

ANLY462

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

Course Summary

Course : ANLY462 **Title :** Applied Analytics III

Length of Course : 8

Prerequisites : ANLY461 **Credit Hours :** 3

Description

Course Description: This course covers deeper elements of applied analytics techniques used to identify sources of variation causing business problems, how to design experiments to explore interactions, as well as techniques used to model relationship of business variables as well as quality control. It additionally includes applied tools to predict the future using time series analysis and seasonal forecasting. It integrates statistical analysis and visualization with applied problems. PREREQUISITE: ANLY461

Course Scope:

This course is designed for students majoring in a business administration or analytics field of study. The emphasis of the course will be on the appropriate use of business analytics, modeling, predictive modeling analytics, prescriptive analytics, and decision analysis as well as six-sigma quality control approaches. Students are expected to extrapolate the information from course materials, research, and class collaboration. Students will gain and understanding of multiple analytic models with Microsoft Excel and the use of worksheets and formulas. Students are expected to have basic computer and critical thinking skills.

Objectives

After successfully completing this course, you will be able to:

CO-1: Identify Test of hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Construct a Chi-square test of hypothesis and calculate statistic for goodness of fitness and independence on a contingency table.

CO-3: Review use sign tests, Wilcoxon tests, or the Kruskal-Wallis tests of populations.

CO-4: Compute and apply seasonal indexes to make seasonally adjusted forecasts.

CO-6: Explain the steps and why we compute for acceptance sampling.

CO-7: Explain how to use a decision tree to analyze decision making under uncertainty and how do you it's illustrated.

Outline

Week 1:

Topic

At completion of this week, review [Required Week 1 Reading and Resources](#)

Learning Objectives

CO-1: Identify various Types of Statistics for use in Analytics.

CO-2: Application of knowledge requirements for Analytics with Excel.

CO-3: Analyze how to compare and predict outcomes of decisions based on historical and predictive analysis.

CO-4: Integrate the use of normal distributions with six-sigma quality control approaches and risk aversion.

CO-5: Analyze the implications on the business decision-making process when given a set of descriptive statistics.

Readings

- Reading:
 - [Required Week 1 Reading and Resources](#)

Assignment

- Introduction Forum, Week 1 Forum
- Assignment 1

Week 2:

Topic

Nominal Level hypothesis tests

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Chi-square statistic for goodness of fitness and independence on a contingency table.

Readings

- Reading: [Required Week 2 Reading and Resources](#)

Assignment

- Week 2 Forum
- Assignment 2

Week 3:

Topic

Non-parametric Methods: Analysis of ordinal data

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Chi-square statistic for goodness of fitness and independence on a contingency table.

CO-3: Use sign tests, Wilcoxon tests, or the Kruskal-Wallis tests of populations.

CO-4: Test hypotheses for populations with goodness of fit and chi-square tests.

Readings

- Reading:
 - [Required Week 3 Reading and Resources](#)

Assignment

- Week 3 Forum
- Assignment 3

Week 4:

Topic

Index Numbers

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-5: Compute and apply seasonal indexes to make seasonally adjusted forecasts.

Readings

- Reading:
 - [Required Week 4 Reading and Resources](#)

Assignment

- Week 4 Forum
- Assignment 4

Week 5:

Topic

Time Series and Forecasting

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Chi-square statistic for goodness of fitness and independence on a contingency table.

CO-3: Use sign tests, Wilcoxon tests, or the Kruskal-Wallis tests of populations.

CO-4: Test hypotheses for populations with goodness of fit and chi-square tests.

CO-5: Compute and apply seasonal indexes to make seasonally adjusted forecasts.

CO-6: Explain the steps and why we compute for acceptance sampling.

CO-7: Explain how to use a decision tree to analyze decision making under uncertainty and how do you it's illustrated.

Readings

- Reading:
 - [Required Week 5 Reading and Resources](#)

Assignment

- Week 5 Forum
- Assignment 5

Week 6:

Topic

Statistical Process Control and Quality Management

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Chi-square statistic for goodness of fitness and independence on a contingency table.

CO-3: Use sign tests, Wilcoxon tests, or the Kruskal-Wallis tests of populations.

CO-4: Test hypotheses for populations with goodness of fit and chi-square tests.

Readings

- Reading:
 - [Required Week 6 Reading and Resources](#)

Assignment

- Week 6 Forum
- Assignment 6

Week 7:

Topic

Introduction to Decision Theory

Learning Objectives

CO-1: Test hypotheses about single or two population proportions; observed set and expected frequency distributions, normal or otherwise.

CO-2: Chi-square statistic for goodness of fit and independence on a contingency table.

CO-3: Use sign tests, Wilcoxon tests, or the Kruskal-Wallis tests of populations.

CO-4: Test hypotheses for populations with goodness of fit and chi-square tests.

CO-5: Compute and apply seasonal indexes to make seasonally adjusted forecasts.

CO-6: Explain the steps and why we compute for acceptance sampling.

CO-7: Explain how to use a decision tree to analyze decision making under uncertainty and how do you it's illustrated.

Readings

- Reading:
 - [Required Week 7 Reading and Resources](#)

Assignment

- Week 7 Forum
- Assignment 7

Week 8:

Topic

Exam Week

Learning Objectives

CO1. Identify business problems that can be characterized as mathematical programming problems.

CO2. Use operations research and management science techniques to solve a variety of business problems.

CO3. Analyze management problems.

CO4. Evaluate the role of decision making models and tools in resolving these problems

CO5. Apply decision making techniques, concepts and methods.

Readings

All reading materials weeks 1-7

Assignment

Final Exam

Evaluation

Grading:

Name	Grade %
Forums	35.00 %
Forum 1	5.00 %
Forum 2	5.00 %
Forum 3	5.00 %
Forum 4	5.00 %
Forum 5	5.00 %
Forum 6	5.00 %
Forum 7	5.00 %
Assignments	45.00 %
Assignment 1 - Regression	6.43 %
Assignment 2 Hypothesis Testing	6.43 %
Assignment 3 "Sign test"	6.43 %
Assignment 4 CPI	6.43 %
Assignment 5	6.43 %
Assignment 6 Control Charts	6.43 %
Assignment 7 Decision Theory	6.43 %
Final Exam	20.00 %
Final Exam ANLY462	20.00 %
Unassigned	0.00 %
Final Exam ANLY462	0.00 %

Materials

Book Title: A Practical Introduction to Index Numbers - e-book available in the APUS Online Library; links also provided in the classroom Lessons section

Author: Ralph, Jeff

Publication Info: Wiley Lib

ISBN: 9781118977811

Required Course Textbooks:

Statistical Techniques in Business and Economics, 16th Edition

Lind, Douglas.

URL:

<https://bookshelf.vitalsource.com/books/0077639723/pageid/0>

The VitalSource e-book is provided via the APUS Bookstore

Please visit <http://apus.libguides.com/bookstore> for more information

Web Sites

In addition to the required course texts, the following public domain web sites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are

subject to change.

Site Name Web Site URL/Address

American
Psychological
Association www.apastyle.org
(APA) Style
Website

Purdue
Online <http://owl.english.purdue.edu/owl/resource/560/01/>
Writing Lab

YouTube
Video on
Formatting an [http://www.youtube.com/watch?](http://www.youtube.com/watch?v=9pbUoNa5tyY&feature=related)
APA Style [v=9pbUoNa5tyY&feature=related](http://www.youtube.com/watch?v=9pbUoNa5tyY&feature=related)
Paper

Regression
Examples http://www.stat.ufl.edu/~winner/Regression_Examples.html

YouTube
Videos on
Microsoft [http://www.youtube.com/playlist?](http://www.youtube.com/playlist?list=PL6D44A8F7E77DB825)
Excel for [list=PL6D44A8F7E77DB825](http://www.youtube.com/playlist?list=PL6D44A8F7E77DB825)
Beginners

Business
Analytics <http://www.businessanalytics.com/>
Techniques

Course Guidelines

Grading Scale

Please see the [Student Handbook](#) to reference the University's [grading scale](#).

Citation and Reference Style

Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Late Assignments

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment. As adults, students, and working professionals, I understand you must manage competing demands on your time. We all know that “life happens” but it is important to adhere as closely to the deadlines in the class as possible.

Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution. If arrangements are not made in advance, a late penalty of 10% will be assessed for any assignment submitted 1-7 days past the due date. Assignments will not be accepted after the 7th day. No work will be accepted past the final day of class.

Netiquette

Online universities promote the advancement of knowledge through positive and constructive debate – both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and “flaming.” Such activity and the loss of good manners are not acceptable in a university setting – basic academic rules of good behavior and proper “Netiquette” must persist. Remember that you are in a place for the rewards and excitement of learning which does not include descent to personal attacks or student attempts to stifle the Forum of others.

- **Technology Limitations:** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Sakai classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note:** Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add “emoticons” to help alert your readers: ;-), :).

Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

Academic Services

The Online Library is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Online Library provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to librarian@apus.edu.

- **Charles Town Library and Inter Library Loan:** The University maintains a special library with a limited number of supporting volumes, collection of our professors’ publication, and services to search and borrow research books and articles from other libraries.
- **Electronic Books:** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- **Electronic Journals:** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- **Tutor.com:** AMU and APU Civilian & Coast Guard students are eligible for 10 free hours of tutoring provided by APUS. Tutor.com connects you with a professional tutor online 24/7 to provide help with assignments, studying, test prep, resume writing, and more. Tutor.com is tutoring the way it was meant to be. You get expert tutoring whenever you need help, and you work one-to-one with your tutor in your online classroom on your specific problem until it is done.

- **Disability Accommodations:** Students are encouraged email dsa@apus.edu to discuss potential academic accommodations and begin the review process.

Request a Library Guide for your course (<http://apus.libguides.com/index.php>)

The AMU/APU Library Guides provide access to collections of trusted sites on the Open Web and licensed resources on the Deep Web. The following are specially tailored for academic research at APUS:

- Program Portals contain topical and methodological resources to help launch general research in the degree program. To locate, search by department name, or navigate by school.
- Course Lib-Guides narrow the focus to relevant resources for the corresponding course. To locate, search by class code (e.g., SOC1111), or class name.

If a guide you need is not available yet, please email the APUS Library: librarian@apus.edu.

Turnitin.com

Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

University Policies

[Student Handbook](#)

- [Drop/Withdrawal policy](#)
- [Extension Requests](#)
- [Academic Probation](#)
- [Appeals](#)
- [Disability Accommodations](#)

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

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