The University of Wisconsin-Parkside

MAPS 732 –M21: The Essentials of R for Professionals

Course Format: Online via Canvas
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Office Hours: By appointment - available to set up appointments through Skype. See Faculty availability under Course Policies

Course Format - Online

This is an online course. This course is designed to be equivalent to a face-to-face course. Therefore, you should expect to spend a similar amount of time with this course and assignments as you would with a face-to-face class. I recommend dedicating *at least* 3-4 hours of your time each week to reading, watching instructional videos, and completing assignments. I also recommend that you schedule specific hours into your weekly calendar to make sure you have enough time. Late work will not be accepted unless you make alternative arrangements with me in advance.

Course Description/Overview

This course is specifically designed for professionals across organizations. There is no expectation that students have previous experience with data sets. The course is designed so that professionals will have basic experience using R with data and communicate data-driven findings.

This course provides an introduction to R, and to plotting data with R's default graphics system - base graphics. After an introduction to R, and an introduction to base graphics, this course looks at a number of R plotting examples, from simple graphs on univariate data to plotting bivariate data. The course starts with navigating simple tools such as histograms and density plots for characterizing one variable at a time, then moves on to scatter plots and other useful tools for showing how two variables relate. The course ends with an overview of plot customization. Plot customization includes using R plot colors effectively and creating and saving plots in R.

Learning Objectives

- Write code and set up the work directory
- Manage data frames
- Run exploratory data analysis checklist with base graphics (formulating a research question)
- Conceptualize the principles of analytic graphics (explore the role of comparison, causality, and relevance)
- Create graphs and plots for univariate data.
- Create graphs and plots for bivariate data.
- Understand plotting and the use of color in R
- Create appropriate report and presentation using visual analytics

Course Competencies

- Demonstrate competency in writing R code
- Demonstrate competency in managing data frames
- Know the conceptual foundations of exploratory data analysis in R
- Interpret and summarize results of analysis

- Present analysis graphically – data context specific
- Create aesthetically appropriate report and presentation using R plots

Learning Materials

Crawley, Michael J. 2013. *The R Book: Second Edition*. Wiley and Sons, Ltd. **(Chapters posted on Canvas)**

Required Technology and Other Information

To be successful in this program, you should have regular access to reliable technology (hardware, software, and internet) at home.

- Hardware: you should have your own personal computer (MAC or PC), preferably made within the last 5 years.
- Operating system: Windows 7 or Mac OSX 10.6 or newer. Please be sure to install regular updates.
- Browser compatibility: we suggest using the latest version of Firefox or Google Chrome
- Internet: regular access to reliable high-speed internet (DSL or cable, a minimum of 1.5 Mbps download speed is suggested)

Please make sure that your computer and browser are compatible with the Canvas interface. If you have a problem with accessing a Canvas feature, first go to the help tab and contact online Canvas Support. If that does not help you, you may want to contact the Canvas support through a phone call.

Summary of Student Evaluation

- **Course Requirements**

Requirements	Percentage
Syllabus Quiz (must pass with a 100%)	0
Student Introduction	5
Assignment 1 – Getting Started & Essentials of R	20
Assignment 2 – Data Input & Exploration	25
Assignment 3 – Univariate Data	25
Assignment 4 – Bivariate Data	25
TOTAL PERCENTAGE POINTS	100%

- **Grade Scale**
  - 94-100%=A
  - 90-93%=A-
  - 87-89%=B+
  - 84-87%=B
  - 80-83%=B -
  - 77-79%=C+
  - 74-76%=C

- 77-73%=C-
- 67-69%-D+
- 64-66=D
- 61-63=D-
- 60%=F

Assignment Overview

All papers must be typed and double-spaced with 1-inch margins on all sides.

- Use 12-point font
- Assignments must be turned in on Canvas
- Proofread all written work, and cite your sources if you used any. Failure to cite sources will result in an F.

Class Participation

Besides introducing yourself on Canvas, there are no mandatory discussion posts that need to be made. However, I have set up a discussion post for each substantive week in case you have questions.

Course Schedule

COURSE SCHEDULE	
Week 1 June 17th - 21st, 2019	• READING o **Crawley (2013), Ch. 1 & 2** • TUTORIAL VIDEOS o **Getting Started and Understanding R** o **Using R Studio** • ASSIGNMENT o **Syllabus Quiz & Student Introduction (Due June 19th – 10pm)** o **Getting Started & Essentials of R | Due June 21st (10pm)**
Week 2 June 24th – 28th, 2019	• READING o **Crawley (2013), Ch. 3 & 4** • TUTORIAL VIDEOS o **Data Input & Essentials of R** • ASSIGNMENT o **Data Input & Exploration | Due June 28th (10pm)**
Week 3 July 1st – 5th, 2019	• READING o **Crawley (2013), Ch. 5 & 6** • TUTORIAL VIDEOS o **Univariate Tables and Figures** • ASSIGNMENT o **Univariate Data | Due July 5th (10pm)**
Week 4 July 8th – 12th, 2019	• READING o **Crawley (2013), Ch. 5 & 6 (Same as previous week)** • TUTORIAL VIDEOS o **Bivariate Tables and Figures** • ASSIGNMENT o **Bivariate Data | Due July 12th (10pm)**

The above schedule and procedures are subject to change in the event of extenuating circumstances.

Course Policies

Syllabus Quiz & Sequential Content

In order to access content on Canvas, you must complete a quiz dealing with the content of this syllabus. You cannot access any material related to the course until you finish the quiz. The quiz can be attempted an unlimited number of times, cannot hurt your grade, and must be completed with a 100%. The point of the quiz is to ensure that you understand the guidelines and requirements for the class so that there is no possibility for complaints later. In addition, your completion of the syllabus quiz is a contract that both of us agree to the guidelines set forth in this class.

In addition, the course is conducted sequentially with some flexibility built into the schedule. You are allowed to go at your own pace in terms of going quickly; however, there are due dates. For example, the second assignment "**Data Input & Exploration"** is due June 28th by 10pm. However, you could complete the assignment at any time before that date. There are no restrictions on working ahead of schedule. As soon as you access the preceding content, the subsequent content will automatically open.

Reading and Tutorial Videos

The readings and tutorial videos combined are intended to convey all of the necessary information for you to be successful in this course. If you neglect either the readings or the tutorial videos you only have yourself to blame if you do not do well.

Academic Integrity

Please refer to the UWP Student Handbook: https://www.uwp.edu/live/offices/studentaffairs/handbook.cfm for information regarding penalties and procedures in cases of academic misconduct: cheating, plagiarism, etc.

Academic Misconduct

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor or your UWP governance policy for more information see: https://www.uwp.edu/explore/offices/governance/policy28.cfm

Accommodations for Students with Disabilities

If you have a disability that will affect your ability to participate in class or complete assignments, contact Disability Services in WYLL D175 or at 595-2372 to request a letter of verification. This letter will state what accommodations are appropriate to facilitate your learning.

Administrative Withdrawal

A basic requirement of this course is that you will participate in class and conscientiously complete writing and reading assignments. Keep in touch with me if you are unable to complete an assignment on time. If you miss the first two assignments, you will be administratively withdrawn from this section. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and if you are administratively withdrawn from the course you will not be eligible for a tuition refund. If you have questions about the administrative withdrawal policy at any point during the semester, please

contact me.

Attendance/Participation
There is no specific attendance policy, since the course is an online course. However, I expect that you will introduce yourself to the class within the first week.

Faculty Availability
Face-to-Face Office Hours: None
Online Office Hours: I will make myself available upon request. There is always the option for a Skype meeting.
E-Mail Availability: I will respond to emails within 48 hours, if emailed on a Friday I may not respond until Monday.

Incompletes
All assignments must be completed in full or receive a zero.

Late Assignments
No late work will be accepted.

Netiquette
It is important to recognize that the online classroom is in fact a classroom, and certain behaviors are expected when you communicate with both your peers and your instructors. These guidelines for online behavior and interaction are known as netiquette.

When posting on the Discussion Board in your online class, you should:

- Make posts that are on topic and within the scope of the course material
- Take your posts seriously and review and edit your posts before sending
- Be as brief as possible while still making a thorough comment
- Always give proper credit when referencing or quoting another source
- Be sure to read all messages in a thread before replying
- Don't repeat someone else's post without adding something of your own to it
- Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point
- Always be respectful of others' opinions even when they differ from your own
- When you disagree with someone, you should express your differing opinion in a respectful, non-critical way
- Do not make personal or insulting remarks
- Be open-minded

For more information on netiquette you can refer to The Core Rules of Netiquette excerpted from the book Netiquette, by Virginia Shea.

Resources for Students

Student Health & Counseling Center

Students who wish to seek counseling or other psychological services should contact the Student Health and Counseling Center.

Any registered student can use the services provided by the Center. Walk-in appointments are available Monday - Friday for medical services. Appointments are required for all counseling visits. When acute medical or psychiatric care is needed, a referral will be made. There is no charge for the office visit, however, there are minimal charges for medication or lab work or if you miss an appointment.

For an appointment, call (262)595-2366.

Parkside Academic Resource Center

The Parkside Academic Resource Center (PARC) offers free academic support. For more information visit: https://www.uwp.edu/learn/academicsupport/indextutor.cfm