1. INTRODUCTION & COURSE DESCRIPTION
Welcome to the study of Statistics for Management Research. This short paper (Course Plan) is intended to provide you with the objectives of this course, the pedagogy (teaching and learning methodology), the session-wise plan, the readings used, the instructor’s expectations from the students taking this course, the examinations taken, and the evaluation system. This course outline also provides the plan for preparing for each class session of this course.

Please use this plan to keep up working on and learning from this course right from the start!

2. COURSE OBJECTIVE
Dealing with the study of statistics for business research H.G. Wells once said, “Statistical thinking will one day be as necessary as the ability to read and write.” Today, the issue for management researchers is not a shortage of information but how to use available information for better decision-making. Thus the objective of this course is:

1. To know the process of making conclusions about populations based on information from only samples (statistical inference)
2. Parametric methods of statistical inference
3. Non-parametric methods of statistical inference
4. To know how to specify, estimate, and use statistical models to predict and obtain reliable forecasts (modeling & forecasting)

You are expected to apply what you learn from this course (along with 2 other research methodology courses, taught simultaneously to you this time) in successfully conducting business research involving data analysis, in the future, including the practical field research work to write term papers or do summer project at the end of this course.

For students of statistics to become practitioners of statistics, the skills required are, (1) employing the correct statistical technique to solve a particular problem, using unbiased sample data, and (2) understanding the conceptual foundations of statistics in order to interpret correctly the results. In this course, these objectives will be met by, (1) discussion of the nuts and bolts of the particular topic, and similarly, (2) the case analyses mentioned in this outline using EXCEL templates and exercises in R. For those who wish to explore advanced and modern statistical computations, there is a powerful graphical, computational, and programmable environment, called as R. R is open source freeware like Linux, and is freely downloadable from website cran.us.r-project.org. You may visit this
Statistics for Management Research

website and download the latest binary version, including the packages you would need, on your laptop.

3. **COURSE CONTENT**
The specific topics studied are characteristics of the normal probability distribution, sampling distributions, confidence interval estimation, hypothesis testing, tests on one population and more than one population, t-test, Chi-squared, and F-tests, analysis of variance, simple linear regression and multiple regression, correlation and non-parametric methods.

4. **RECOMMENDED READINGS**
One primary support text book and two references will be used for this course. The texts used are:


5. **LEARNING METHODOLOGY & EXPECTATION FROM STUDENTS**
I prefer the class sessions to be discussion sessions, not formal lectures. A class session will typically consist of, exposition of principle & concept, question & answer rounds, classroom workout and discussion of cases and its solutions, and invited case presentations. You are supposed to work with me during this workout. This course outline lists all the required topics to be covered in this course. Remember that statistics cannot be learned by textual reading, but by problem solving. You are requested to read the topic in advance, and thus come fairly, if not fully, prepared for the cases. The examinations are almost completely case or numerical problem-solving oriented. We will also use laptops as much as possible in our classroom environment, and solve statistics problems in Excel using data and templates. We will attempt to illustrate some of our topics by using R.

6. **SESSION-WISE PLAN**

<table>
<thead>
<tr>
<th>SESSION</th>
<th>Topic</th>
<th>Reference</th>
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<tbody>
<tr>
<td>SESSION 1</td>
<td>Introduction and the Normal Distribution</td>
<td>(AS, Ch. 4)</td>
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<tr>
<td>SESSION 2</td>
<td>Case: Multicurrency Decision</td>
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<td>SESSION 3</td>
<td>Sampling and Sampling Distribution</td>
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<td>SESSION 5</td>
<td>Confidence Intervals</td>
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<td>SESSION 6</td>
<td>Case: Privacy Problem</td>
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<td>EXAM I</td>
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<td>SESSION 7</td>
<td>Hypothesis Testing</td>
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<tr>
<td>SESSION 8</td>
<td>Case: Tiresome Tyres I</td>
<td>(AS, Ch.7)</td>
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7. PERFORMANCE EVALUATION

The final grade in this course will be based on your demonstrated performance in 4 main evaluation components, with the following weights:

- Class participation, Preparedness and Case analysis: 25%
- Module I Exam: 25%
- Module II Exam: 25%
- Module III Exam: 25%

The course grading pattern is as follows. Each component will be evaluated on a scale of 0-100 marks. The final mark (0-100) will be a weighted average of four components, with weights as above. Based on final mark, letter grade for the course will be assigned as follows:

- \( X \geq 95 \) A+
- \( 85 \leq X < 95 \) A
- \( 75 \leq X < 85 \) A-
- \( 65 \leq X < 75 \) B+
- \( 55 \leq X < 65 \) B
- \( 45 \leq X < 55 \) B-
- \( 35 \leq X < 45 \) C+
- \( 25 \leq X < 35 \) C
- \( 15 \leq X < 25 \) C-
- \( 5 \leq X < 15 \) D
- \( X < 5 \) F

Please maintain a notebook record of class-work for this course. All components are written exams except first component. I will welcome continuous feedback from you about the progress of this course, and about any way in which I can make this course better for you.