ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
COL MBA/MPA PROGRAMME

QUANTITATIVE TECHNIQUES (5564)

CHECKLIST

SEMESTER: SPRING, 2014

This packet comprises the following material:

1. Text Books
2. Course Outlines
3. Assignment No. 1, 2
4. Assignment Forms (2 sets)

In this packet, if you find anything missing out of the above mentioned material, please contact at the address given below:

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Saira Ahmed Awan
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ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Commonwealth MBA/MPA Programme)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Quantitative Techniques (5564) **Semester: Spring 2014**
Level: COL MBA/MPA Programme

Instructions:

(a) All written assignment must be well organized, presented in an easy-to-read format and neat. Moreover, pay particularly close attention to grammar, spelling, punctuation and understandability. Communication is extremely important in this course.

(b) Documentation is likewise very important. Un-supported statements or opinions are worth less to the reader, who desires to verify your finding. Complete and specific documentation is mandatory. Also, your references should be to primary sources, except in rare unusual situation.

(c) Quoting should be kept to an absolute minimum.

Guidelines for Doing Assignments

We expect you to answer each question as per instructions in the assignment. You will find it useful to keep the following points in mind:

1) **Planning:** Read the assignments carefully, go through the Units on which they are based. Make some points regarding each question and then rearrange them in a logical order.

2) **Organization:** Be a little selective and analytical before drawing up a rough outline of your answer. Give adequate attention to question's introduction and conclusion.

   Make sure that:

   a) The answer is logical and coherent,
   b) It has clear connections between sentences and paragraphs,
   c) The presentation is correct in your own expression and style.

3) **Presentation:** Once you are satisfied with your answer, you can write down the final version for submission. It is mandatory to write all assignments neatly in your own handwriting. If you desire so, you may underline the points you wish to emphasize. Make sure that the answer is within the stipulated word limit.

ASSIGNMENT No. 1

(UNIT: 1–10)

Total Marks: 100

Q. 1 (a) Describe the important quantitative techniques used in public system management.

(b) Do you think the day will come when all decisions are made with the assistance of quantitative methods? Give appropriate reasons and examples in support of your answer. **(20)**

Q. 2 (a) Discuss basic concepts of a matrix and the methods of representing large quantities of data in matrix form. How can we apply matrix algebra in various decision models in business and management?

(b) In an economy there are two sectors A and B, the following table gives the supply and demand position of these in million rupees; **(20)**

Producer	**Consumer**		**Final Demand**	**Gross Output**
	A	B		
A	15	10	10	35
B	20	30	15	65

Determine the total output, if the demand changes to 12 for A and 18 for B.

Q. 3 (a) What are the general guidelines of forming a frequency distribution with particular reference to the choice of class intervals and number of classes?

(b) Explain the various diagrams and graphs that can be used for charting a frequency distribution. **(20)**

Q. 4 (a) differentiate between measures of central tendency and measures of variation. What should be the essentials of a good average? Which is the most widely used measure of variation and why?

(b) Calculate the coefficient of variation from the following profits of departmental stores. **(20)**

Profit(Rs.Crore)	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
No of Dept. Store	8	12	20	6	4

Q. 5 find the values of median, harmonic mean, 3rd quartile, 8th deciles, 64 percentile and mode for the following distribution.

X	f
0 – 50	8
50 – 100	20
100 – 150	35
250 – 200	48
200 – 250	40
250 – 300	25
300 – 350	19
350 – 400	5

ASSIGNMENT No. 2

Total Marks: 100

Instructions:

1. This assignment is a research-oriented activity. You are required to develop a term paper and submit to the tutor for evaluation prior to the final examination. The last date of this assignment will be notified separately by our directorate of regional services and the same will be communicated to you directly as well as through approved study centers assigned to you.
2. You will have to participate in the activity fully, actively, and practically to be able to pass the final examination of the course. Please send one copy of this assignment to COL MBA/MPA Programme office, Block No. 11, Allama Iqbal Open University, Sector H-8, Islamabad.
3. For the preparation of this assignment, you should first thoroughly review the conceptual framework of the topic and develop a scholarly material of the same giving references, quotations, and extracts of various scholars and experts. Then visit any business/commercial organization and study the relevant practical aspects there. Combining the theoretical and practical aspects, develop a comprehensive paper consisting of at least 20 to 25 typed pages to be submitted to your tutor.
    a) Introduction to the topic
    b) Important sub-topics
    c) Practical study of the organization with respect to the topic
    d) Review of theoretical and practical situations, merits, de-merits deficiencies or strengths of the organization with respect to the topic under study.
    e) Conclusion and recommendation

f) Annex, if any

4. Prepare a copy of this assignment and submit to your tutor for your evaluation.
5. You should add any illustrative material/data/tables/analysis for effective submission.
6. A number of topics given below are the general aspects of the course and you are required to select one of the topics according to the last digit of your roll number. For example, if the roll number is N-9337241, you will select topic number 1, and if the roll number is O-3427185 then you will select topic number 5 (the last digit).

0. Application of Matrices
1. Methods of collecting primary data
2. Sources of secondary data
3. Business Forecasting
4. Time Series Analysis
5. Measures of Variation and Skewness
6. Collection of Data
7. Basic Calculus and Applications
8. Probability and probability distributions
9. Decision theory

QUANTITATIVE TECHNIQUES (5564)
COURSE OUTLINES

1. QUANTITATIVE DECISION MAKING – AN OVERVIEW

1.1 Introduction
1.2 Meaning of quantitative techniques
1.3 Statistics and operations research
1.4 Classification of statistical methods
1.5 Models in operations research
1.6 Various statistical tehchniques
1.7 Advantages of quantitative approach to management
1.8 Quantitative techniques in business and management
1.9 Use of computers

2. FUNCTIONS AND PROGRESSIONS

2.1 Introduction
2.2 Defintions
2.3 Types of function
2.4 Solution of functions
2.5 Business applications
2.6 Sequence and series
2.7 Arithmetic progression (AP)
2.8 Geometric progression (GP)

3. BASIC CALSULUS AND APPLICATIONS

3.1 Introduction
3.2 Limit and continuity
3.3 Concept of slope and rate of change
3.4 Concept of derivative
3.5 Rules of differentiation
3.6 Applications of the derivative
3.7 Concept of maxima and minima with managerial applications

4. MATRIX ALGEBRA

4.1 Introduction
4.2 Matrices: definition and notations
4.3 Some special matrices
4.4 Matrix representation of data
4.5 Operations on matrices
4.6 Determininant of a square matrix
4.7 Inverse of a matrix
4.8 Solution of linear simultaneous equations
4.9 Applications of matrices

5. COLLECTION OF DATA

5.1 Introduction
5.2 Primary and secondary data
5.3 Methods of collecting primary data
5.4 Desigining a questionnaire
5.5 Pre-testing the questionnaire
5.6 Editing primary data
5.7 Sources of secondary data
5.8 Precautions in the use of secondary data
5.9 Census and sample

6. PRESENTATION OF DATA

6.1 Introduction
6.2 Classification of data
6.3 Objectives of classification
6.4 Types of classification
6.5 Construction of a discrete frequency distribution
6.6 Construction of a continuous frequency distribution
6.7 Guielines for choosing the classes
6.8 Cumulative and relative frequencies
6.9 Charting of data

7. MEASURES OF CENTRAL TENDENCY

7.1 Introduction
7.2 Significance of measures of central tendency
7.3 Properties of a good measure of central tendency
7.4 Arithmetic mean
7.5 Mathematical properties of arithmetic mean
7.6 Weighted arithmetic mean
7.7 Median
7.8 Mathematical property of median

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