



**ASSIGNMENT 1ST SEMESTER : STATISTICAL ANALYSIS (STAT)
BUSINESS STATISTICS 1
(BS101)**

CHAPTERS COVERED : CHAPTERS 1 - 8

DUE DATE : 3:00 p.m. 20 MARCH 2012

TOTAL MARKS : 100

INSTRUCTIONS TO CANDIDATES FOR COMPLETING AND SUBMITTING ASSIGNMENTS

The complete 'Instructions to Students for Completing and Submitting Assignments' must be collected from any IMM GSM office, the relevant Student Support Centre or can be downloaded from the IMM GSM website. It is essential that the complete instructions be studied prior to commencing your assignment. The following points highlight only a few important notes.

1. You are required to submit ONE assignment per subject.
2. The assignment will contribute 20% towards the final examination mark, and the other 80% will be contributed by the examination, however the examination papers will count out of 100%.
3. Although your assignment will contribute towards your final examination mark, you do not have to earn credits for admission to the examinations; you are automatically accepted on registering for the exam.
4. Number all the pages of your assignment (e.g. page 1 of 4) and write your name and surname, student number and subject at the top of **each** page.
5. The IMM GSM requires assignments to be presented on plain A4 paper. You must show all working calculations, including and where appropriate multiple choice working calculations.
6. A separate assignment cover, which is provided by the IMM GSM, must be attached to the front cover of each assignment.
7. Retain a copy of each assignment before submitting, in case the original does not reach the IMM GSM.
8. The assignment due date refers to the day up to which assignments will be accepted for marking purposes. The deadline is 3:00 p.m. on 20 March 2012. Late assignments will be accepted, but **25 marks** will be deducted from the maximum mark, if received after 3:00 p.m. on 20 March 2012 and up to 5:00 p.m. the following day, after which no assignments will be accepted.
9. If you fail to follow these instructions carefully, the IMM Graduate School of Marketing cannot accept responsibility for the return of the assignment. It may even result in your assignment not being marked.

Results will be available on the IMM GSM website, www.immgsm.ac.za, on Friday, 4 May 2012.

SPECIFIC INSTRUCTIONS:

- Answer **ALL** the questions.
- Read each question carefully to determine exactly what is required before attempting the question.
- Where applicable, formulae and computations must be shown, failing which, marks will not be awarded.
- Answers must be set out in a systematic way under appropriate headings and sub-headings.
- Number your answers clearly.
- Graph paper is not required but graphs must be neat and according to scale.
- Show all calculations correct to 2 decimal places.
- **Note:** Presentation marks will **NOT** be awarded.

QUESTION 1 [10]

The monthly rentals (in rands) per square metre for office space in 110 buildings in Cape Town are given in the table below:

Office rentals (rands)	Number of buildings (f)
151 – 200	6
201 – 250	17
251 – 300	22
301 – 350	32
351 – 400	18
401 – 450	10
451 – 500	5

- 1.1 Construct a cumulative less than frequency distribution for this data set in which the class boundaries must be shown. (5)
- 1.2 Calculate the value of the median. (5)

QUESTION 2 [10]

The human resource department of a company recorded the number of days absent of 20 employees over the last year.

5	17	10	4	15	30	6
6	14	14	17	10	2	5
5	10	9	20	18	13	

- 2.1 Calculate the mean number of days absent over the 12-month period. **(3)**
- 2.2 Calculate the first quartile. Interpret your answer. **(3)**
- 2.3 Calculate the standard deviation of the number of days absent. **(4)**

QUESTION 3 [10]

You and your family are on a 15 day visit to the Kruger National Park. Below is the number of giraffes you have spotted each day.

12	7	0	6	15	12	10	9
9	30	18	10	15	8	15	

Determine the five number summary for the data.

QUESTION 4 [10]

It is known that 60% of all the students at a large university are female. A random sample of 8 students is selected. Calculate the probability that among the students in the sample

- 4.1 at least 7 are female. **(5)**
- 4.2 at most 1 is female. **(5)**

QUESTION 5 [10]

A number of tubes of toothpaste purchased by a typical family is a random variable having a Poisson distribution with an average of 1,8 tubes per month. What is the probability that a typical family will purchase

- 5.1 at least 3 tubes of toothpaste in any given month? **(6)**
- 5.2 less than 2 tubes of toothpaste in any given month? **(4)**

ASSIGNMENT TOTAL: 50 x 2 = 100