Professor: David W. Gerbing, Ph.D.
Office: KMC 660Q
Phone: 725-4767 (not recommended except during office hours, and even then, because of the office situation, I may be meeting with students in a meeting room, instead of my office)
Office Hours: R 1:00 pm - 2:00 pm (online May 18, 25), Sunday 4:30pm online, and by appointment
Time and Classroom: online
Class Website: http://web.pdx.edu/~gerbing/460/, also D2L
Class Email: gerbing@pdx.edu
Class Google Hangouts Video Chat: Bookmark – URL we use all term
→ For email, place 460 somewhere in the subject line to be placed in the high priority class folder. Avoid D2L email because it is not real email. Response to D2L email from the PSU email system is not possible.

Course Catalog Description. This course studies aspects of consumer and industrial research methodology and techniques including marketing information system design, research planning and design, questionnaire and other instrument design, sampling plan, measurement techniques, data collection sources and methods, data analysis and interpretation, report writing, etc. Perspectives are provided from the viewpoints of both a researcher and a research/information user. One primary objective of this course is to familiarize students with scientific methodology, techniques and technology that can be used to provide useful information for marketing/business decisions. Prerequisites: BA 311.

Text: The Essentials of Marketing Research by Silver, Stevens, Kernek, Wrenn, & Loudon, 4th edition, from Textbook Media, chosen because the text is a decent text and inexpensive. You can purchase the text from the publisher, including in ebook format.

Optional Text: D. W. Gerbing, R Data Analysis without Programming such as from amazon.com with over 300 pages for $47.45. Not required for this course, but recommended for students who wish to develop a higher level of competency for data analysis. The book complements the data analysis material in the course, and includes other examples from the types of data analysis addressed in this course.

Class Project: Working alone or with up to two other self-selected students, write your own brief survey (questionnaire) about a product you choose, post on the web with Qualtrics, obtain responses from other class mates or any group of available respondents, analyze the results and write-up your findings as a marketing research report. Turn in the report via D2L. If you choose to work in a group, your grade is partially dependent on a Contribution score provided by your group mates. As a Portland State University student you are entitled to a full Qualtrics account. Do not use the free account available to everyone, instead use this provided link.

Here are some recent projects by students in this course: Affordable Care Act, Alcohol, Apple/Android, Beer Preferences, Candy Bars, Cell Phone, Chipotle’s Restaurant, Coffee Shops, Costco, Credit and Investment, Department Stores, Disability Services, Dutch Brothers, Facebook,
Footwear, Hershey, Hybrid Classes, Image Consultant, Instagram, iTunes, Mobile Phone Privacy, Music Listening, Music Streaming, Nike/Adidas, Oreos, PC or Mac, PSU Rec Center, Phones, Playstation vs Xbox, Professors, Recycling, Smartphone, Spotify, Star Trek Reboot, Starbucks, Surfing, Sushi, The Avengers, Thriftway, Tillamook Ice Cream, Uber, Viking Basketball, Walmart

This course project is an excellent opportunity to develop a portfolio item to showcase your job relevant skills. If you want to feature your project as part of your portfolio for job applications, you may wish to work alone on the project. The choice is yours.

Course Content: Listing of weekly content found on the class website.

This course, and its realization in similar undergraduate marketing courses in universities across the USA, includes two different but complementary types of content. First is the nature and context of marketing research. The primary source of this material is our text book. The second and primary type of content in this course regards data analytics. These skills involve using the computer to apply statistical concepts to analyze data.

The goal of this course is for you to develop the skills needed to conduct a marketing research project in the form of a survey, a questionnaire that people fill out regarding a product of your choice. One set of needed skills to accomplish data analysis are the statistical skills taught in your eight credits of stat that are a perquisite to this course.

In this course we focus on data analysis, but one important tool of data analysis is statistics. Unfortunately, past experience teaching this course reveals that many or most students are not able to do data analysis despite these eight credits of statistics. This is true even though there are no new statistical skills taught in this course beyond what has already been presented in the prerequisite statistics courses. Even so, most of the instructional effort teaching this course necessarily involves the data analysis content to provide the needed skills to conduct the survey project and analyze and interpret the resulting data.

Past experience also demonstrates that even after reviewing concepts already taught in previous course work, some students remain unable to adequately apply the necessary statistical concepts, and some students are so over-scheduled with their life that they do not have adequate time to devote to the course. To address this issue and provide a path for these students to pass this course, the course provides two different tracks, of which you can self-select now or as late as the day of the Final.

Track ABC for those who have the interest and/or time to apply statistical concepts to data analysis, and Track C for those who do not. Students who select Track C can only earn up to a C in the course. Track ABC students can earn any grade up to an A depending on their proficiency of the course material. Their resulting grade is usually in the A, B or C range, but there are no guaranteed grades for either track if the required work is not complete.

All students need to complete the portion of the course addressed to marketing research content. The distinction between Track ABC and Track C content follows from the data analysis topics in the course.
**Data Analysis Topics**

1. Descriptive Statistics: Means, standard deviations, tabulation (bar charts, histograms), cross-tabulation
2. Computer: Basic R skills, or whatever software you prefer such as Excel
3. Inferential Statistics: Confidence intervals, hypothesis tests of the mean and the mean difference
4. Descriptive and Inferential Statistics: Multiple regression
5. Computer: Additional R skills

**Track C**
Marketing research concepts from the text + Topics 1 and 2 above

**Track ABC**
Marketing research concepts from the text + Topics 1 through 5 above

For students who opt for Track C, this course requires much less time than for those pursuing the full course content. Except for the first week, there is less weekly homework and there are less questions to complete on the tests, and much less to do on the project. Yet Track C students also learn about general marketing research concepts and also complete a project, though with a much simplified analysis compared to the full set of analyses presented in the course.

We are living in a world in which data analytics is becoming an increasingly marketable skill. As your instructor, I want to offer to those students who wish to attain functional data analysis skills the ability to do so, to be able to confidently include data analysis as one of their skills on their resume. At the same time I want to offer other students a means to pass this course and learn some general concepts of marketing research, and to have the satisfaction of doing their own survey project. Even at a simpler level of data analysis application, the project analysis is still useful.

In summary, the course content depends on the Track that you choose. When must you choose? You can choose as late in the course as you wish, but if you opt for Track C at some point, the earlier you make that choice the more effectively you will use your time. The reason, as previously stated, is that after the first homework Track C requires much less work on a weekly basis than does Track ABC. If you had decent quality statistics prerequisites (some students have not), and if you learned the material, this course is pretty basic and requires not that much time. The problem, as noted, is that many students seem to have learned and/or retained little knowledge of the prerequisites. But regardless, if you successfully pursue Track ABC, you will have attained some real data analysis skills.

**Weekly Homework.** Homework problems, indicated by track, are assigned once a week, turned in via D2L. Except for the first week, Track ABC students do more homework each week than do Track C students. The answers to the questions are due at the end of each week, 11:59pm on each Sunday night. Solutions are posted early the following week.

You turn in your homework, and project, by uploading a file to the course D2L dropbox. Name this file as follows: lastname.firstname.HWn, where n is the Homework number. For the project, do the same, but use .Project instead of .HWn.

The *Study Guide* for the tests and the project are the homework concepts, questions and solutions. **All questions on the tests are based directly on the homework.** Indeed, many of the
questions are literally the same on both the homework and the tests. As such, homework is not optional. Only students who have completed their corresponding weekly homework assignments are allowed to take the Midterm or Final. To do the homework is to prepare for the tests and project. If you cannot make the due date for an assignment, please contact me in advance so we can discuss how to address the situation.

**Computer Analyses.** I have developed a set of computer routines based on the data analysis application R, called `lessR`, which are designed to efficiently and easily, with the emphasis on easily, provide precisely the analyses needed for this course, and for which support and examples are provided. To learn more about the impact of R and its increasingly important role in data analysis, read the New York Times article about R. The popularity of R since the publication of that article in early 2009 has become even more prominent as R is becoming the world standard for data analysis.

The instructions for obtaining R and then `lessR` are found on Week 1 of the D2L content. In the modern world of open source software, both R and `lessR` are without cost and can be installed on any Windows, Macintosh or Linux/Unix computer to which you have access.

**Video Chats:** The course is online. We primarily meet via email and with scheduled online video chats with Google Hangouts. There will be 4 required chats. If you are unsure of your video/audio connection, and/or how to do a video chat, then sign up for a test video chat via the course D2L. The test video chat is not required.

Video chat sign-up times are posted under People – Groups in our D2L class site. Initially just the sign-up times for the first video chat are offered. This first video chat consists of larger groups as its purpose is to introduce the course. The last two video chats will be just with the members of your group doing the project.

**Tests:** The tests consist of a Midterm and a Final. The Final is comprehensive, though with a focus on the material presented since the midterm. The underlying motivation is that at the end of the course you should be able to demonstrate the knowledge you have learned since the beginning, from the text, class, online readings and the project.

Each test consists of multiple-choice and short-answer questions that will be taken closed-book and proctored at your computer with a service called ProctorU. The short-answer questions include interpretation of computer output.

Makeup tests for poor performance on the original tests are not given.

All test questions are based directly on the homework concepts and questions. The computer questions on a test are exactly the same questions from the homework, with the corresponding “story problem” changed. The study guide for the tests are the homework problems, all which are provided with solutions.

**Course Grade:** Your course percentage is calculated from the following weights.

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Your course percentage directly translates into a letter grade. For Track ABC students, the minimum guarantees are 90% and above an A- or A, 80% up to 90% a B-, B or B+, and 70% up to
80% a C or C+. The cutoffs may be lowered to your favor, but these are the minimum guarantees. Track C students need a score of 80% performance on their section of the tests and reduced project to attain their passing grade of a C.

**Inspiration**: How successful can students be who learn data analysis? One of my MKTG 460 students from just a few years ago became interested in data analysis as a career while taking this course. He was able to gain entrance in what many consider to be the premier data analytics masters degree program in the world, with an acceptance ratio of around 10%. For the required group project for real world data analysis, his role was team leader of a group of students from his master’s program. He presented his team’s findings regarding a classified project of interest to both the USA State Department and CIA. Not quite one year after graduating with a marketing degree from PSU, he was sitting at the same table in CIA headquarters where the President of the United States sits for intelligence briefings, where he presented the results of his group’s analysis.

**Course Content**: Content and assignments for each week are posted on our D2L class website.