INSTRUCTOR INFORMATION

Name: Richard Oderwald
Email: roderwald@nr.edu
Office Hours: Posted in Blackboard

IMPORTANT:

☑ The recommended browser to use with the current version of Blackboard is Mozilla Firefox. Other browsers are inconsistent in their performance with Blackboard. When taking tests or quizzes, USE a wired connection.
☑ Check your VCCS email regularly and respond/keep in touch with your instructor.

COURSE DESCRIPTION

MTH 240 Statistics. Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing and correlation and regression. Prerequisites: a placement recommendation for MTH 240 and successful completion of MTH 158, MTH 163, MTH 166, or equivalent.

BUS 216 Probability and Statistics for Business and Economics. Introduces methods of probability assessment and statistical inference. Includes data collection and presentation, descriptive statistics; basic probability concepts; discrete and continuous probability distributions; decision theory; sampling and estimation; and hypothesis testing. Emphasizes business and economic applications. Utilizes computer software as a tool for problem solving. Prerequisite: IST 117 and MTH 163.

Credits: 3
Submissions: Homework and Quizzes completed in MyStatLab
Proctored Assessments: 2 Tests - To be completed at Testing Centers
Online Activities: Required

COURSE MATERIALS (continued on next page)


Software: Pearson MyStatLab. An Access code can be obtained online or by linking to MyStatLab through the course Blackboard site. No software needs to be installed on your computer. REQUIRED

Microsoft Excel 2000 or later or OpenOffice. REQUIRED.

Calculator: A calculator is REQUIRED. NRCC testing centers provide Ti-30Xiis calculators for use on tests. NO OTHER calculators allowed on tests, NO EXCEPTIONS!
Note: NRCC assumes no liability for virus, loss of data, or damage to software or computer when a student downloads software for classes.

The Student’s Guide to Distance Education is available at http://www.nr.edu/de/pdf/stuguide.pdf

This course requires a folder for graded materials. You must choose a graded folder by May 31, 2016. Go to http://www.nr.edu/de/folderloc/picloc.php to choose either the main campus Testing Center or the Mall Site.
A. INTRODUCTION

This is a Distance Education course designed specifically for those students whose learning styles are best served by providing instructional opportunities beyond the traditional classroom setting.

This is a course in applied statistics that emphasizes selection of appropriate techniques, calculation of statistics using formulas, a calculator and Microsoft Excel, and interpretation of results. Applications and case studies for a variety of fields will be studied.

B. COURSE OUTCOMES

On successful completion of this course students should be able to do the following:

1. Solve application problems by interpreting the materials presented, including determining the nature and extent of the information needed, and presenting the answer in standard English
2. Estimate and consider answers to mathematical problems in order to determine reasonableness
3. Distinguish between a population and a sample and between a parameter and a statistic
4. Classify data as discrete or continuous; qualitative or quantitative; and determine the level of measurement
5. Determine the design of statistical studies
6. Determine the type of sampling used to collect a sample
7. Construct a frequency table, histogram, pie chart, bar graph, line graph, stem and leaf plot, and box and whisker plot
8. Read statistical graphs and use the graphs to analyze data
9. Calculate measures of location or center (mean, median and mode) and determine which is most appropriate in particular circumstances
10. Calculate measures of dispersion or spread (range, variance and standard deviation)
11. Calculate measures of relative position (percentiles, quartiles and standard scores)
12. Determine if an observation is an outlier
13. Use the Empirical Rule and Chebyshev’s Theorem to determine proportions of the data that fall in a particular range
14. Construct a scatter plot from bivariate data
15. Determine the nature of a linear relationship from a scatter plot (negative or positive, weak or strong)
16. Calculate the Pearson correlation for bivariate data
17. Determine the sample space of a probability experiment
18. Calculate probabilities using the classical rules of probability
19. Calculate empirical probabilities
20. Construct and use probability distributions of discrete random variables
21. Calculate probabilities for binomial random variables
22. Calculate means, variances and standard deviations of discrete random variables
23. Find areas under the standard normal curve
24. Calculate probabilities using the normal distribution
25. Find z-values for given areas under the standard normal curve
26. Use the Central Limit Theorem to estimate the mean and standard deviation of a sampling distribution of sample means and sample proportions
27. Calculate probabilities for sample means
28. Calculate probabilities for sample proportions
29. Use a normal distribution to approximate the binomial distribution
30. Find a confidence interval for a population mean using the z-distribution
31. Find t-values for given areas under the Student t-distribution
32. Find a confidence interval for a population mean using the t-distribution
33. Find a confidence interval for a population proportion
34. Find the sample size needed for a particular margin of error (for means and proportions)
35. Write a complete, concise interpretation for a confidence interval using standard English
36. Perform tests for significance (hypothesis tests) for population means and proportions using the P-value and rejection regions with z- and t-critical values as appropriate
37. Calculate the coefficient of determination for bivariate data (r-square)
38. Write a complete, concise interpretation of the coefficient of determination in standard English
39. Calculate the coefficients in the equation for the least squares regression line
40. Write a complete interpretation of the slope of a regression equation in standard English
41. Calculate the variance of the slope and the variance of errors for regression
42. Perform a hypothesis test for the slope of a regression equation
43. Write a complete, concise conclusion for a hypothesis test for a given significance level using standard English
44. Use Microsoft Excel to do statistical calculations and construct statistical graphs

C. GRADING/EVALUATION

Graded Assignments—Students must do their own work for all graded assignments.

1. Tests
   There will be two tests given during the semester. There will be no make up tests. Any test missed will receive the score of “0.” Tests may be taken early. The tests are not computer based and students are not permitted to use their notes or book, however formulas and tables will be provided. Also, students will need a calculator. For Tests administered at NRCC’s testing sites, calculators (Ti-30 Xiis) are provided. No other calculator is allowed. Graded Tests will be returned to each student’s file. Students may remove them from the file. The average of all tests will count as 50% of the course grade.

2. MyStatLab Homework
   Homework by section in each chapter must be completed through MyStatLab. Homework can be completed anytime. The highest grade for each assignment will be recorded. Homework is 25% of the grade.

3. MyStatLab Quizzes
   Quizzes for each chapter must be completed through MyStatLab. Each quiz may be taken as many times as desired before the due date with the highest score recorded. Quizzes may be taken as many times as desired after the due date but will count only 75% of the original values. Quizzes are 25% of the grade.
Calculating Grades

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests (2)</td>
<td>50</td>
</tr>
<tr>
<td>MyStatLab HW</td>
<td>25</td>
</tr>
<tr>
<td>MyStatLab Quizzes</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Assignments not yet completed will not count against a student until they are past due or a score of 0 has been entered. This could overestimate a grade early on. The grading scale is as follows:

<table>
<thead>
<tr>
<th>Percent</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>&lt;59</td>
<td>F</td>
</tr>
</tbody>
</table>

Late Work: **No makeup work** will be allowed for any graded assignment completed in Class. (Tests or Class Work)

Deadlines for all electronically submitted are before midnight on the due date. Assignments can always be completed early. *Do not procrastinate!*

Tests taken at a testing center must be requested at the desk **no later than two hours** before closing time. **NO EXCEPTIONS!** Tests are due before closing time on the due date.

Before going to the testing center, students must know the school, instructor and course for which they are testing. Students must also know which test number they need to take. A photo ID will be required.

**Testing Center-Dublin** (Martin Hall, Library)
540.674.3600 ext. 4439
fax: 540.674.3643
det@nr.edu

**NRV Mall Site** (www.nr.edu/mall)
540.674.3600 ext. 3620
fax: 540.381.7128
ucas@nr.edu

D. **WITHDRAWAL AND ATTENDANCE POLICY**

**Student Initiated Withdrawal Policy**
A student may drop or withdraw from a class without academic penalty during the first sixty percent (60%) of a session. For purposes of enrollment reporting, the following procedures apply:
a. If a student withdraws from a class prior to the termination of the add/drop period for the session, the student will be removed from the class roll and no grade will be awarded.

b. After the add/drop period, but prior to completion of sixty percent (60%) of a session, a student who withdraws or is withdrawn from a course will be assigned a grade of "W." A grade of "W" implies that the student was making satisfactory progress in the class at the time of withdrawal, that the withdrawal was officially made before the deadline published in the college calendar, or that the student was administratively transferred to a different program.

c. After that time, if a student withdraws from a class, a grade of "F" will be assigned. Exceptions to this policy may be made under documented mitigating circumstances if the student was passing the course at the last date of attendance.

A retroactive grade of “W” may be awarded only if the student would have been eligible under the previously stated policy to receive a “W” on the last date of class attendance. The last date of attendance for a distance education course will be the last date that work was submitted.

Late withdrawal appeals will be reviewed and a decision made by the Coordinator of Admissions and Records.

No-Show Policy
A student must either attend face-to-face courses or demonstrate participation in distance learning courses by the last date to drop for a refund. A student who does not meet this deadline will be reported to the Admissions and Records Office and will be withdrawn as a no-show student. No refund will be applicable, and the student will not be allowed to attend/participate in the class or submit assignments. Failure to attend or participate in a course will adversely impact a student’s financial aid award.

Instructor Initiated Withdrawal and Attendance
Since attendance is not a valid measurement for Distance Education (DE) courses, a student may be withdrawn due to non-performance. A student should refer to his/her DE course plan for the instructor’s policy.

In accordance with the No-Show Policy, a student who has not attended class or requested/accessed distance learning materials by the last day to drop the class and receive a refund must be withdrawn by the instructor during the following week. No refund will be applicable.

The student will be notified of the withdrawal by the Admissions and Records Office. An appeal of reinstatement into the class may be approved only by the instructor.

Students who have not posted ALL Introductory Assignment materials by the last day to drop the class and receive a refund will be withdrawn by the instructor as a “No-Show”.

Attendance in this Distance Education course is measured by participation and timely submission of all graded material. Throughout the semester, students who go two weeks without submitting any items, will be withdrawn for non-performance, and will not be allowed access to the course. An exception will be made if the student is current on all assignments and nothing is past due. Items to be submitted that count as participation are any of the following: Excel Assignment, Web Test attempt, Unit Test, or an HLS Lesson attempt.
E. CHEATING/PLAGIARISM POLICY

Giving or receiving help from another student or unauthorized individual on any graded part of the course is considered cheating. Use of books, notes, homework, electronic devices (Testing Center issued calculators permitted) or any unauthorized material during Unit Tests and the Final is considered cheating. Formulas, tables and scratch paper will be given with the Test and must be returned with the Test. Mobile phone calculators are not permitted.

A student found cheating on an assignment will receive a grade of zero, “0”, on that assignment and possibly an “F” for the course. This “0” cannot be made up, dropped, or replaced by any other score.

Be aware that NRCC’s Testing Centers are equipped with video surveillance. Also, electronically submitted files, such as the Excel Assignments, can be easily screened for copying and cheating. Certifications and Web Tests submitted to Hawkes Learning System include many pieces of encoded information including not only dates and scores, but items such as software versions, computer configurations, IP addresses, and connection interruptions or software error messages that are encountered.

F. DIVERSITY STATEMENT

The NRCC community values the pluralistic nature of our society. We recognize diversity including, but not limited to, race, ethnicity, religion, culture, social class, age, gender, sexual orientation and physical or mental capability. We respect the variety of ideas, experiences and practices that such diversity entails. It is our commitment to ensure equal opportunity and to sustain a climate of civility for all who work or study at NRCC or who otherwise participate in the life of the college.

New River Community College does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Dr. Mark C. Rowh, Vice President for Workforce Development and External Relations, 217 Edwards Hall, 540-674-3600, ext. 4241.
G. DISABILITY STATEMENT

If you are a student with a documented disability who will require accommodations in this course, please register with the Center for Disabilities Services located in the Advising Center in Rooker Hall for assistance in developing a plan to address your academic needs.