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. (2017). Statistics Informed Decision Using Data (5th edition) Boston, Massachusetts: Pearson Education, Inc, (bundled with MyLabsPlus access code) ISBN #: 9780558926809 (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. C. CALCULATOR: TI-83/84 plus calculator is required.

D. 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:

<table>
<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 | A. Use the Central Limit Theorem | • In class activities  
• Homework |
| draw conclusions about populations.  
(GEO: 1, 3, 4, 5, 6, 7, 8) | B. Calculate confidence intervals | C. Test Hypotheses | Cultural Diversity Assignment  
Test questions  
Exam Questions |
|---|---|---|---|
| 4. Employ technology  
(GEO: 5) | A. Use the graphing calculator to perform statistical operations  
B. Use statistical application software to perform statistical operations and create graphical representations. |  | In class activities  
Homework  
Test questions  
Homework |

### 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 hypothesis test project
8. 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>
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<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Project</td>
<td>5%</td>
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<tr>
<td>Tests</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
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</tbody>
</table>

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. 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 225) at the following days and times:

- Monday 5-6:30 pm
- Tuesday 1-2:30 pm
- Wednesday 4-5:30 pm

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 (BH 227) for technical assistance.

VI. TEST/EXAM PROCEDURES: There are three tests and a final exam in this course, each of which must be completed in a proctored setting. The tests and exam are available in the Testing Center (BH 226) for a period of one week. You may take the test/exam any time that the lab is open during that time period. Available dates are provided in the tentative schedule at the end of this syllabus and in Blackboard. You will need to provide picture ID in order to take the test/exam. If you are unable to take the exam during that time period 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 – Sept. 28
- Last day to withdraw – Nov. 10
- No classes – Nov. 23-27
- Last day of classes – Dec. 10
- Exam week – Dec. 12-17

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. TENATIVE SCHEDULE:

<table>
<thead>
<tr>
<th>Dates</th>
<th>Sections to be covered</th>
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<tbody>
<tr>
<td>9/7</td>
<td>Overview, Prerequisites, 1.1, 1.2</td>
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<tr>
<td>9/12</td>
<td>1.3, 1.5, 1.6</td>
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<tr>
<td>9/14</td>
<td>2.1, 2.2</td>
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<tr>
<td>9/19</td>
<td>2.4</td>
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<td>9/21</td>
<td>StatCrunch</td>
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<tr>
<td>9/26</td>
<td>3.1, 3.2</td>
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<tr>
<td>9/28</td>
<td>3.4, 3.5,</td>
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<tr>
<td>10/3</td>
<td>Descriptive Statistics Review</td>
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<tr>
<td>10/5</td>
<td>Descriptive Statistics Test</td>
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<tr>
<td>10/10</td>
<td>5.1, 5.2</td>
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<tr>
<td>10/12</td>
<td>5.3, 5.4, 5.5</td>
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<tr>
<td>10/17</td>
<td>6.1</td>
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<tr>
<td>10/19</td>
<td>6.2</td>
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<tr>
<td>10/24</td>
<td>Probability Review</td>
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<td>10/26</td>
<td>Probability Test</td>
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<tr>
<td>10/31</td>
<td>7.1, 7.2</td>
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<tr>
<td>11/2</td>
<td>Central Limit Theorem</td>
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<td>11/7</td>
<td>8.1, 8.2</td>
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<td>11/9</td>
<td>9.1, 9.2</td>
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<tr>
<td>11/14</td>
<td>10.1</td>
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<td>11/16</td>
<td>10.2, 10.3, 11.3</td>
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<tr>
<td>11/21</td>
<td>Inferential Statistics Review</td>
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<td>11/28</td>
<td>Inferential Statistics Test</td>
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<tr>
<td>11/30</td>
<td>Cultural Diversity Assignment</td>
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<tr>
<td>12/5</td>
<td>4.1, 4.2, 4.3</td>
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<tr>
<td>12/7</td>
<td>Final Exam Review</td>
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<tr>
<td>12/14 @ noon</td>
<td>Final Exam</td>
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