



**Faculty of Engineering, Science and
Technology**

COURSE GUIDE

EB 3125: Statistics

BBIOT/ BIT/ BIECC

Academic Year 2020

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Module Introduction by the Module Leader

Hi, welcome to EB3125 –Statistics. This course is to introduces students to descriptive and inferential statistics. This will include description of data, probability, probability distributions, sampling distributions, estimation of parameters, statistical testing of hypotheses, regression and correlation.

Nur Suaidah Rosli
Course Leader

Contact Details of Lecturer

Name : Ms. Nur Suaidah Rosli

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Tel : 06-8502338 (ext. 411)

Consultation Hours : Thursday 2 pm - 4 pm & Friday 10 am – 12 pm

[illegible]

Lecturer Schedule

Week	Lecture Schedule	Reference Material
1	Introduction	Chapter 1 (Main Reference)
2	Data Classification	Chapter 2 (Main Reference)
3	Measures of Central Tendency and Dispersion	Chapter 3 (Main Reference)
4	Probability	Chapter 4 (Main Reference)
5&6	Probability Distributions	Chapter 5 & 6 (Main Reference)
7	Sampling and Sampling Distribution	Chapter 7 (Main Reference)
8	Estimation of parameters	Chapter 8 (Main Reference)
9&10	Significance Testing	Chapter 9 & 10 (Main Reference)
11&12	Significance Tests Using The Chi-Square Distribution	Chapter 11 (Main Reference)
13&14	Simple Linear Regression Analysis	Chapter 13 (Main Reference)

Tutorial Schedule

Week	Lecture Schedule	Reference Material
1	Tutorial 1 - Introduction	Chapter 1 (Main Reference)
2	Tutorial 2 - Data Classification	Chapter 2 (Main Reference)
3	Tutorial 3 - Measures of Central Tendency and Dispersion	Chapter 3 (Main Reference)
4	Tutorial 4 - Probability	Chapter 4 (Main Reference)
5 & 6	Tutorial 5 - Probability Distributions	Chapter 5 & 6 (Main Reference)
7	Tutorial 6 - Sampling and Sampling Distribution	Chapter 7 (Main Reference)
8	Tutorial 7 - Estimation of parameters	Chapter 8 (Main Reference)
9 & 10	Tutorial 8 - Significance Testing	Chapter 9 & 10 (Main Reference)
11 & 12	Tutorial 9 - Significance Tests Using The Chi-Square Distribution	Chapter 11 (Main Reference)
13 & 14	Tutorial 10 - Simple Linear Regression Analysis	Chapter 13 (Main Reference)

Continuous Assessment Schedule

Tasks	Percentage (%)	Week
Assignments/ Project	10	5
Tests 1 & 2	20	4 & 6
2 Quizzes	10	2 & 5



Faculty of Engineering, Science & Technology
Assignment Cover Sheet

Course Code: EB3125

Course Title: STATISTICS

Assignment Title: ASSIGNMENT 10%

Due Date: 27/11/2020

Date Submitted: _____

Lecturer Name: NUR SUAIDAH ROSLI

To be completed if this is an individual assignment

I declare that this assignment is my individual work. I have not worked collaboratively nor have I copied from any other student's work or from any other source except where due acknowledgement is made explicitly in the text, nor has any part been written for me by another person.

Student name: _____ Student ID: _____ Signature: _____

To be completed if this is a group assignment

We declare that this is a group assignment and that no part of this submission has been copied from any other student's work or from any other source except where due acknowledgement is made explicitly in the text, nor has any part been written for us by another person.

Student ID	Student Name	Signature
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Lecturer's comments: _____

Total Marks: _____ Lecturer's Signature: _____

Feedback to Student:

I/We acknowledged receiving feedback from the lecturer on this assignment.

Student's Signature: _____

Extension certification:

This assignment has been given an extension and is now due on _____

Lecturer's Signature:

Submission:

Assignments, with or without disks, must be submitted with the "assignment cover sheet" **attached securely to the front.**

ASSIGNMENTS NOT SUBMITTED WITH THE COVER SHEET WILL NOT BE MARKED.

Late Penalties:

Assignments that are submitted after the due date and time will attract a penalty of 10% of the total marks available per day late, up to a maximum of five days. Assignments submitted after five days will be graded with zero mark.

Extensions:

Extensions will only be granted in exceptional circumstances on medical or compassionate grounds. **Extensions must be applied for in advance of the assignment's due date** and the lecturer of the appropriate course must sign the extension certificate on the assignment cover sheet.

Assessment Irregularity:

Cheating and plagiarism, i.e. the action or practice of taking and using as one's own the thoughts, writings or other work of someone else with the intent to deceive, constitute irregularities as described in the programme handbook. Such actions are a major infringement of the university college's academic values and will be dealt with severely.

Plagiarism and/or cheating occurs when:

- * a computer program or part of a program, substantially written by someone else (either another student, a previous student, the author of a publication or some other person) is presented as one's own work;
- * paragraphs, and even sentences in essays which are written by someone else, are not enclosed in quotation marks, and accompanied by full reference to source;
- * the work of someone else is paraphrased, and is not appropriately attributed and referenced.

Group Work:

By signing the cover sheet, group members are indicating that they agree that each member of the group made a fair and reasonable contribution to the assignment or project. In cases of doubt or dispute, individual members of the group may be required to undergo an oral examination regarding their contribution to the assignment or project.

Note:

All marks are provisional until ratified by the exam board at the end of the session

EB 3125 (STATISTICS): PROJECT NEW DRUG DEVELOPMENT DATA

Description of Data:

[50 MARKS]

The data consists of drug information collected on 50 patients used to perform frequency and descriptive statistics. Variables in the data set are:

1. Subject: Patient
2. Treatment: Two levels. 0 for Placebo and 1 for treatment group.
3. Age: age of patient
4. Gender: Male or Female
5. Before_exp_BP: Blood pressure before experiment
6. After_exp_BP: Blood pressure after experiment

Answer all question. Your answer must in the excel file. Label all your answer sheet with the question number.

1. Show the descriptive statistics (Mean, median, standard deviation) for the age, blood pressure before experiment and blood pressure after experiment (9 marks)
2. Create a scatterplot for this data.
 - i. x axis = age, y axis = Blood pressure before experiment (2 marks)
 - ii. x axis = age, y axis = Blood pressure after experiment (2 marks)
 - iii. x axis = Blood pressure before experiment, y axis = Blood pressure after experiment (2 marks)
 - iv. x axis = Treatment, y axis = Blood pressure before and after experiment (make in one graph. (3 marks)
3. Show the least squares regression line on the scatterplot Question no.2. (5 marks)
4. Find the regression equation for predicting on Question no.2. (5 marks)
5. Find the correlation coefficient for the data obtained from Question no.2 (5 marks)
6. Explain the meaning of the correlation coefficient obtained for Question no.5. (8 marks)
7. Use Hypothesis testing (t-test in the excel) to see the significant between
 - i. Blood pressure after experiment vs Blood pressure before experiment (3 marks)
 - ii. treatment vs Blood pressure after experiment (3 marks)
 - iii. treatment vs Blood pressure before experiment. (3 marks)

SUBJECT	TREATMENT	AGE	GENDER	BEFORE_EXP_BP	AFTER_EXP_BP
D1	1	65	F	103.3	80.5
D2	1	59	F	93.6	85.9
D3	1	60	M	92	85.2
D4	1	54	F	93	87.8
D5	1	65	F	95.4	85.3
D6	1	57	M	109.6	94.2
D7	1	69	M	97.9	83.9
D8	1	62	M	96	85
D9	1	49	F	98.4	86.3
D10	1	45	F	98.4	90
D11	1	65	F	95.5	85.2
D12	1	62	M	91.7	87.9
D13	1	64	M	98.6	84.6
D14	1	68	F	98	83.8
D15	1	70	M	96.4	85.5
D16	1	66	M	104.4	93
D17	1	65	F	111.7	85.4
D18	1	63	F	108.6	84.8
D19	1	61	F	99.1	82.4
D20	1	63	M	106.8	88.7
D21	1	69	M	111.5	86.5
D22	1	56	M	97.4	82.4
D23	1	58	F	87.5	78
D24	1	46	M	98.1	83.8
D25	1	56	F	98.6	87
D26	1	64	M	99.1	86.3
D27	1	61	F	96.4	87.6
D28	1	66	F	101.2	84.8
C1	0	63	F	97.4	93.1
C2	0	56	F	97.2	92.4
C3	0	54	M	98.8	94.6
C4	0	69	M	98.4	92.3
C5	0	75	M	89.8	89.3
C6	0	62	F	103.4	99.7
C7	0	61	F	90.1	88.4
C8	0	59	M	93.7	90.4
C9	0	73	F	96.4	91.1
C10	0	57	F	98.6	90.5
C11	0	48	M	95.2	90.4
C12	0	64	M	95	89.3
C13	0	61	F	97.4	93.8
C14	0	66	F	97.4	92.6
C15	0	57	M	101.6	96.9
C16	0	65	M	101.2	98.9

C17	0	63	M	97.5	89.9
A18	0	51	F	92.2	86.2
A19	0	68	M	96.6	92.6
A20	0	65	F	96.9	90.4
A21	0	65	F	102.6	91.5
A22	0	64	M	99.5	93.8

Warning of plagiarism, syndication and cheating

Warning: Cheating

Cheating, in any form, is a very serious offence which could lead to severe disciplinary action. Cheating includes:

- using unauthorised materials in tests and examinations;
- letting another person take tests or examinations on one's behalf OR taking tests or examinations on another person's behalf;
- working jointly, copying or sharing another student's work and presenting it as one's own piece of work;
- inventing, copying or altering data, quotations or references;
- plagiarising, i.e. taking or using another person's work without attributing the source and thus, giving the impression that it is one's own work.

Penalties for Cheating in Tests or Examination

Any student caught and found guilty in the disciplinary hearing will be deemed to have **FAILED** in the subject and will be required to **REPEAT** the said subject. Any repeated offence may result in **EXPULSION FROM THE UNIVERSITY**.

IMPORTANT POINTS TO NOTE

ATTENDANCE

As students, you will benefit by attending classes regularly. Full attendance is required and the University has the right to bar any student from taking the final examinations for poor class attendance (below 75%). If you are barred, you will not be allowed to take the examination and will have to repeat the level in the subsequent semester.