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**NORTH SOUTH UNIVERSITY**

**Center of Excellence in higher Education**

**The first private university in Bangladesh**

**School of Business**

**Department of Management**

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| **Course Name:**  | Applied Statistics |
| **Course Code** **& Section No:** | BUS 173  |
| **Semester:** | Spring 2017 |

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| Instructor & Department Information  |
| 1. **Instructor Name:**
 | Syed Riaz Mahmood Ali |
| 1. **Office**
 | NAC 871 |
| 1. **Office Hours:**
 | ST : 11.10 am – 12.10 pm, 2.30 pm-3.30 pm MW : 11.10 am – 12.10 pm, 2.30 pm-3.30 pm  |
| 1. **Office Phone:**
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| 1. **Email Address:**
 | syed.ali@northsouth.edu riaz.ahc@gmail.com |
| 1. **Department:**
 | Management |
| 1. **Links:**
 | riazmahmood.weebly.com |

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| Course & Section Information  |
| **Class Time & Location** | Monday & Wednesday1.00 pm – 2.30 pm NAC2049.40 pm – 11.10 pm NAC 304  |
| **Course Prerequisite(s)** | BUS 173 |
| **Course Credit Hours** | 3:0 |
| **Course Description** | Emphasizes estimation and hypothesis testing for the linear statistical model. Topics include contingency tables, goodness of fit, single and multiple regression, correlation, Bayesian decision theory, time series analysis, and index number. Computer application is a compulsory component for the course. Cross-listed as ECO 173 and ENV 173. Prerequisite: BUS 172. 3 credits. |
| **Course Objectives** | The course contents are designed to give students a clear idea about:* Forming hypothesis related to goodness of fit, parametric and non-parametric tests
* Forming correlation and regression models, test their accuracy and interpret them for use in real life scenarios.
* Making predictions based on forecasts through time series analysis and seasonal forecasting.
* Using statistical packages to carry out multiple regression and time series analysis
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| **Student Learning Outcomes** | Upon the successful completion of this course, a student will be able to: 1. Define null and alternative hypothesis for parametric and non parametric tests.
2. Test hypothesis and come to a conclusion/ make a decision.
3. Develop basic linear regression models, and test their reliability and accuracy.
4. Forecast using time series analysis.
5. Use basic statistics software packages to carry out the above tasks.

Note: Students will demonstrate above learning outcomes through one or more of the following: assignment, quiz, midterm exams, and final exam. |

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|  Textbook(s)  |

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| **Author**  | **Title**  | **Edition & Year** | **Publisher** | **ISBN** |
| Mann, Prem | Introductory Statistics | 8th Edition  | JOHN WILEY & SONS, INC. |  |

Reference(s)

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| **Ken Black** | Business Statistics | 6th Edition | Wiley |  |

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| Teaching Strategy  |

The instructor will present the concepts of statistics through lecture and guided discussion. The principles will be applied to a variety of business conditions and will be presented from a “real world perspective.”. Classes will be conducted using a variety of methods. These will include lectures, small group discussions and exercises. You are encouraged to actively participate in all aspects of the class as significant learning occurs when all members of the class make contributions. I see my role as to facilitate learning through a varied and collaborative experience, not simply by lecturing.

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| Assessment Strategy and Grading Scheme |
| **Grading tool** | **Points** |
| Mid 1 Exam | 20% ( 20%-30% MCQ, 70% to 80% Math Questions) |
| Mid 2 Exam | 20% ( 0%-10% MCQ, 90% to 100% Math Questions) |
| Quiz | 10%  |
| Final Exam | 30% ( 20%-30% MCQ, 70% to 80% Math Questions) |
| Project | 15% |
| Attendance  | 5% |

**The final grade will be a percentage of the accumulation of all points received over the course as follows (eg: your earned points/total points) 100**

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| 100%-93%=A | 79%-77%=C+ | 60%-66%=D |
| 92%-90%=A- | 76%-73%=C | 60% or less =F |
| 89%-87%=B+ | 72%-70%=C- |  |
| 86%-83%=B | 69%-67%=D+ |  |
| 82%-80%=B- |  |  |

**Note: This assigned percentage letter grade may be altered at the instructor’s discretion**

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| Class room Rules of Conduct |

1. Cellular phones should be “**turned off’**/“**Silent mode”** during the class.
2. Students are advised to frequently refer to the **Student Handbook of North South University** on the following link:

http://www.northsouth.edu/student-code-of-conduct.html

1. **Academic Integrity Policy:**

Academic dishonesty of any type will not be tolerated. This includes, but is not limited to, plagiarism (copying others work and representing it as our own—in part or in total— without tile appropriate citations) and copying others responses during the exams. In addition, classroom professionalism is to be maintained at all times. This means that when the professor is speaking or when Students are presenting their ideas. The classroom should he silent, with the exception of invited questions. As in any academic environment questions are welcome, but informal chatter or communication among class members becomes a distraction for all those in attendance and will not be tolerated.

No talking or other forms of communication with other students will be allowed when exams are being distributed. The ‘no talking’ requirement is enforced during the exam and continues until all students have handed their exam in to the instructor. Any talking during the exam will disqualify you from taking the exam. It is my (and all other professors) expectation that your academic work for the course will be performed without resorting to cheating, plagiarism, lying, and/or bribery. Any student engaging in any of these behaviors will be dealt according to North South University's code of conduct.

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| Exams, Quiz & Make UP Policy |

**Quiz may or may not be announced and may not be made up for any reason**. All exams will be given over the designated class period. The exams must be taken at the scheduled times. **Exams may not be made up unless arrangements are made prior to the class period for which they are scheduled.**

***Cell phones are prohibited in exam sessions.***

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| Attendance Policy |

In order to foster a collaborative learning experience where shared student participation is important, attendance is critical. We recognize situations may develop where a student may miss class due to illness, unique family considerations. In such a case, the student is still responsible to ensure his/her assignments are submitted on time and that the information covered in that session is collected properly. Arriving late for class is rude, unprofessional, and detracts from the learning experience of your fellow students. Consistent tardiness has the following consequences. First late arrival - no penalty, second late arrival and thereafter - ½ %off final course grade. North South University mandates to fail students who are absent 25% or more from their classes, even if such absences are excusable.

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| **COURSE ADJUSTMENTS** |

The lecturer reserves the right to make adjustments in the course requirements consistent with the course’s overall objectives. Total course workload and available time will be considered in any such adjustments. You will be notified at the earliest possible time if changes are to be made.

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| **COMMUNICATION POLICY** |

Instructor will use his email and the website to communicate with students. Students are responsible to check their emails and the website regularly.

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| Appropriate Use Policy |

All members of the North South University community must use electronic communications in a responsible manner. The University may restrict the use of its computers and network systems for electronic communications subject to violations of university policies/codes or local laws or national laws. Also, the university reserves the right to limit access to its networks through university-owned or other computers, and to remove or limit access to material posted on university-owned computers.

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| Students With Special Needs |

North South University will provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities/special needs that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their instructors to ensure that their needs are met. The University through its Special Need section will exert all efforts to accommodate special needs.

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| Students Complaints Policy |

Students at North South University have the right to pursue complaints related to faculty, staff, and other students.  The nature of the complaints may be either academic or non-academic.  For more information about the policy and processes related to this policy, you may refer to the students’ handbook.

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| **COURSE CONTENTS &SCHEDULE** |

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| **Lecture Topic** |
| 1 | Introduction and Review BUS172  |
| 2 | Hypothesis Testing – tests of mean of a normal distribution (z-test, t-test), type I & type II error, power of test  |
| 3 | Hypothesis Testing – tests of variance, population proportion. |
| 4 | Hypothesis Testing - tests of difference between two means, difference between two population proportions and equality of variances. |
| 5 | Hypothesis Testing - tests of difference between two means, difference between two population proportions and equality of variances. |
| 6 | Chi- squire Tests |
| 7 | Chi- squire Tests |
| 8 | Revision |
| 9 | **Mid I (lecture 1 to 8)** |
| 10 | Analysis of variance |
| 11 | Non Parametric methods: Analysis of categorical data |
| 12 | Non Parametric methods: Analysis of categorical data |
| 13 | Non Parametric methods: Analysis of categorical data |
| 14 | Non Parametric methods: Analysis of categorical data |
| 15 | Exam practice and revision |
| 16 | **Mid Term 2 (lecture 10 to 15)** |
| 17 | Simple Regression |
| 18 | Simple Regression |
| 19 | Multiple Regression |
| 20 | Multiple Regression |
| 21 | Time Series Analysis |
| 22 | Time Series Analysis |
| 23 | Time Series Analysis |
| 24 | Final Exam Review |
|  | **Final Exam ( lecture 17 to 24)** |