MZUZU UNIVERSITY

FACULTY OF SCIENCE, TECHNOLOGY AND INNOVATION

DEPARTMENT OF MATHEMATICS AND STATISTICS

1. PROGRAMME	:	BSc Maths and Statistics (Honours)
2. SUBJECT	:	Statistics
3. LEVEL OF STUDY	:	2
4. COURSE TITLE	:	Introduction to statistical Analysis
5. COURSE CODE	:	STAT 2301
6. DURATION	:	16 Weeks
7. PRESENTED TO	:	Senate
8. PRESENTED BY	:	Dean, FoSTI
9. LECTURES PER WEEK	:	3
10. TUTORIAL HOURS PER WEEK	:	1
11. PRACTICAL HOURS PER WEEK	:	0
12. INDEPENDENT LEARNING HOURS	:	12
13. TOTAL COURSE CREDITS	:	12
14. PRE-REQUISITE COURSE CODES	:	None
15. CO-REQUISITE COURSE CODES	:	None
16. DELIVERY METHOD:		
16.1 Mode of Delivery	:	Face to face
16.2 Teaching Methods	:	Lectures, tutorials, group discussion, projects, demonstration, brainstorming, problem solving
17. ASSESSMENT METHODS	:	2 continuous tests 1 End of Semester examination
18. ASSESSMENT WEIGHTING	:	40% Continuous 60% End of semester examination

19. AIM OF THE COURSE : To introduce univariate methods of Statistical analysis.

20. LEARNING OUTCOMES : A successful learner from this programme will be able to:

- Calculate probabilities, means and variances of some special univariate discrete and continuous distribution.
- Present and interpret data.
- Use moment and Probability generating functions to calculate moments and identify probability distribution.
- Carry out tests for means, difference between two means and sample proportions
- Use excel to work out proportions estimates and carryout statistical tests.

21. TOPIC OF THE COURSE**:**

21.1 Descriptive statistics

- Presentation of data
- Measures of central tendency and dispersion

21.2 Elementary probability

- Probability of simple and compound events

21.3 Random Variables

- Discrete and continuous random variables

21.4Discrete probability distributions

- Uniform, Bernoulli, Binomial, geometric, negative binomial and Poisson

21.5 Continuous distributions

- Uniform, exponential, normal
- Moment and probability generating functions

21.6Point estimation

- Pooled estimators

21.7Sampling distribution

- Distribution of sample mean, proportion and variance
- Interval estimation

21.8Hypothesis testing

- Tests for means, difference between

- means and sample proportions

28.9ANOVA

- One-way and 2-way.

28.10 Use of statistical software excel, SPSS, STATA and R

22. PRESCRIBED TEXTS:

Mendenhall, W. (2019) *Introduction to Probability and Statistics*, London: Cengage Learning.

Mendenhall III, W., Beaver R. G. and Beaver, B. M. (2013) *Introduction to Probability and Statistics*, 14th Ed., London: Cengage Learning.

Bluman, A. G. (2022) *Elementary Statistics: A step by step approach*. 11th Ed., London: McGraw Hill.

23. RECOMMENDED TEXTS:

Bluman, A. G. (2019) *Elementary Statistics: A step by step approach*, 8th Ed., London: McGraw Hill.

Ross, S.M. (2019) *Introduction to probability models*, 12th Ed., London: Elsevier.

Giri, A. (2021) *Applied Marketing Analytics Using SPSS: Modeler, Statistics and AMOS Graphics*, Dehli: PHI Learning.

Crawshaw, D.J. (2013) *A Concise Course in Advanced Level Statistics with worked examples*, Oxford: Oxford University Press.

Joaquim, M. (2007) Applied *Statistics Using SPSS, STATISTICA, MATLAB and R*, Springer-Verlag.

This course outline was approved by Senate on **11th January, 2024**