DEPARTMENT OF MATHEMATICS AND SCIENCE  
COURSE SYLLABUS  
MTH 152 Elementary Statistics  
Spring Session D01 - 2017  

Instructor: Mary Lou Townsend  
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Email: mtownsend@worwic.edu  
Office: HH 103-I  
Office hours: Monday and Wednesday 2:30 – 3 pm; Tuesday and Thursday 10 am - noon  

I. COURSE DESCRIPTION: This course introduces elementary statistics through a critical examination of its subjects and applications. Topics from descriptive statistics include data organization, expectation, and measures of variation. Also covered are random variables, probability laws, counting techniques, binomial and normal distributions, applications to the central limit theorem, confidence intervals and tests of statistical hypotheses involving the mean, median, and proportions. Topics from parametric and nonparametric statistics are introduced. Hours: 39 lecture.  
Prerequisites: ENG 095 and MTH 092 with grades of “C” or better or acceptable reading and mathematics diagnostic assessment scores. Usually offered in the fall, spring and summer. (3 credits)  

II. COURSE MATERIALS:  
A. TEXTBOOK: Sullivan, M. (2013). Statistics Informed Decision Using Data (5th edition) Boston, Massachusetts: Pearson Education, Inc, (bundled with MyLabsPlus access code) ISBN #: 0321837738 (It is possible to purchase a standalone access code, which includes an online version of the textbook. The hardback textbook is optional; the access code is required.)  

B. CALCULATOR: TI-83/84 plus calculator is required.  

C. BLACKBOARD: Blackboard is being used as a supplementary site in this course. To access course content in Blackboard you need to have access to a computer with an Internet connection, (other requirements may apply). Please refer to this link for computers available on campus that meet these requirements: 
http://www.worwic.edu/Students/LearningResources/ResourceLabs.aspx
Please follow these directions to access course syllabi and any other materials posted for this course:

Login Information
1. From the Wor-Wic home page, click on myWor-Wic (top-right above Quick Links).
2. Enter your Wor-Wic user ID and password (same as your Wor-Wic email user ID and password) to access the portal homepage.
3. In the “My Blackboard Classes” web part, click on a class listed to be directed to the Blackboard site.
4. Blackboard may also be accessed through Quick Links on the college homepage and also through a link at the bottom of the homepage.

III. COURSE OBJECTIVES, ASSESSMENT GOALS AND STRATEGIES:
Upon successful completion of the course the student will demonstrate the ability to:

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<thead>
<tr>
<th>COURSE OBJECTIVE</th>
<th>ASSESSMENT GOALS</th>
<th>ASSESSMENT STRATEGIES</th>
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</table>
| 1. Organize and summarize quantitative and qualitative data.  
  (GEO: 1, 3, 4, 5, 6) | A. Understand statistics terminology.  
                          B. Distinguish between population and sample.  
                          C. Calculate measures of central tendency and measures of variation.  
                          D. Construct standard graphical displays.  
                          E. Describe the relationship between 2 variables | • In class activities  
                                                                 • Homework  
                                                                 • Test questions  
                                                                 • Exam questions |
| 2. Calculate and interpret a probability distribution.  
  (GEO: 1, 3, 4, 5, 6) | A. Use the laws of probability to determine probability, or use the laws of probability to calculate the probabilities of compound events.  
                          B. Distinguish between discrete and continuous probability distributions.  
                          C. Use the binomial probability distribution function to calculate probability.  
                          D. Use the normal probability distribution function to calculate probability. | • In class activities  
                                                                 • Homework  
                                                                 • Test questions  
                                                                 • Exam questions |
| 3. Apply inferential statistical models to draw conclusions about populations. | A. Use the Central Limit Theorem  
                          B. Calculate confidence intervals | • In class activities  
                                                                 • Homework  
                                                                 • Cultural Diversity Assignment |
IV. COURSE CONTENT: This course is divided into three units:

Descriptive Statistics: Population descriptions and measures
Sample descriptions and measures
Frequency and probability distributions
Histograms, Stem and Leaf plots, Boxplots
Measures of Central Tendency (mean, median, mode)
Measures of Variation (range, standard deviation, variance)
Linear Regression

Probability:
Probability Rules
Counting Rules
Random Variables
Sample space, event
Independence, Mutual Exclusion
The binomial distribution
The normal distribution
The standard normal distribution
The distribution of sample means

Inferential Statistics: Confidence Intervals
Hypothesis Testing

Lectures and class activities provide a framework of vocabulary and concepts that will enable students to independently learn course material. This course requires independent reading, study and practice by each student.

Teaching Strategies and Learning Experiences:
In fulfilling these course objectives, the student is expected to work with instructor by:

1. attend class and participate in class discussions, activities and assignments.
2. read textbook.
3. complete homework problems.
4. complete quizzes and/or tests for each unit of study.
5. complete electronic library assignment
6. complete writing assignment
7. complete a cumulative final exam.

V. REQUIREMENTS FOR EVALUATION AND GRADING: This course will include homework assignments via MyLabsPlus, in-class and out-of-class
assignments, tests, and a comprehensive, departmental final exam. Your grade for the course will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework/Writing Assignment(s)</td>
<td>15%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Tests</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
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A letter grade will be awarded according to the following criteria:

- **A** 90-100%
- **B** 80-89%
- **C** 70-79%
- **D** 60-69%
- **F** 59% and below

The problem based assignments included in this course in MyLabsPlus are designed to enable students to practice course concepts independently and can be found at www.worwic.mylabs.com. MyLabsPlus provides real time supplemental assistance of which all students are encouraged to take advantage. These supplements are found on the right side of each assigned problem. Students needing additional help should meet with their instructor during his or her office hours and/or attend statistics tutoring sessions in the Math Lab (BH 309) Contact the Math Lab for specific days and times.

The written assignment(s) included in this course is/are designed to stimulate critical thinking and communicate statistical concepts effectively. Students needing assistance in the preparation of the written assignment should meet with their instructor during his or her office hours and/or contact the Reading and Writing Center for technical assistance.

**VI. ATTENDANCE POLICY:** Attendance is taken at every class meeting and is important to success in this course. Because of the cumulative nature of a mathematics class, missing one or more classes can adversely affect performance in the course. If a student misses class, arrives late or leaves early, the student is responsible for material missed.

If a student misses class on the day of a test it is the student’s responsibility to contact the instructor prior to the next scheduled class meeting. If contacted promptly and a legitimate, documented reason is provided and acceptable, the instructor will schedule the student for a make-up test that may be of a different format and with a specific date for completion.

**VII. IMPORTANT DATES:**
- Last day to drop – Feb. 7
- Last day to withdraw – Mar. 29
VIII. ACADEMIC INTEGRITY: All students logging into Blackboard affirm that they understand and agree to follow Wor-Wic Community College policies regarding academic integrity and the use of College resources as described in the college catalog. Wor-Wic Community College considers the following as violations of the computer usage policy:

- Using the campus computing network and facilities to violate the privacy of other individuals
- Sharing of account passwords with friends, family members or any unauthorized individuals

Violators are subject to college disciplinary procedures.

IX. EMERGENCY INFORMATION STATEMENT: In the event of severe inclement weather or other emergency, information about the closing of the college will be communicated via e2Campus and the College's website. Faculty will communicate with students about their courses and course requirements, such as assignments, quiz and exam dates, and class and grading policies, via Blackboard. Students will be responsible for completing all assignments in accordance with class policies.

X. SERVICES FOR STUDENTS WITH DISABILITIES: Wor-Wic provides reasonable accommodations for students with disabilities, in compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. If you are in need of accommodations, please contact the counseling office at (410) 334-2899. For more information, see Wor-Wic's Services for Students with Disabilities web page.

XI. CLASSROOM CIVILITY: Wor-Wic Community College respects the rights of faculty to teach and the rights of students to learn. Consequently, the college regards classroom civility as crucial to building and maintaining diverse, dynamic, and productive learning environments. See current College Catalog for full description of appropriate student conduct. Civil behavior is defined as behavior that is courteous, polite, and respectful. Students in all programs should conduct themselves in a way that is respectful to their classmates, the instructor and the classroom environment. This includes, but is not limited to, avoiding any behavior that distracts their classmates or instructor from the subject matter or discussion during the full class period.
XII. SEXUAL VIOLENCE DISCLOSURES: Wor-Wic Community College seeks a campus free of sexual violence which includes sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. Please be aware that if a student discloses a personal experience verbally or in writing as a Wor-Wic student to a faculty or staff member, the employee cannot maintain confidentiality and has the mandatory responsibility to notify one of the college’s Title IX coordinators. However, if you’d like to make a confidential disclosure of any such violence, you can contact Wor-Wic’s director of counseling (X-2900) or you can contact the Life Crisis Center at 410-749-HELP or 2-1-1. Information on rights of victims of sexual violence and related resources is available in the college catalog and at the public safety page of Wor-Wic’s website: http://www.worwic.edu/Administration/PublicSafety.aspx.

XIII. TENATIVE SCHEDULE:

<table>
<thead>
<tr>
<th>Dates</th>
<th>Sections to be covered</th>
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<tbody>
<tr>
<td>1/18</td>
<td>Prerequisites; 1.1</td>
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<tr>
<td>1/23 &amp; 25</td>
<td>1.2,1.3,1.5,1.6, 2.1,2.2</td>
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<tr>
<td>1/30 &amp; 2/1</td>
<td>2.4 StatCrunch, 3.1, 3.2,</td>
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<tr>
<td>2/6 &amp; 8</td>
<td>3.4, 3.5, 4.1, 4.2</td>
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<tr>
<td>2/13 &amp; 15</td>
<td>4.3 Descriptive Statistics Review</td>
</tr>
<tr>
<td>2/20 &amp; 22</td>
<td>Descriptive Statistics Test 5.1,5.2, 5.3, 5.4</td>
</tr>
<tr>
<td>2/27 &amp; 3/1</td>
<td>5.5, 6.1</td>
</tr>
<tr>
<td>3/13 &amp; 15</td>
<td>6.2, Probability Review</td>
</tr>
<tr>
<td>3/20 &amp; 22</td>
<td>Probability Test, 7.1, 7.2</td>
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<tr>
<td>3/27 &amp; 29</td>
<td>8.1, 9.1,9.2</td>
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<tr>
<td>4/3 &amp; 5</td>
<td>10.1, 10.2, 10.3</td>
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<tr>
<td>4/10 &amp; 12</td>
<td>11.3 Inferential Statistics Review</td>
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<tr>
<td>4/17 &amp; 19</td>
<td>Inferential Statistics Test and Final Exam Review</td>
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<tr>
<td>4/24</td>
<td>Final Exam Review</td>
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<tr>
<td>5/1 @ 9 am</td>
<td>Final Exam</td>
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