STS3401 - Probability and Statistics I

Course Syllabus Overview

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Course Information

Course Details

- **Course Name:** Probability and Statistics I
- **Course Code:** STS3401
- **Credits:** 3 (3+0)
- **Total Student Learning Hours:** 120
- **Prerequisite:** MTS3101

Learning Outcomes

What You Will Achieve

Upon completion of the course, students will be able to:

1. Explain concepts of probability and appropriate statistical methods. (C4)
2. Solve probability and statistical problems systematically. (CTPS, NS)
3. Demonstrate continuous application of probability and statistics. (A3, LL)

Synopsis

Course Overview

This course covers probability theory and appropriate statistical methods, focusing on problem-solving, data interpretation, and practical applications.

Course Content Overview

Topics Covered

Lecture Hours: 42

Topics: 10

Main areas include:

- Statistical concepts and data description
- Probability theory and distributions
- Sampling, estimation, hypothesis testing
- Regression, correlation, and chi-square tests

Assessment Structure

Evaluation Components

Component	Weight (%)	Timing
Test 1	20	Week 5 (10 Nov 2025)
Test 2	20	Week 11 (29 Dec 2025)
Group Assignment 1 (Pitching Video)	8	Week 7
Quiz 1	2	Week 5 (10 Nov 2025)
Quiz 2	2	Week 11 (31 Dec 2025)
Group Assignment 2 (Case Study Report)	8	Week 12
Final Examination	40	End of Semester

References

Recommended Reading

1. Baron, M. (2019). *Probability and Statistics for Computer Scientists*. Chapman and Hall/CRC.
2. Mary, C. M. (2019). *Probability and Mathematical Statistics: Theory, Applications, and Practice in R*. SIAM.
3. Mendenhall, W., & Sincich, T. (2016). *Statistics for Engineering and the Sciences*. Chapman and Hall/CRC.
4. Ross, S. M. (2020). *Introduction to Probability and Statistics for Engineers and Scientists*. Academic Press.
5. Walpole, R. E. et al. (2016). *Probability and Statistics for Engineers and Scientists*. Pearson.