**Course Title**: Regression Analysis

**Course No.**: STAT 4360  **CRN**: 17060

**Prerequisites**: STAT 3150 (Mathematical Statistics I) or equivalent

**Instructor**: Dr. Dennis Walsh

**Office**: KOM 203D  **Office Hrs**: Mon/Wed 10:00 – 12:00, 2:00 – 5:00,  
**Phone**: 898-2224 (office)  
898-2669 (dept. off.)

**Dept. Fax**: 898-5422  **E-Mail**: dwalsh@mtsu.edu

**Text**: *An Introduction to Statistical Methods and Data Analysis*, 5th edition, Ott & Longnecker, Duxbury

**Purpose**: This course presents the theory and application of statistical regression models. Approaches to model building and data analysis are emphasized. Computation and interpretation of results are facilitated through the use of statistical software.

**Objectives**: Upon completion of this course, students will have

1. Understood the importance of regression models in describing statistical relationships, in prediction problems, and in testing hypotheses;
2. Acquired the ability to build models for both simple and multiple regression situations;
3. Learned techniques of residual analysis and other diagnostic measures;
4. Applied transformations to satisfy necessary model assumptions;
5. Gained familiarity with statistical software that facilitates regression analysis;
6. Recognized the importance of visual displays in analyzing data;
7. Used linear regression in problems drawn from many areas of application including advertising, engineering, genetics, law, medicine, nutrition, pharmacy, psychology, sociology, etc.

**Topics**: The course covers selected topics from the textbook, including:

1. Review of some basic results in statistics and probability; introduction to MINITAB statistical software.
2. Method of least squares and simple linear regression
3. Correlation between random variables
4. Analysis of variance and testing for a regression relation
5. Diagnostic/remedial measures, residual analysis, and variable transformations
6. Multiple regression models
7. Model building, assessment, and refinement
**Requirements:**

Activities required of students:
1. Participate in class activities.
2. Read and study text assignments.
3. Solve assigned problems/take-home quizzes.
4. Succeed on tests.
5. Succeed on final examination.

**Attendance:**

Attend every class. Prompt notification of an absence is required. If a student misses a test for a legitimate reason that is promptly reported, the instructor will either give a make-up test or reweigh the final exam. A grade of W or I will be given only in accordance with the University policy. The highest score possible on an assignment/test that is turned in late is the lowest score of the students who were not late. If a student misses a class, it is the student's responsibility to obtain class notes from a classmate.

**Evaluation:**

The semester grade will be based on tests (60%), assignments (20%), and the final exam (20%). Letter grades will be assigned according to the scale:
A for [90,100],  B for [80, 89],  C for [70, 79],  D for [60, 69],  F for [0, 59].

**Reasonable Accommodations for Students with Disabilities:**

Reasonable Accommodations for Students with Disabilities: Middle Tennessee State University is committed to campus access in accordance with Title II of the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973. Any student interested in reasonable accommodations can consult the Disability & Access Center (DAC) website and/or contact the DAC for assistance at 615-898-2783 or dacemail@mtsu.edu.

**Lottery Scholarship**

Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility. If you drop this class, withdraw, or if you stop attending this class you may lose eligibility for your lottery scholarship, and you will not be able to regain eligibility at a later time. For additional Lottery rules, please refer to your Lottery Statement of Understanding form (http://www.mtsu.edu/financial-aid/forms/LOTFEV.pdf) or contact your MT One Stop Enrollment Coordinator (http://www.mtsu.edu/one-stop/counselor.php).
**Academic Misconduct**

Middle Tennessee State University takes a strong stance against academic misconduct. Academic Misconduct includes, but is not limited to, plagiarism, cheating, and fabrication. For purposes of this section, the following definitions apply:

1. **Plagiarism**: The adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper attribution. This includes self-plagiarism, which occurs when an author submits material or research from a previous academic exercise to satisfy the requirements of another exercise and uses it without proper citation of its reuse.

2. **Cheating**: Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. This includes unapproved collaboration, which occurs when a student works with others on an academic exercise without the express permission of the professor. The term academic exercise includes all forms of work submitted for credit or hours.

3. **Fabrication**: Unauthorized falsification or invention of any information or citation in an academic exercise.

To be clear: going online and taking information without proper citations, copying parts of other student's work, creating information for the purposes of making your paper seem more official, or anything involving taking someone else's thoughts or ideas without proper attribution is academic misconduct. If you work together on an assignment when it is not allowed, it is academic misconduct. If you have a question about an assignment, please come see me to clarify. Any cases of academic misconduct will be reported to the Office of Academic Affairs for violating the academic honesty requirements in the student handbook.

**Important Dates:**

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<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 19</td>
<td>Classes begin</td>
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<tr>
<td>February 1</td>
<td>Last day to drop or withdraw without a grade</td>
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<tr>
<td>March 27</td>
<td>Last day to drop or withdraw with a grade of “W”</td>
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<tr>
<td>March 7-12</td>
<td>Spring Break</td>
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<tr>
<td>April 28</td>
<td>Study Day</td>
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<td>May 3</td>
<td>Final Exam (3:30 - 5:30)</td>
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