# MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

# Course Outline

**Course Title:** Statistics I
**Semester Course Prefix and Number:** STAT 2551
**Old Quarter Course Prefix and Number:** STAT 215

**Submitted By:** Hazareesingh
**Approval Date:**
**Revision Date:** April 2011

**Number of Credits:** 4    **Number of Lecture Credits:** 4
**Semester(s) Offered:**    **Number of Lab Credits:**    **Number of Lab Hours:**
**Class Size: 30**    **Number of Studio/Demonstration/Internship Credits:**
     *(Must be approved by AASC or SGC)*

## Course Purpose Code:

- **0 –** Developmental Courses
- **1 –** Non-transferable, General Education
- **2 –** Technical course related to career programs
- **3 –** College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- **4 –** Other college course not considered a part of general education (MNTC) (e.g. computer science, health, physical education)
- **x**   **5 –** Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- **9 –** Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

## Catalog Description:

This course is an introduction to descriptive and inferential statistics for averages, probability, random variables, interval estimation, and population hypothesis tests. The course includes use of computer programs.

## Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s):     None
Reading Prerequisite:     Reading intensive
Composition Prerequisite:     None
Mathematics Prerequisite:     MATH 0094 (MATH 1521 is recommended, but not required)

## Career Programs and Transfer Majors Accessing this Course:

Business related programs: Accounting, Finance, Business, etc.
Some Health related areas.

## Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

0.    None
1.    Communications
2.    Critical Thinking
3.    Natural Sciences
4. **x** Mathematical/Logical Reasoning
5.    History and the Social and Behavioral Sciences

6.    The Humanities and Fine Arts
7.    Human Diversity
8.    Global Perspectives
9.    Ethical and Civic Responsibility
10.    People and the Environment

**Learning Outcomes**: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

1. **Summarize data using**

    a. **tables**

    b. **graphs**

    c. **measures of centrality**

    d. **measures of dispersion**

2. **Calculate probability of events**

    a. **Using addition rule**

    b. **Multiplication rule**

    c. **Conditional probability**

    d. **Baye's Theorem**

3. **Compute probability associated with common distributions such as**

    a. **Binomial**

    b. **Poisson**

    c. **Hypergeometric**

    d. **Uniform**

    e. **Normal**

    f. **t**

4. **Create confidence intervals for a variety of statistics including**

    a. **Means of one and two populations**

    b. **Proportions of one and two populations**

5. **Make inference about a variety of statistics including**

    a. **Means of one and two populations**

    b. **Proportions of one and two populations**

6. Determine

    a. the line of best for a set of data and

    b. the correlation coefficient

**Student Assessment Methods:**
1. Classroom paper & pencil tests
2. Excel exercises

**Use of Instructional Technology**: (includes software, interactive video and other instructional technologies):
Class uses online teaching aids, statistical software and modeling software such as Excel, Minitab & scientific calculators

**Outline or Statement of Major Course Content:**
I.    Descriptive Statistics-computer and hand drawn charts
II.   Measures of Central Tendency
III.  Measures of Dispersion
IV.   Probability
V.    Normal, Binomial, and Poisson Distributions
VI.   One Population Statistical Inference
VII.  Two Population Statistical Inference
VIII. Linear Regression
IX.   Correlation

**Additional Special Information**:  (special fees, directives on hazardous materials, etc.)

**Transfer Information:**  (Please list colleges/majors that accept this course in transfer.)  All 4-year colleges.

**Approvals:**

| Body | Representative Signatures | Date |
|------|--------------------------|------|
| **Curriculum Committee** | | |
| **Faculty Association** | | |
| **Academic Affairs Standards Committee** | | |
| **Chief Academic Officer** | | |