SPA 2403: SURVIVAL ANALYSIS

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Kirinyaga University

General Information

Instructor: Dr. Mutua Kilai	Time:
Day: Monday	Place:

- **Class Policy**: Regular attendance is essential and expected.
- **Academic Honesty**: Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation.
- **Software**: R Software will be used all through.
- **Assignment Template**: To be provided as per the assignment schedule.

Course Purpose

To impart skills on estimation of transition intensities/survival rates.

Course Outcomes

At the end of this course learners should be able to:

1. apply principles of actuarial modelling in solving insurance problems

2. apply statistical models in estimations and approximations

3. determine the survival function and the hazard function

4. determine age-dependent transition intensities

COURSE DESCRIPTION

i. Principles of actuarial modeling.

ii. Distribution and density functions of the random future lifetime, the survival function and the hazard function.

iii. Estimation procedures for lifetime distributions including censoring, Kaplan-Meier estimate, Nelson estimate and Cox model.

iv. Statistical models of transfers between states.

v. Maximum likelihood estimators for the transition intensities.

vi. Binomial and Poisson models of mortality.

vii. Estimation of age-dependent transition intensities.

viii. Measuring the Exposed-To-Risk.

COURSE ASSESSMENT

- Written CATS 20%

- Assignment 10%

- Final Examination 70%

Course Textbooks

- Elandt, J. Norman, L. J. (1999). Survival Models and Data Analysis, John-Wiley and Sons, ISBN: 9780471349921.

- John, P. K. Melvin, L. M. (2005). Survival Analysis: Techniques for Censored and Truncated Data , Springer, 2nd ed. ISBN: 9780387953991.

- Marubini, E. Valsecchi, M. (2004). Analyzing Data from clinical trials and Observational studies, John Wiley, ISBN: 0470093412.

Thank You!