRELATION ANALYSIS • CHOOSING A FORECASTING TECHNIQUE • MEASURING FORECAST ERROR • DETERMINING THE ADEQUACY OF A FORECASTING TECHNIQUE 	2-3
Moving Averages and Smoothing Methods	<ul style="list-style-type: none"> • NAIVE MODELS • METHODS BASED ON AVERAGING • EXPONENTIAL SMOOTHING METHODS 	4-5
Simple Linear Regression	<ul style="list-style-type: none"> • REGRESSION LINE • STANDARD ERROR OF THE ESTIMATE • FORECASTING Y • DECOMPOSITION OF VARIANCE • COEFFICIENT OF DETERMINATION • HYPOTHESIS TESTING 	6 / 7 / 9
Multiple Regression Analysis	<ul style="list-style-type: none"> • SEVERAL PREDICTOR VARIABLES • CORRELATION MATRIX • MULTIPLE REGRESSION MODEL • INTERPRETING REGRESSION COEFFICIENTS • INFERENCE FOR MULTIPLE REGRESSION MODELS • MULTICOLLINEARITY • SELECTING THE “BEST” REGRESSION EQUATION 	10/ 11 /13
Regression with Time Series Data	<ul style="list-style-type: none"> • TIME SERIES DATA AND THE PROBLEM OF AUTOCORRELATION • AUTOCORRELATION AND THE DURBIN-WATSON TEST • SOLUTIONS TO AUTOCORRELATION PROBLEMS • TIME SERIES DATA AND THE PROBLEM OF HETEROSCEDASTICITY • USING REGRESSION TO FORECAST SEASONAL DATA 	15/16
The Box-Jenkins (ARIMA) Methodology	<ul style="list-style-type: none"> • Introduction 	16

Midterms (45points)		
First Midterm (20 points) (Bb/ in the University)	Wednesday 14/3/1443 20/10/2021 (12:00-1:30 PM)	8
Second Midterm (25 points) (Bb / in the University)	Monday 10/4/1442 15/11/2021 (12:00-1:30 PM)	12
Quizzes & Homework (Bb) (15 points)		
Quiz (Ch2) (3 points)	25/9/ 2021 (9-10 PM)	4
HW (Ch3) (2 points)	21-23/10/2021 Thursday "5:00 PM" to Saturday "11:00 PM".	8
Quiz (Ch5) (4 points)	5/11/ 2021 (9-10 PM)	10
HW (Ch6) (3 points)	25-27/11/2021 Thursday "5:00 PM" to Saturday "11:00 PM".	13
Quiz (Ch7) (3 points)	17/12/ 2021 (9-10 PM)	16
Holiday		14
Final Exam (40 points)		