

Tutorial letter 101/0/2018

Introduction to Statistics

XTA 1610

Year Module

Department of Statistics

IMPORTANT INFORMATION:

This tutorial letter contains important information
about your module.

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1 INTRODUCTION

Dear Student

I am pleased to welcome you to the module XTA1610. Please read this tutorial letter in detail as it contains vital information.

This tutorial letter contains important information about the assignments, the assessment criteria as well as instructions on the preparation and submission of the assignments. I urge you to read it carefully and to keep it at hand when working through the study material, preparing the assignments, preparing for the examination and addressing questions to your lecturer or tutors. More general and detailed information and an orientation to your studies at Unisa is contained in the study@myUnisa brochure which is included in your study package.

Please note that this is a special module in that it is supported through EXTENDED SCIENCE PATHWAY (ESP). The programme provides additional learning support in different forms, which is designed to make your studies easier and to help you succeed. Detailed information on the ESP support is contained in the ESPALLR Tutorial Letter 301. The additional support is largely in the form of tutorials, and is offered to you free of charge. It is very important that you take advantage of the support to ensure your own success. The main course material for this module is presented in the form of a study guide and a workbook, which are supported by a prescribed book, and some recommended books. Other study materials include Tutorial Letter 102, which contains the Tutorial Resource for the module. Tutorial Letter 201 contains feedback to assignments 1 to 4, while Tutorial Letter 202 contains feedback to assignments 5-8. Tutorial letter 203 contains the examination guidelines to help you to prepare for the examination. Lastly, Tutorial Letter 301 contains general but important information on foundation support interventions in modules. Some of this study material may not have been available to you when you registered. Study material that was not available when you registered will be posted to you as soon as possible, and will also be available on myUnisa.

Both the study guide and the tutorial resource are divided into study or tutorial units in which there are different learning or self-assessment activities, which you should complete at specific periods during the year. Please take time to complete the activities in these study materials. The activities have been designed to help you to understand the difficult concepts, and to supplement the theoretical knowledge with practical experience. Remember that I and your tutor are always available to assist you with your studies, but the responsibility to contact us if you experience any difficulties lies with you. Please feel free to contact me during office hours. You will find my contact details in Section 3 of this Tutorial letter. During the year, I will be communicating with you by means of sms and through myUnisa.

You are strongly advised to spend as much time as you can on learning sites on the internet to which you may refered to, and to myUnisa. On myUnisa, besides the mentoring by a tutor, you have a variety of opportunities to interact with other students to enrich your learning experience. To register on myUnisa, log onto the Unisa website www.unisa.ac.za and follow the relevant links.

On myUnisa, you will see two sites, my main teaching site with the code XTA1610-18-Y1, and the tutoring site with the code XTA1610-18-Y1-[Group number]S. The site XTA1610-18-Y1 is hosted by your e-tutor and contains the tutorials and online assignments. The site XTA1610-18-Y1 contains the main study materials for the module. It is also the site from which I will communicate to you about various learning activities during the year, and from which I control the learning activities, including your tutorials.

I hope that you will enjoy this module and wish you all the best!

2 PURPOSE OF AND OUTCOMES FOR THE MODULE

2.1 Purpose

Students credited with this unit standard will be familiar with the most important basic statistical concepts. After completion, students should have an informed understanding of different visual descriptions of data, including graphical and tabular techniques; and measures of central location, dispersion and association. They should be able to use probability as a tool to create discrete and continuous probability distributions, used extensively in statistical inference; determine confidence intervals and perform hypothesis testing involving a sample mean and proportion; apply different forms of Chi-square testing; understand simple linear regression and correlation.

2.2 Outcomes

Qualifying students will be able to:

- Analyse data considering different types of data and how they relate to relevant graphical and tabular presentations e.g. pie charts, bar charts, histograms, stem-and-leaf displays, line charts and scatter diagrams.
- Analyse data by calculating accurate numerical measures of central location, variability, relative standing.
- Describe the different concepts and laws of probability and apply definitions of joint, marginal and conditional probability.
- Apply the complement, multiplication and addition rules.
- Understand the role of probability in decision-making and the application in basic statistical inference.
- Describe random variables and the probabilities associated with them in the form of a table, formula or graph and also in terms of their parameters, usually the expected value and the variance.
- Describe different probability distributions as either discrete or continuous and know the parameters of expected value and variance.

3 LECTURER(S) AND CONTACT DETAILS

3.1 Lecturer(s)

Mr. Jean–Claude MALELA MAJIKA
GJ Gerwel (C-Block), Room 6-30
UNISA (Florida Campus)
Cnr.Christiaan De Wet & Pioneer Avenue
E–mail: malelm@unisa.ac.za
Tel: 011 670 9243

3.2 Department

If you have any problem in contacting your lecturer you may contact the secretary on (011) 670-9255 and leave a message for the relevant lecturer.

Should you prefer to write to me, the letter should be sent to:

The XTA1610 Lecturer
Department of Statistics
UNISA (Florida Campus)
Private Bag X6
Florida
1710

Alternatively, you can e-mail the Extended Science Pathway on espall@unisa.ac.za.

3.3 University

You will find general Unisa contact details in the study@myUnisa brochure. Please always provide your student number when contacting the University.

4 MODULE-RELATED RESOURCES

4.1 Prescribed books

The prescribed book for this module is

ANDERSON, SWEENEY, WILLIAMS, FREEMAN, SHOEMITH (2017, 4TH edition)
STATISTICS FOR BUSINESS AND ECONOMICS, CENGAGE Learning 9781473726567

You have to buy this book. Prescribed books can be obtained from the University's official booksellers. If you have difficulty locating your book(s) at these booksellers, please contact the Prescribed Books Section at 012 429 4152 or e-mail vospresc@unisa.ac.za

For shorter reference, we use **Anderson** in the rest of this tutorial letter when we need to refer the prescribed book.

4.2 Recommended books

There are no recommended books for this module.

4.3 Electronic Reserves (e-Reserves)

There are no e-Reserves for this module.

4.4 Library services and resources information

For brief information go to: <http://www.unisa.ac.za/contents/studies/docs/myStudies-at-Unisa2018-brochure.pdf>

For more detailed information, go to the Unisa website: <http://www.unisa.ac.za/>, click on Library

For research support and services of Personal Librarians, go to:
<http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=7102>

The Library has compiled numerous library guides:

- find recommended reading in the print collection and e-reserves - <http://libguides.unisa.ac.za/request/undergrad>
- request material - <http://libguides.unisa.ac.za/request/request>
- postgraduate information services - <http://libguides.unisa.ac.za/request/postgrad>
- finding , obtaining and using library resources and tools to assist in doing research http://libguides.unisa.ac.za/Research_Skills
- how to contact the Library/find us on social media/frequently asked questions - <http://libguides.unisa.ac.za/ask>

5 STUDENT SUPPORT SERVICES FOR THE MODULE

Extended Science Pathway

Extended Science provides additional learning support so that you have a better chance of passing the module. Your learning is supported through special tutorials, which are designed to ensure that you master the basic concepts in the module first, and to help you through the concepts that are known to be typically difficult for students. The tutorials are also designed to help you to develop your reading, writing and study skills, and to understand your curriculum in relation to your career choices. To achieve these goals, the tutorials provide ample time for you to constantly interact with a tutor and with your fellow students to clarify difficult questions and concepts.

The tutorials are important because your formative assessment is built in the tutoring, whereby tutors mark your assignments, give you self-assessment tasks to do, and provide you with feedback on the learning activities. Tutors are also tasked to prepare you for the final examination. You have the choice of attending face-face tutorials at a learning centre, and or online on myUnisa. Upon registration, an E-tutor is automatically allocated to you. For face-face tutorials, you have to register at the learning center nearest to you. The tutorials are contained in **Tutorial Letter 102, the Tutorial Resource for the Module XTA1610**. You will receive the printed version of the tutorial resource before the tutorials start. By that time, you will also be able to access the electronic tutorial resource among the official study materials on the module site, and the online version on the tutorial site, on myUnisa.

You are strongly advised to prepare for the tutorials by reading through the tutorial resource before you start your tutorials. It is important to understand the rules and your responsibilities with regard to the tutorials and to your assessment. Remember, the tutorial resource does not replace your study guide, but complements it with more basic content and interactive learning activities that target the difficult concepts. The tutorial resource must be used with reference to the study guide and prescribed book, which are your main learning resources.

As a word of caution, please note that in distance learning, the fact that students are enrolled in self-study is frequently the reason for failure. This is because in the distance education environment, minimal yet vital interaction takes place among students, and between students and mentors such as tutors and lecturers. It is therefore your responsibility to take full advantage of the tutorials by sparing as much time as you can for tutorials, and by aggressively engaging with the tutor and with other students, to deepen your own understanding, which will enrich your learning experience.

Details on other student support are contained in Tutorial Letter 301 and in the study@myUnisa brochure.

5.1 Free computer and internet access

Unisa has entered into partnerships with establishments (referred to as Telecentres) in various locations across South Africa to enable you (as a Unisa student) free access to computers and the Internet. This access enables you to conduct the following academic related activities: registration; online submission of assignments; engaging in e-tutoring activities and signature courses; etc. Please note that any other activity outside of these are for your own costing e.g. printing, photocopying, etc. For more information on the Telecentre nearest to you, please visit www.unisa.ac.za/telecentres.

6 MODULE-SPECIFIC STUDY PLAN

Your study plan for the module is outlined below. Please refer to the general time management and planning skills guidelines in the study@myUnisa brochure.

The study plan below shows the content to be covered during specific periods of the year in terms of the broad concepts or topics, the study guide units and the prescribed book chapters. Your studies will be largely guided by the tutorial discussions and learning activities, and the assignments, which are all based on the same study plan. You should therefore participate as much as possible in the tutorial discussions and complete assignments and the learning or self-assessment activities linked to each topic in order to do well in the assignments, and for you to be well prepared for the final examination.

Topic	Study Guide Unit	Prescribed Book Chapter, Section	Supporting Resources and activities [e.g. CD/CD-ROM, discussion classes, practicals]	Dates during which the topic/content is covered
Measures, Data and Variables	Study Unit 1	Chapter 1: 1.1-1.3	Discussion classes	26 February 2018
Presenting Data in Tables and Charts	Study Unit 2	Chapter 2: 2.1-2.5	Discussion classes	18 March 2018
Numerical descriptive measures	Study Unit 3	Chapter 3: 3.1-3.3	Discussion classes	31 March 2018
Basic probability	Study Unit 4	Chapter 4: 4.1-4.4	Discussion classes	20 April 2018
Discrete probability distribution	Study Unit 5	Chapter 5: 5.1-5.4	Discussion classes	27 April 2018
Continuous probability distribution	Study Unit 6	Chapter 6: 6.1-6.3	Discussion classes	23 May 2018
Sampling and sampling distribution	Study Unit 7	Chapter 7: 7.1; 7.2; 7.4; 7.5	Discussion classes	13 June 2018
Confidence interval estimation	Study Unit 8	Chapter 8: 8.1-8.3	Discussion classes	4 July 2018
Hypothesis Testing: One-sample tests	Study Unit 9	Chapter 9: 9.1-9.4	Discussion classes	20 July 2018
Chi-square tests	Study Unit 10	Chapter 11: 11.1-11.3	Discussion classes	27 July 2018
Simple linear regression	Study Unit 11	Chapter 12: 12.1-12.3	Discussion classes	22 August 2018

Please note that the module XTA1610 shares the same study guide and the final examination with the module STA1610.

7 MODULE PRACTICAL WORK AND WORK-INTEGRATED LEARNING

There are no practicals for this module.

8 ASSESSMENT

8.1 Assessment criteria

The outcomes of this module are given in Section 2.2 of this tutorial letter. These outcomes describe what you should be able to do in order to successfully pass this module. Assignments, examinations, and in some modules projects and portfolios are the ways we use to assess whether you have reached the outcomes.

The criteria we use to assess your work can be summarised as follows:

- You must apply the correct and appropriate formulas, presentations, methods, rules, laws, values from tables, and so on, as required in the question.
- Applying of formulas, methods etc. must be done correctly.
- Results, tests, computer printouts etc. should be interpreted correctly, when you are asked to do so.
- Calculations must be correct and accurate.

The following general comments are valid to all our modules. In some cases the lecturers will give further instructions to keep in mind when completing your work; these will be given in the tutorial letters for that particular module.

8.1.1 Written assignment and examination questions

Please keep the following in mind when answering questions.

- Read the question carefully – you will get zero marks if you end up answering what was not asked for!
- Give full calculations, marks will usually not be given for the end results only.
- Present your solutions clearly. A collection of disjointed formulas and numbers is not the right way to answer questions, please use words to explain what you are doing and why. Use correct mathematical notation and remember that lines of mathematical equations must always be linked to each other – for example with the = sign if they are a series of continuing calculations, or otherwise maybe by the signs for “equals” or “therefore”. See your textbooks and/or study guides for examples.

We strongly recommend that you submit your written assignments through myUnisa, since then the turnaround time for your assignment to get back to you will be shorter, and your assignment can never get lost. For most of the statistics modules we only accept file submissions in the PDF format. You can scan your hand-written assignment into a PDF file; or alternatively you can use a word processing program with an equation editor (e.g. MSWord) or you can use special mathematical typesetting programs such as LaTeX, and at the end convert your assignment to PDF. Please note that for typed assignments, you must still use all the correct mathematical notations, and include all necessary graphs, diagrams, and so on, just as if you were submitting a hand-written assignment!

8.1.2 Multiple choice questions

- Only one of the given answers is correct. If you believe several to be correct, check your work again!
- We suggest you keep copies of your calculations, so that when you get the results, you can check where you went wrong.

8.2 Assessment plan

Please note that this module has a total of **NINE compulsory assignments** which contribute **49% to the final mark**.

Eight of the compulsory assignments are relatively short assessments. The ninth assignment which is submitted at the end of September is a journal in which you will describe your tutorial experiences according to the template in addendum. Assignments can be submitted by post or electronically by mobile (multiple choice questions) or via myUnisa.

The compulsory assignments are in different formats and contribute to the year mark as follows:

Assignment Number	Type of assignment (multiple choice, True or false, short written questions, written essay, template)	Contribution to the final mark (%)
01	Multiple choice	5
02	Multiple choice	5
03	Multiple choice	5
04	Multiple choice	5
05	Multiple choice	5
06	Multiple choice	5
07	Multiple choice	5
08	Multiple choice	5
09	Written question	9
Total	9	49

The year mark and the examination mark will be divided as follows:

Type of assessment	Contribution to the final mark
Formative	49
Summative	51
Final	100

Please note that the 49% contribution by the assignments makes it extremely important that you do all the assignments and score high marks, otherwise it is impossible for you to pass the module. However, this also means that if you do all the assignments well, there is less risk of you failing the module.

The final examination is written in 2-hours at a venue of your choice, according to the examination calendar, which you can access on the Unisa website. Please note the following important details about the final examination;

- You will not be admitted to the examination without submitting an assignment 1 by 29 March 2018, I therefore strongly advise you to ensure that the first assignment is in on time for you to immediately gain exam admission.
- If you score less than 40% in the final examination, the year mark will not be used to give you a pass.
- The minimum examination score which is required to qualify for a supplementary examination will be 40%. The supplementary examination will be written early in 2019, we will confirm the date and venues on the Unisa website.
- There is no other exam opportunity other than the supplementary examination but a new enrolment for repeat learning in the module.

8.3 General assignment numbers

Each of your assignments has a general identification number which is assigned consecutively starting from 01 to 09.

8.3.1 Unique assignment numbers

Please note that each assignment has its unique six-digit assignment number which has to be written on the cover of your assignment upon submission.

Assignment number	Chapter in Levine	Unique Number
01	Chapters 1 and 2	692813
02	Chapter 3	845830
03	Chapters 4 and 5	785259
04	Chapter 6	841818
05	Chapters 7 and 8	766352
06	Chapter 9	752252
07	Chapter 11	870661
08	Chapter 12	787178
09	Journal	772002

8.3.2 Due dates for assignments

The assignments are spaced evenly over the year, approximately three weeks apart during the period between March and September as follows:

Assignment number	Chapter in Levine
01	29 March 2018
02	20 April 2018
03	04 May 2018
04	01 June 2018
05	22 June 2018
06	13 July 2018
07	03 August 2018
08	31 August 2018
09	28 September 2018

8.4 Submission of assignments

For detailed information on assignments, please refer to the study@myUnisa brochure, which you received with your study package.

To submit an assignment via myUnisa:

- Go to myUnisa.
- Log in with your student number and password.
- Select the module.
- Click on assignments in the menu on the left-hand side of the screen.
- Click on the assignment number you wish to submit.
- Follow the instructions.

For general information and requirements as far as assignments are concerned, see the study@myUnisa brochure which you received with your study material.

8.5 Assignments

8.5.1 Assignment 01

ASSIGNMENT 01

Chapters 1, 2 and 3

Unique Nr.: 692813

Fixed closing date: 29 MARCH 2018

QUESTION 1

Which one of the following statements is correct?

1. Gender, marital status and religion are examples of qualitative ordinal variables
2. The amount of money a person spends in a shopping mall is a discrete variable
3. The number of girls with blue eyes is a discrete variable
4. The position one finishes in a race is a discrete variable.
5. The number of times a mouse makes a wrong turn in a laboratory represents a continuous variable

QUESTION 2

Which one of the following statements is incorrect?

1. A variable is a characteristic of an item or individual being measured
2. A sample is a portion of a population selected for analysis
3. In a pie chart, the size of segments varies according to the percentage in each category
4. An histogram describes better qualitative data than a bar chart
5. The mode is the most frequent observation in a data set

QUESTION 3

Consider the following variables:

- A. Your height as either a tall or short person
- B. Your status as either a full time or a part time student
- C. A condition, either poor, fair, good or excellent
- D. A size of a ring as small, medium or big
- E. A size of a TV screen in inches

Which one of the above variables is/are quantitative variable(s)?

1. Only D
2. D and E
3. Only E
4. A, B and C
5. None of the above

QUESTION 4

In the following stem-and-leaf display for a set of two-digit integers,

1	1	3	7	
2	2	4	8	8
3	2	3		
4	8			

the mode(s) is/are:

1. 8
2. 2
3. 48
4. 28
5. 22 and 28

QUESTION 5

Referring to the data in question 4, the median(s) is/are:

1. 24 and 28
2. 5.5
3. 25.6
4. 28
5. 26

QUESTION 6

Consider the following statistical measures

- A. The mode
- B. The range
- C. The mean
- D. The median
- E. The variance

Which of the above statistical measures is/are measure(s) of spread or variation?

- 1. Only E
- 2. B and E
- 3. Only A
- 4. A, C and D
- 5. None of the above

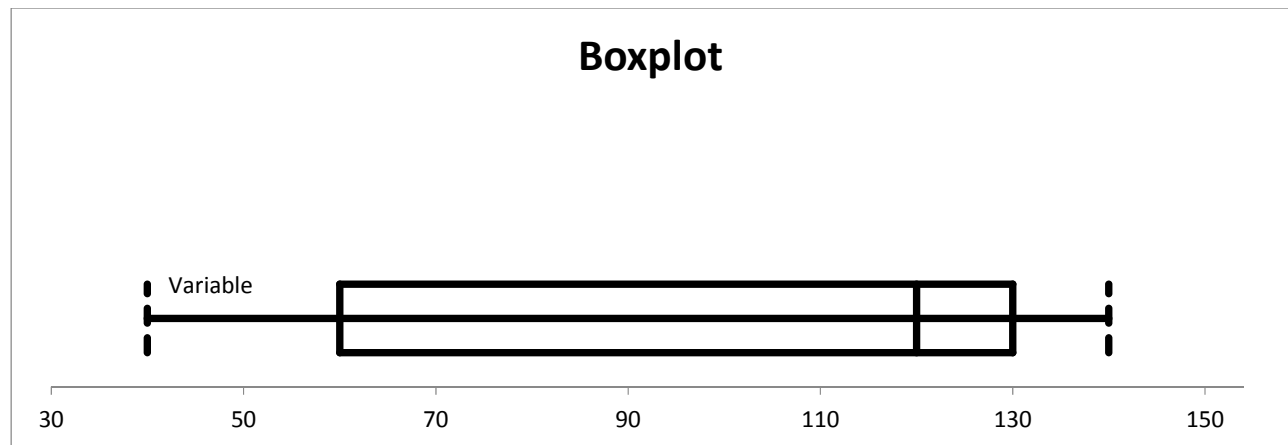
QUESTION 7

Consider the stem-and-leaf display given in question 4 above, the sample mean and variance of the data set are respectively:

- 1. 25.6 and 107.04
- 2. 25.6 and 10.906
- 3. 25.6 and 10.346
- 4. 25.6 and 118.933
- 5. 10.906 and 118.933

QUESTION 8

The box-and-whisker plot (or Box-plot) of the sample of ages of 23 dinosaurs is given below:



Which one of the following statements is incorrect?

1. The interquartile range (IQR) is 70
2. The upper quartile is 130
3. The median is 120
4. The distribution of ages is skewed to the right
5. The distribution of ages is skewed to the left

QUESTION 9

Consider the following scores:

15 5 3 2 13 2 0 17 -17 9 -8 11

Which one of the following statements is correct?

1. The interquartile range (IQR) is 13
2. The range is 0
3. The sample mean is 8.5
4. The standard deviation is 95.879
5. The median is 5

QUESTION 10

The following table gives the frequency distribution of the salaries (in thousands of rands) in a sample selected from a small company.

Class (in R1000)	Frequency (f)	% Frequency (%f)	Cumulative Frequency (F)
5<10	4		
10<15			7
15<20		24	
20<25	10		
25<30			25
Total		100	

After completing the above table, which one of the following statements is incorrect?

1. Eight percent of the staff members earn between 25 and 30 thousand rands
2. Seven staff members earn more than R15000
3. The sample has twenty-five staff members
4. Twenty four percent of the staff members earn at least R15000
5. The modal class is given by 20<25

8.5.2 Assignment 02

ASSIGNMENT 02 Chapter 4 Unique Nr.: 845830 Fixed closing date: 20 APRIL 2018
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QUESTION 1

Students were surveyed on a question regarding the means of transport used to get to school. The following table gives the summary of the survey results:

	BUS (B)	TRAIN (T)	OWN CAR (O)	TOTAL
MALE (M)	30	24	41	
FEMALE (F)	20	26	59	
TOTAL				

Which one of the following statements is incorrect?

1. $P(F \text{ and } B) = 0.1$
2. Twenty-five percent of students use buses to get to school
3. Events M and F are mutually exclusive
4. $P(F \text{ or } O) = 0.73$
5. If a student is randomly selected, the probability that the student is a male given that he uses a train is equal to 0.1

QUESTION 2

If $P(A) = 0.4$, $P(B') = 0.3$ and $P(A \text{ and } B) = 0.2$.

Which one of the following statements is incorrect?

1. $P(A' \text{ and } B') = 0.2$
2. $P(B \text{ and } A') = 0.5$
3. $P(B) = 0.7$
4. $P(A|B) = 0.2857$
5. $P(A \text{ or } B') = 0.5$

QUESTION 3

Assume that event A and B are mutually exclusive with $P(A) = 0.3$ and $P(B') = 0.5$.

Which one of the following statements is incorrect?

1. $P(A' \text{ and } B') = 0$
2. $P(A \text{ and } B) = 0$
3. $P(A \text{ or } B) = 0.8$
4. $P(B|A) = 0$
5. $P(A \text{ and } B') = 0.3$

QUESTION 4

Assume that events A and B are independent with $P(A) = 0.3$ and $P(B') = 0.5$.

Which one of the following statements is incorrect?

1. $P(A' \text{ and } B') = 0.35$
2. $P(A \text{ and } B) = 0.15$
3. $P(A' \text{ or } B) = 0.8$
4. $P(A \text{ or } B') = 0.65$
5. $P(A|B) = 0.3$

QUESTION 5

If $P(A) = 0.4$, $P(B) = 0.3$, $P(C) = 0.5$, $P(A \text{ and } B) = 0.12$ and $P(B \text{ and } C) = 0$. Then,

- A. B and C are independent
- B. A and B are mutually exclusive
- C. A and c are impossible events
- D. A and B are dependent
- E. A and B are independent

Which one of the above statements is/are correct?

1. Only C
2. A and C
3. A and B
4. A, C and E
5. Only E

QUESTION 6

The editor of a textbook publishing company is trying to decide whether to publish a proposed business Statistics textbook. Information on previous textbooks published indicates that 10% are huge successes, 20% are moderate successes, 40% break-even, and 30% are losers. However, before a publishing decision is made, the book will be reviewed. In the past, 99% of the huge successes received favourable reviews, 70% of the moderate successes received favourable reviews, 40% of the break-even books received favourable reviews, and 20% of the losers received favourable reviews. The proportion of textbooks that received favourable reviews is

1. 50%
2. 46%
3. 54%
4. 0.099
5. 0.14

QUESTION 7

Which one of the following statements is incorrect?

1. If A is an impossible event, $P(A) = 0$
2. If A and B are independent $P(A \text{ or } B) = P(A) + P(B)$
3. If A and B dependent, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$
4. If A and B are mutually exclusive, $P(A | B) = 0$ when $P(B) \neq 0$
5. If $A \cup B = S$, where S is the sample space, $P(B) = 1 - P(A)$ when A and B are mutually exclusive

QUESTION 8

At a large bank, 6% of the employees are computer programmers, 40% of the employees are women and 2% of the employees are female computer programmers. An employee is selected at random, what is the probability that the employee will be a man and not a computer programmer?

1. 0.44
2. 0.04
3. 0.56
4. 0.6
5. 0.94

QUESTION 9

If $P(A) = 0.3$, $P(B) = 0.5$ and $P(A \text{ and } B) = 0.2$.

Calculate the probability of the complement of A and B, i.e. $P(\overline{A \text{ and } B})$.

1. 0.2
2. 0.4
3. 0.9
4. 0.5
5. 0.8

QUESTION 10

According to a survey of South African households, the probability that the residents own two cars if annual household income is over R50000 is 80%. Of the households surveyed, 60% had incomes over R50000 and 70% had two cars. The probability that the residents of a household own two cars and does not have an income over R50000 is

1. 0.12
2. 0.18
3. 0.48
4. 0.22
5. 0.30

8.5.3 Assignment 03**ASSIGNMENT 03****Chapter 5****Unique Nr.: 785259****Fixed closing date: 04 MAY 2018****QUESTION 1**

The following table contains the probability distribution for the number of traffic accidents per day in a small town:

Number of Accidents per day (X)	0	1	2	3	4	5
P(X=x)	0.1	0.2	0.45	0.15	0.05	0.05

The mean number of accident per day is

1. 1
2. 5
3. 0.2
4. 2
5. 3

QUESTION 2

In question 1, the standard deviation of the number of accident per day is

1. 1.4
2. 2.324
3. 1.183
4. 5.4
5. 2

QUESTION 3

Based on past experience, a researcher knows that the probability distribution for X = the number of students who miss class on Fridays is given as follows:

x	0	1	2	3	4	5
P(X=x)	0.3	0.1	0.24	p_3	0.1	0.12

Which one of the following statements is incorrect?

1. $p_3 = 0.14$
2. $P(0 < X < 3) = 0.34$
3. The probability that at least four students will miss class on Friday is 0.88
4. The probability that at most two students will miss class on Friday is 0.64
5. The probability that all students will attend class on Friday is 0.3

QUESTION 4

Which one of the following statements is correct?

1. In a binomial experiment the n trials are not always independent
2. In a binomial experiment the random variable take on values from 1 up to n (i.e. $x = 1, 2, \dots, n$)
3. In a Poisson experiment the random variable will always take on values from 0 up to n (i.e. $x = 0, 1, 2, \dots, n$)
4. The mean and variance of a random variable that follows a Poisson distribution are always equal.
5. If X follows a binomial distribution with probability of success $\pi = 0.4$ and 5 trials, the probability of failure is given by 0.08

QUESTION 5

Suppose that 10% of butterflies have damaged wings. If a random sample of 5 butterflies is selected, what is the probability that none of the butterflies have damaged wings?

1. 0.59049
2. 0.00001
3. 0
4. 0.40951
5. 0.9999

QUESTION 6

Using the binomial distribution, if $n = 5$ and $P(X = 3) = 0.1323$. The probability of success is

1. 0.1
2. 0.2
3. 0.3
4. 0.4
5. 0.5

QUESTION 7

If X follows a binomial distribution with $n = 6$ and $\pi = 0.2$, $P(X < 3)$ is

1. 0.0989
2. 0.9011
3. 0.0819
4. 0.2458
5. 0.6390

QUESTION 8

The number of power outages at a nuclear power plan has a Poisson distribution with a mean of 6 outages per year.

Which one of the following statements is incorrect?

1. The probability that there will be no outage in a given year is 0.00248
2. The probability that there will be at least one outage in a given year is 0.99752
3. The probability that there will be more than one outage in a given year is 0.01735
4. The standard deviation of the number of power outages is 2.45
5. The number of power outages has a mean of 3 outages per semester

QUESTION 9

Let X be a random variable representing the number of mistakes in a textbook. Suppose the mistakes occur at an average of 2 per page. The probability that at most three mistakes are found on a given page is

1. 0.85712
2. 0.18045
3. 0.14288
4. 0.81955
5. 0.67667

QUESTION 10

In question 9, the probability that exactly five mistakes are found on two pages is

1. 0.96391
2. 0.84371
3. 1
4. 0.03609
5. 0.15629

8.5.4 Assignment 04**ASSIGNMENT 04****Chapter 6****Unique Nr.: 841818****Fixed closing date: 01 JUNE 2018****QUESTION 1**

A symmetrical distribution that has a mean of zero and a variance of one is called the

1. Unimodal skewed distribution
2. Binomial distribution
3. Binomial distribution
4. Standard normal distribution
5. Uniform distribution

QUESTION 2

Which one of the following statements is incorrect?

1. A distribution is skewed to the right if: $\text{Mode} < \text{Median} < \text{Mean}$
2. A normal distribution is an unimodal distribution
3. For a standard normal distribution, the area under the normal curve is equal to one
4. For a symmetrical distribution, the variance equal to the standard deviation
5. A sample with a very large variance (or standard deviation) and a very small mean is not a good sample

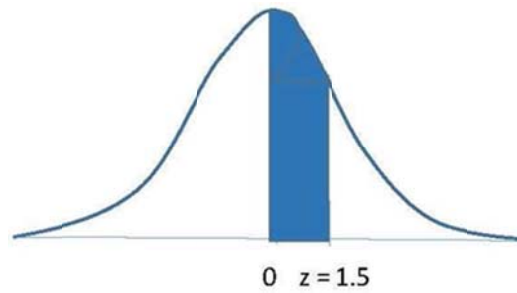
QUESTION 3

For a particular group of scores, the population mean and standard deviation are 25 and 5, respectively. The Z-score for a raw score of 19 is

1. -1.0
2. 1.2
3. -1.2
4. 1.05
5. 0.95

QUESTION 4

Standard normal distribution



The above shaded area is equal to

1. 0.9332
2. 0.4332
3. 0.5000
4. 1.5000
5. 0.0668

QUESTION 5

If the Z-score is given as $Z = -2.12$ and the distribution of X is normally distributed with a population mean of 50 and a population standard deviation of 3, then the x -value corresponding to the given Z-score is

1. 52.12
2. 47.88
3. 56.36
4. 0.0170
5. 43.64

QUESTION 6

A random variable X is normally distributed with a population mean of 60 and a population standard deviation of 10. If $a = 52$ and $b = 66$, which one of the following statement is incorrect?

1. $P(X > a) = 0.7881$
2. $P(X > b) = 0.7257$
3. $P(60 > X) = 0.5000$
4. $P(X = b) = 0.7257$
5. $P(a < X \leq b) = 0.5138$

QUESTION 7

If $P(X < a) = 0.1515$ is the area under a normal curve of random variable X with a mean μ of 30 and variance σ^2 of 16. The value taken by a is equal to

1. 25.88
2. -1.03
3. 1.03
4. 34.12
5. 0.8485

QUESTION 8

For a random variable that is normally distributed with a population mean of 80 and a population standard deviation of 16, the probability that a sample of 49 observations will have a mean below 85 is

1. 0.0143
2. 0.9857
3. 8.7500
4. 1.0000
5. 0.0000

QUESTION 9

A random sample of size $n = 400$ was selected from a binomial population with the population proportion $\pi = 0.2$. The number of observed successes in the sample is 96.

Which one of the following statements is incorrect?

1. The standard error is 0.02
2. The sample proportion is $6/25$
3. $P(p < 0.24) = 0.0228$
4. $P(p = 0.2) = 0.0000$
5. This is an example an binomial random variable that converges towards a normal distribution

QUESTION 10

If a sample of 300 items is draw from a binomial process with $\pi = 0.4$, the Z-score of $p = 0.36$ is equal to:

1. 0.390
2. 0.310
3. 1.414
4. 1.960
5. -1.414

8.5.5 Assignment 05**ASSIGNMENT 05****Chapter 7****Unique Nr.: 766352****Fixed closing date: 22 JUNE 2018****QUESTION 1**

The standard deviation of the sample distribution of the mean is also called

1. Sampling mean
2. Residual
3. Standard error
4. Standard normal
5. Sum of deviations

QUESTION 2

Which one of the following statements is incorrect?

1. The mean of the sampling distribution of the mean equal to the population mean
2. The Z-score of the sampling distribution of the mean is equal to the difference between the sample mean and the population mean divided by the standard error divided by square root of the sample size (n)
3. The standard deviation of the sampling distribution of the mean is equal to the standard deviation of the population divided by the square root of the sample size (n)
4. A sampling error is the error resulting from using a sample characteristic to estimate a population characteristic
5. Regardless of the shape of the distribution, as the sample size gets large enough, the sampling distribution of the mean is approximately normally distributed

QUESTION 3

The diameter of a brand of ping-pong balls is approximately normally distributed, with a mean of 1.31 inches and a standard deviation of 0.08 inch. If a random sample of four ping-pong balls is selected, the mean and standard deviation of the sampling distribution of the mean are respectively:

1. 0.3275 and 0.04
2. 0.655 and 0.04
3. 1.31 and 0.08
4. 1.31 and 0.04
5. 1.31 and 0.02

QUESTION 4

In question 3, the probability that the sample mean is less than 1.28 is

1. 0.2266
2. 0.7734
3. 0.3520
4. 0.6480
5. 0.0668

QUESTION 5

Given a normal distribution with $\mu = 102$ and $\sigma = 25$, if $n = 25$, which one of the following statements is incorrect?

1. The standard error is equal to 5
2. If $\bar{X} = 110$, the Z-score is equal to 1.6
3. The probability that $\bar{X}$ is between 90 and 110 is 0.9370
4. The probability that $\bar{X}$ is above 104.5 is 0.3085
5. The probability that $\bar{X}$ is more than 132 does not exist

QUESTION 6

A random selection of 64 households was selected for a telephone survey. The key question asked was, "Do you or any member of your household own a cellular telephone that you can use to access the internet?" Of the 64 respondents, 32 said yes and 32 said no. the population sample proportion is 0.75.

Which one of the following statements is incorrect?

1. The sample proportion is 0.5
2. The standard error of the proportion is 0.0625
3. The standard error of the proportion is 0.0541
4. The sample proportion is $\frac{1}{2}$
5. The probability that the proportion p is less than 0.65 is 0.0322

QUESTION 7

A simple random sample of size $n = 400$ is draw from a binomial process in which $\pi = 0.4$. The Z-score for the proportion of success $p = 0.36$ is

1. 1.633
2. -1.667
3. 1.667
4. -1.633
5. 2.138

QUESTION 8

A simple random sample of size n is drawn from a binomial process in which $\pi = 0.4$. When $p = 0.38$, the Z-score = -2.5. The size of the sample is

1. 150
2. 1600
3. 900
4. 2000
5. 3750

QUESTION 9

In question 8, the probability that the sample proportion is greater than 0.38 is

1. 0.0062
2. 0.2148
3. 0.7852
4. 0.9938
5. 0.2500

QUESTION 10

A statistician predicts temperatures of the next five days as follows:

Day	1	2	3	4	5
Temperature (in °C)	23	18	17	13	15

The standard error of the mean is

1. 3.768
2. 1.685
3. 2.84
4. 14.2
5. 0.219

8.5.6 Assignment 06**ASSIGNMENT 06****Chapter 8****Unique Nr.: 752252****Fixed closing date: 13 JULY 2018****QUESTION 1**

Determine $P(158 \leq \bar{X} \leq 163)$ if X follows a normal distribution with a population mean of 153 and a population variance of 625 and $n = 64$.

1. 0.0007
2. 0.9993
3. 0.9452
4. 0.0548
5. 0.0541

QUESTION 2

Which one of the following statements is incorrect?

1. For large sample, the sampling distribution for the sample proportion follows a binomial distribution
2. For large samples, when the parameter are known, the normal distribution is used to construct the confidence interval for the population mean
3. When the variance of the population from which a sample was selected is known, the normal distribution is used to construct a confidence interval for the population mean
4. The probability that a confidence interval will not contain the parameter is known as level of significance
5. A sample is considered to be large if $n \geq 30$

QUESTION 3

If a sample is of size 65 and we are required to construct a 90% confidence interval for the population mean, the critical value that will be used in constructing the confidence interval is

1. 1.96
2. 2.575
3. 1.645
4. 0.05
5. 0.95

QUESTION 4

If a sample is of size 600 and we are required to construct a 99% confidence interval for the population proportion, the critical value that will be used in constructing the confidence interval is

1. 1.96
2. 2.575
3. 1.645
4. 0.005
5. 0.995

QUESTION 5

If a sample of size 20 is obtained from a normal population with an unknown variance and we are required to construct a 90% confidence interval for the population mean, the critical value that will be used in constructing the confidence interval is

1. 1.645
2. 1.725
3. 1.729
4. 2.575
5. 0.95

QUESTION 6

A statistics practitioner took a random sample of 50 observations from a population with a standard deviation of 25 and a sample mean of 100. The 95% confidence interval of the population mean is

1. (93.07, 106.93)
2. (100, 6.9296)
3. (9.31, 10.693)
4. (94.18, 105.82)
5. (39.07, 106.29)

QUESTION 7

The human resources director of a large corporation wishes to study absenteeism among clerical workers at the corporation's central office during the previous year. A random sample of 25 clerical workers reveals a mean absenteeism of 9.7 days, with a variance of 16 days. Assuming that the population of absences is normally distributed, the 95% confidence interval for the average number of days of absence for clerical workers last year is

1. (8.13, 11.27)
2. (8.05, 11.35)
3. (3.095, 16.305)
4. (3.428, 15.972)
5. (8.0524, 11.3475)

QUESTION 8

From the information given below, determine the 90% confidence interval of the population mean:

$\bar{X} = 200$, $n = 100$ and $S = 5$.

1. (199.1775, 200.8225)
2. (199.1698, 200.8302)
3. (199.525, 200.475)
4. (199.975, 200.025)
5. (100, 200)

QUESTION 9

According to a recent report by the census bureau, 26% of the single male households own stocks, bonds and mutual funds. Although census bureau estimates are based on very large samples, for convenience, assume that this result is based on a random sample of 1000 single male households.

The 99% confidence interval for the proportion of all single male households that own stocks, bonds and mutual funds is

1. (0.2408, 0.2792)
2. (0.250, 0.305)
3. (0.2243, 0.2957)
4. (0.2277, 0.2923)
5. (0.2314, 0.2886)

QUESTION 10

A manufacturer of dog food is concerned about the low levels of sales recorded of one of its tinned products and wants to consider removing this product from its line. Before doing so, a limited scale market surveyed of 1000 customers that buy this particular brand of dog food is conducted. Of the people surveyed, 230 said that they would like the manufacturer to keep the product under investigation as one of the products in the manufacturer's line. Use this information to construct the 95% confidence interval for the percentage of all customers of this manufacturing brand that would like the manufacturer to keep the product under investigation as one of the products in the manufacturer's line.

1. (0.25, 0.415)
2. (0.214, 0.264)
3. (0.204, 0.256)
4. (0.224, 0.296)
5. (0.208, 0.252)

8.5.7 Assignment 07**ASSIGNMENT 07****Chapters 9 and 11****Unique Nr.: 870661****Fixed closing date: 03 AUGUST 2018****QUESTION 1**

Which one of the following statements is incorrect?

1. If the statement of the alternative hypothesis (H_1) involves the “**unequal**” sign ($\neq$), the test is called two-tailed or non-directional test.
2. If the statement of the alternative hypothesis (H_1) involves the sign “**less than**” (i.e. $<$), the test is called lower tailed or left tailed test.
3. If the statement of the alternative hypothesis (H_1) involves the sign “**less than**” (i.e. $>$), the test is called upper tailed or right tailed test.
4. If the statement of the alternative hypothesis (H_1) involves the sign “**fewer or equal to**”, a lower tailed test must be used.
5. If the statement of the alternative hypothesis (H_1) involves the sign “**more or equal to**”, a left tailed test must be used.

QUESTION 2

State the null and alternative hypothesis that would be used to test the following statements:

The average time for the delivery of shipments of computers is no more than 40 days.

1. $H_0: \mu = 40$ vs $H_1: \mu > 40$
2. $H_0: \mu = 40$ vs $H_1: \mu \neq 40$
3. $H_0: \pi = 0.40$ vs $H_1: \pi < 0.40$
4. $H_0: \pi = 0.40$ vs $H_1: \pi > 0.40$
5. $H_0: \mu = 40$ vs $H_1: \mu < 40$

QUESTION 3

Given the following information

The mean starting salary of 144 university graduates is R9980. The population standard deviation of the starting salary is 156. If we want to check whether the mean salary of university graduates is R10000 at 5% level of significance, which one of the following statements is incorrect?

1. A two-tailed test must be used
2. A directional test must be used
3. The standard error is 13
4. The test statistic is – 1.54
5. The critical value is 1.96

QUESTION 4

Calculate the p-value of the test of the following hypothesis given that the sample proportion $p = 0.63$, $n = 100$ and the calculated test statistic $z = 0.05$.

The null hypothesis and alternative hypothesis are: $H_0: \pi = 0.60$ vs $H_1: \pi > 0.60$

1. 0.4801
2. 0.5000
3. 0.5199
4. 0.6915
5. 0.7088

QUESTION 5

Suppose we want to test the hypothesis, at a 1% level of significance, that the climate has changed since industrialization. The mean temperature throughout history is 25°C, but during the last 36 years, the mean temperature has been 26°C with a standard deviation of 3°C. The p-value is equal to

1. 2
2. 0.9772
3. 0.0228
4. 0.0456
5. 0.9544

QUESTION 6

For testing $H_0: \pi = 1/4$ against $H_1: \pi < 1/4$, it is given that $p = 3/11$ and $n = 400$, calculate the test statistic.

1. 1.17
2. 1.05
3. 1.96
4. 1.24
5. -1.17

QUESTION 7

A manufacturer claims that at least 95% of the equipment that he supplied to a factory conformed to specifications. An examination of 700 pieces of equipment reveals that 53 are faulty. Do these results provide sufficient evidence to reject the manufacturer's claim? If we use $\alpha = 0.01$ to perform the test, which one of the following statements is correct?

1. The sample proportion is 0.0757
2. $Z = -103.016$
3. $\alpha = 5\%$
4. $Z = 3.11$
5. There is sufficient evidence to reject the manufacturer's claim, because less than 95% of the equipment he supplied conformed to specifications

QUESTION 8

A manufacturer uses a machine that needs a particular replacement that has an average life span of 100 h (hours). A designer has developed a new machine part that is said to have a longer average life span than the present one. The manufacturer tests nine of these parts in his machines and notes the time to replacement of each part. The times (in hours) are given as:

100.6; 101.3; 98.1; 102.4; 101.7; 106.1; 97.5; 103.3 and 99.9

Assume that the life span of the population of new parts has a normal distribution. In order to check the designer's claim, we use $\alpha = 0.01$ to perform the test.

Which one of the following statements is incorrect?

1. $H_0: \mu = 100$ vs $H_1: \mu > 100$
2. The test statistic is 1.38
3. The critical value is 2.33
4. The critical value is 2.896
5. H_0 will not be rejected

QUESTION 9

You want to test the null hypothesis $H_0: \mu = 75$ against the alternative hypothesis $\mu < 75$ at a 1% level of significance for a sample of size $n = 56$.

1. -2.33
2. 1.96
3. 2.396
4. -2.396
5. 2.33

QUESTION 10

If a contingency table has 4 rows and 5 columns, how many degree of freedom are there for the chi-square (χ^2) test for independence?

1. 20
2. 12
3. 15
4. 9
5. 10

8.5.8 Assignment 08

ASSIGNMENT 08			
Chapters 11 and 12			
Unique Nr.: 787178			
Fixed closing date: 31 AUGUST 2018			

QUESTION 1

Use the following contingency table to test the independence for the two variables given in columns and in rows at 5% level of significance.

	A	B	Total
YES	40	25	65
NO	35	45	80
Total	75	70	145

Which one of the following statements is incorrect?

1. The null hypothesis H_0 is: the variables are independent
2. The alternative hypothesis is: the two variables are dependent
3. The critical value is 3.841
4. The expected frequency for YES and B is 25
5. Suppose that the calculated test statistic $\chi^2 = 4.5455$, the null hypothesis H_0 is rejected at 5% level of significance

QUESTION 2

Four separate machines mould the same plastic parts that are used in cell phones. A random sample of 400 such parts is obtained and each part is identified according to its machine and whether it is acceptable or defective. The results are given below:

	Machine			
	A	B	C	D
Defective	9	7	10	16
Acceptable	111	103	105	39

Testing at 5% level of significance the claim that whether a part is acceptable or defective is independent of the machine, the test statistics is:

1. 19.778
2. 23.78
3. 28.78
4. 400
5. 7.82

QUESTION 3

In question 2, the critical value is

1. 9.49
2. 5.99
3. 9.35
4. 11.14
5. 7.82

QUESTION 4

The table below gives data on the number of ear piercings and tattoos for a sample of 678 female students. Test at a 5% level of significance that whether a female student has a tattoo or not is independent of the number of ear piercings.

Piercings	No tattoo	Have tattoo
Two or less	245	19
Three or four	210	26
Five or six	91	32
Seven or more	25	30

The test statistic is

1. 90.5
2. 678
3. 15.51
4. 7.82
5. None of the above

QUESTION 5

In question 4, which one of the following statements is correct?

1. The test statistic is 15.51
2. The expected frequency for “six or more” and “No tattoo” is 25
3. The observed frequency for “five or six” and “Have tattoo” is 19.41
4. The critical value is 7.82
5. The two variables are independent

QUESTION 6

Which one of the following statements is incorrect?

1. The correlation analysis determines the strength and direction of the relationship between variables
2. The independent variable always influences the dependent variable
3. A negative slope in a simple linear regression shows that there is a negative relationship between the independent and dependent variables
4. If the slope is equal to zero, there is no relationship between the two variables
5. When the coefficient of correlation (r) is negative, there is a weak relationship between the two variables regardless of the magnitude of r .

QUESTION 7

A random sample of eight car drivers insured with a business and having similar car insurance policies was selected. The following table lists their driving experience (in years) and the monthly car insurance premium (in R) paid by them:

Driving experience (X)	5	2	12	9	15	6	25	16
Monthly car insurance (Y)	640	870	500	710	440	560	420	600

Which one of the following statements is incorrect?

1. The insurance premium depends on the driving experience
2. The Y intercept is 766.6
3. The slope is -15.48
4. There is a negative relationship between Y and X
5. 76.77% of the total variation in the dependent variable is explained by the variation in the independent variable

QUESTION 8

In question 7, the monthly car insurance premium for a driver with ten years of driving experience is

1. R766.60
2. R767.70
3. R611.84
4. R100
5. R154.76

QUESTION 9

If the coefficient of correlation is equal to 0.98. Which of the following statement is incorrect?

1. There is a strong positive relationship between the dependent and independent variables
2. When the independent variable decreases, the dependent variable decreases as well
3. The slope (b_1) is positive
4. SS_{XY} is positive
5. There is an decreasing pattern in the data

QUESTION 10

A research on the relationship between the Y and X reveals the following information:

$n = 14$, $\sum X = 52.9$, $\sum Y = 92.8$, $\sum YX = 382.85$, $\sum X^2 = 215.41$ and $\sum Y^2 = 693.9$

Which one of the following statements is incorrect?

1. $SS_{XY} = 32.19858$ and $SS_X = 15.52358$
2. $\hat{Y} = 2.07417 - 1.20883 X$
3. When $X = 1.5$, Y will be equal to 1.9
4. The coefficient of correlation is 92.08%
5. $SST = 78.77$

8.5.9 Assignment 09

ASSIGNMENT 09 WRITTEN JOURNAL Unique Nr.: 772002 Fixed closing date: 28 SEPTEMBER 2018
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Please take note of the following before commencing this assignment.

IMPORTANT INFORMATION

1. Use the template below to complete your journal of tutorial experiences.
2. In the journal, you will reflect on your tutorial experiences during the year.
3. There are three focus areas on which you will be assessed;
 - (a) Reflections on group discussions in which you take part during tutorials
 - (b) Reflections on learning or self-assessment activities that you participate in or that you complete during tutorials
 - (c) Reflections on additional learning resources that you are referred to for further reading during the tutorials
4. **It is strongly recommended that you complete your reflections on the tutorials continuously (tutorial by tutorial) as you go through the sessions and not wait to do a final reflection at the end of the year.** It may not be possible for you to remember in detail the events of the tutorials if you complete the journal once-off at the end of the year.
5. You can complete your journal from discussions and other interactive learning activities with fellow students in either face-face or in e-tutorials on myUnisa, **and not from both platforms**. On myUnisa, you can create your own blog, which you can extract into a word document when completed, summarise and restructure it to comply with the template below, and submit it like any other written assignment.
6. All written activities other than those completed online on myUnisa should be attached to, and submitted along with the journal as evidence of completion of the activities.
7. **Please note that you will not be awarded marks for group discussion and learning activity related reflections without evidence of participation in an approved tutorial discussion group, or evidence of your completion of the learning activities, respectively.**
8. **For both face-face and online discussions, you are recorded as active only if you posted at least one question, or replied to at least 3 questions from the tutor or from other students.**
9. You can share information with others in your tutorial group (i.e. in blogs on myUnisa, in face-face group or one-one discussions, which you can include in your reflections, as long as you do not plagiarise each other's reflections, for which you will be penalised.
10. **Each tutorial session will be assessed out of 100 marks, using the rubric in the addendum to this Tutorial Letter.**

Your journal should be a reflection on tutorial sessions in the **Tutorial Resource for XTA1610**, which are listed below. The mark allocation per tutorial session will be weighted as follows:

Tutorial Session Number	Tutorial Session Title	Contribution to Journal Mark (%)
1	Chapters 1 and 2	10
2	Chapter 3	15
3	Chapters 4 and 5	15
4	Chapter 6	10
5	Chapters 7 and 8	10
6	Chapter 9	10
7	Chapter 11	15
8	Chapter 12	15
Total Marks		100

Complete the template below for each of the tutorial sessions. **Do not exceed the number of words indicated for each section.** Remember, according to the marking rubric, your feedback must show clear evidence of your ability to identify the key or important concepts or skills covered during the tutorials, with clear evidence that you understood the concepts and also acquired the critical skills.

Tutorial Session Number	
Tutorial Topic	
Platform [Face-face/myUnisa]	
Dates of the tutorial	mm/dd - mm/dd
Learning Centre [if face-face]	
Tutorial Group number	

1. What was tutorial this tutorial about **[Summarise in less than 200 words]**.

2. Indicate with clear explanations, the specific contributions (e.g. questions, comments, examples, etc.) by the tutor or by others during the discussions which you considered particularly useful or important **(maximum 200 words)**

3. Which concepts, knowledge or skills were tested in the learning or self-assessment activities of the tutorial? **[maximum 150 words]**

4. of the additional study materials provided to you or to which you were referred to during the tutorial did you find most useful or relevant to the outcomes of the tutorial lor to the module in general? In your reflection, explain in what way the materials were most useful or relevant? **[maximum 200 words]**

9 OTHER ASSESSMENT METHODS

There are no other assessment methods for this module.

10 EXAMINATION

There is a venue based final examination which is scheduled for the end of year (normally in Oct/Nov) examination period. Please confirm the venues and exact date on the Unisa website.

The format of the paper will be as follows:

Your examination will be a 2 hour examination consisting of multiple choice questions only. You need to have a final mark of 50% to pass this module and 75% to obtain a distinction.

The final mark consists of your year mark (50%) and your examination mark (50%).

Should you have a final mark of less than 50%, it implies that you failed XTA1610.

If you fail the examination with less than 40%, the year mark will not count to help you pass.

11 FREQUENTLY ASKED QUESTIONS

The study@myUnisa brochure contains an A-Z guide of the most relevant study information. Please refer to this brochure for any other questions.

12 SOURCES CONSULTED

No books other than the prescribed book was consulted in preparing this tutorial letter.

13 ADDENDUM

This addendum contains the assessment criteria and the rubric which will be used to mark assignment 09, your journal of tutorial reflections.

Tutorial Session Number	
Tutorial Topic	
Platform [Face-face/myUnisa]	
Dates of the tutorial	mm/dd - mm/dd
Learning Centre [if face-face]	
Tutorial Group number	

CRITERIA	Excellent 8.0-10.0	Good 5.0-7.9	Average 3.1-4.9	Poor 0-3.0
[Q1 & Q2 for each tutorial session] Ability to present an accurate, comprehensive summary of the proceedings of the tutorial. [25 marks]	Accurate and comprehensive summary of the proceedings of the tutorial. The student correctly identified 80-100% of the key issues addressed in the conversations.	Above average ability to summarise the proceedings of the tutorial. The student correctly identified 50-79% of the key issues addressed in the conversations.	Fair but substandard ability to summarise the proceedings of the tutorial. The student correctly identified 31-49% of the key issues addressed in the conversations.	Poor or no meaningful summary of the proceedings of the tutorial. The student correctly identified 30% or less of the key issues addressed in the conversations.
Ability to identify the key issues addressed in the conversions. [15 marks]	The summary and the key questions identified suggest deep understanding of concepts.	The summary and the key questions identified	The summary and the key questions identified suggest fair, but	The summary and the key questions identified suggest poor or lack of understanding of
Evidence of understanding of				

concepts. [10 marks]		suggest above average understanding of concepts.	substandard understanding of concepts.	concepts
[Q3 for each tutorial session] Ability to identify the key concepts or skills embedded in the tutorial activities. [20 marks] Level of understanding of concepts [10 marks] [Q4 for each tutorial session] Evidence of accessing and reading the learning resources. [20% marks]	Excellent ability to identify the key concepts or skills embedded in the tutorial activities. The reflection suggests deep understanding of concepts. Excellent ability to identify and to unpack or summarise the critical content, with suggesting deep comprehension of the content in the recommended learning resources.	Above average ability to identify the key concepts or skills embedded in the tutorial activities. The reflection suggests above average understanding of concepts. Above average ability to identify and unpack or summarise the critical content, suggesting above average comprehension of the content in the recommended learning resources.	Fair, but substandard ability to identify the key concepts or skills embedded in the tutorial activities. The reflection suggests fair but substandard understanding of concepts. Satisfactory ability to identify and unpack or summarise the critical content, suggesting fair but substandard comprehensive of the recommended learning resources.	Poor or unable to identify the key concepts or skills embedded in the tutorial activities. The reflection suggests poor or lack of understanding of concepts. Or no ability to identify and unpack or summarise the critical content, suggesting poor or no comprehension of the recommended learning resources.

14 CONCLUSION

Remember that there are no "short cuts" to studying and understanding Statistics. You need to be dedicated, work consistently and practise, practise and practise some more! If you are an athlete or a footballer or a swimmer oror play the piano you will know exactly what is meant with this comment! We hope that you will enjoy studying this module and we wish you success in your studies.

Your lecturer