3 months ago

3 months ago

3 months ago

3 months ago

No releases published

No packages published

Packages

Office: 403 Business Building, Stillwater, OK 74078 Office Phone: 405-744-6994 Email Address: bryan.hammer@okstate.edu Discord Name: Kanazuchijin#1283

Update navigation for syllabus

Update navigation for syllabus

MSIS 5223 Programming for Data Science and

Update r-setup.md

Update syllabus

Discord Server: MSIS 5193/5223 Programming for Data Science Welcome to Programming for Data Science and Analytics II. Please read through the syllabus to understand course expectations. **Communication and Announcements**

groups, community news, assignment discussions, and various other topics.

project-overview.md

project-present.md

vscode-setup.md

Analytics II

Bryan I. Hammer, Ph.D.

Spears School of Business

Oklahoma State University

Doctoral Program Coordinator, MSIS

Management Science & Information Systems

r-setup.md

README.md

Announcements and important updates will be pushed through Discord and Canvas Announcements. For Canvas, ensure your notification settings allow you to receive notifications

please email us. If you would like a more private space to speak with me, you are welcome to send a private message on Discord, an email, or schedule an appointment to meet in my office.

Instructor Response

If you do use email, please include MSIS 5223 in your email subject line for a quicker response.

and database design. This is important in understanding the data that influences every aspect of

data mining and analytics. I assume you have a basic understanding of statistical fundamentals.

As a student interested in information systems, an understanding of the role of analytics within business is crucial to staying competitive. Analytics utilizes technology, expertise, knowledge, statistics, and creative thinking to find solutions to problems. This course will provide you with

the tools and experience to conduct an analytic project beginning with sourcing the data to

Optional Text: Crawley, M. J. 2012. "The R Book," 2nd Edition, Wiley, pp. 1076.

• Optional Text: Pickup, Mark 2015. "Introduction to Time Series Analysis," Sage, pp. 232. Optional Text: Cowpertwait, Paul S. P., and Metcalfe, Andrew V. 2009. "Introductory Time

Computer Requirements

Series with R," Springer, pp. 254.

Intel Core i5 Processor (Core i7 best)

• Reliable, high-speed broadband Internet connection

• 16 GB RAM *minimum* Windows 10, latest update; or Windows 11, latest update Microsoft Edge, Mozilla Firefox, or Google Chrome **Applications and Statistical Packages**

instructions, please read Visual Studio Code Setup and Install.

following instructions:

RStudio Setup and Installation.

problems.

Please note, all my tutorials are in Windows. The software will work on Linux and Mac, and ample

A nice, visual application for managing your GitHub repositories is the GitHub Desktop

Discord Setup and Installation

provide Mac-specific help as I have never used Mac, nor am I familiar with it.

Course Objectives

commonly referred to as business intelligence and analytics). Specifically, at the end of this

knowledge about managerial decision making, business intelligence, analytics, decision

• and knowledge about Analytics enabling software packages, a general understanding, and

support systems and how they relate to other types of information systems,

knowledge about DSS architectures, development methodologies and enabling,

Grading criteria Percent **ICE** 20% THA 25% 50% Project

solve problems together or compare answers prior to turning in the work. Cooperative efforts on individual work will result in an immediate score of zero for all parties involved; the individuals will then be submitted for an academic violation. This is not to say you cannot ask general questions related to the assignment; just do not collaborate together.

 Project Deliverable 2 Project Presentation **Late Submission of Assignments** Assignments will be accepted up to one week after the due date. For each day late, 10% will be deducted from the final score. For example, if a student submits a late assignment five days past the due date/time and scores a perfect 10 out of 10 points, the final score will be 5 out of 10. This is because the assignment is 5 days past due, which is a reduction of 50% of the final score. If a student earns 5 out of 10 points, then the final grading will earn 2.5 out of 10.

As in all business courses, students are expected to act professionally inside and outside of the

1. Appropriate Use of Help. When requesting help from the professor, you are expected to have

beforehand. It is important that you exercise your ability to think and problem-solve before

asking for help. Asking for help when you have not made a sincere effort to complete the

read the background material and have made a reasonable effort to solve the problem

classroom. To facilitate and develop these attributes you will be assessed by the following:

For further instructions, guidelines, and expectations of the project, please read the following:

Grade Disputes If you feel an assessment has been graded unfairly or if you feel you have a better solution, write up your dispute and send it to me via Discord, email, or in writing to my office; do not leave your

You must dispute a grade within one week of grading.

yours. This will result in an F for a course grade.

please go to http://sds.okstate.edu.

University Drop Policy

Service, http://my.okstate.edu

Syllabus Attachment For more student resources, go to:

else's comments.

Academic Integrity

course grade.

If you require testing or homework accommodations as certified by the Student Disability Services (SDS), then please inform me in writing now. (This is not required for accommodations, but information for me.) If you need any type of accommodation due to a disability, please ensure the SDS has sent me the appropriate documentation. Students are responsible for requesting

accommodations from the SDS. You must submit a written request for any accommodation to me

at least five school days before each of the exam dates. Please schedule a meeting with me in my

Information about university drop policy and dates is at this website: http://registrar.okstate.edu/

To drop this course, contact the Registrar's office, (405) 744-6876, or drop through Banner Self

office to discuss arrangements. For more information about OSU Student Disability Services,

Due 01/10 -Syllabus, GitHub Visualization: Fundamentals ICE, THA 1 01/26 **Tutorials and Videos**

01/17 -Advanced Data Manipulation GitHub Tutorials and 2 ICE, THA 01/23 (queries, filters) Videos 01/24 -GitHub Tutorials and Dataframes with JSON and ICE, THA 3 01/30 YAML **Videos** 01/31 -Descriptive Analysis and Data GitHub Tutorials and ICE, THA 4 02/06 Videos Derivation 02/07 -Data Reduction: PCA, Factor GitHub Tutorials and 5 ICE, THA 02/13 Analysis, and Clustering Videos 02/14 -GitHub Tutorials and 6 **Classification Using Trees** ICE, THA 02/20 Videos Linear, Multiple, Polynomial, 02/21 -GitHub Tutorials and 7 ICE, THA 02/27 and Logistic Regression Videos 02/28 GitHub Tutorials and Regression with Categorical ICE, THA 8 Videos Data 03/06 03/07 Project Deliverable 1 9 -03/1303/14 -Spring Break No Class 10 03/20 03/21 -GitHub Tutorials and ICE, THA 11 Visualization: Advanced 03/27 Videos 03/28 GitHub Tutorials and ICE, THA 12 Time Series Analysis: Basics Videos 04/03 04/04 Time Series Analysis: GitHub Tutorials and 13 ICE, THA -04/10Advanced Videos 04/11 -Neural Network: Multi-Layer GitHub Tutorials and ICE, THA 14 04/17 Videos Perceptron 04/18 -Project Deliverable 2 15 04/24 04/25 16 Lab Day No Class 04/28 05/03 No Class **Project Presentation** Finals

The primary means of communication for this course will be on our Discord server. This is the central location for all things related to this course. This includes announcements, discussion

as email or a push notification on your mobile device. If you would like a quick response, contact me or the TA on Discord. For a slower response,

A link to join the Discord server will be available via Canvas Announcements. After joining, please change your nickname on the class server to your real name. Otherwise, no one else will know who they are communicating with.

The instructor will respond to student communication, Monday through Friday; if Saturday or Sunday, I will not check email, so please use Discord. For basic questions concerning homework, grading, and other similar things please message the TA.

Prerequisites Programming for Data Science and Analytics I (MSIS 5193) is a required prerequisite. Additionally, it would be beneficial for you to have a basic understanding of database management systems

Textbook and Computer Requirements The following textbooks are optional, but considered highly valuable:

interpretation of results.

Course Value

During the semester you will be using two different programming languages to enable you to conduct a wide variety of work: R and Python. My examples and tutorials are performed in

RStudio for R. This course will rely on Visual Studio Code for Python programming. You are

For Python, you will be using Visual Studio Code, Python 3.x, and multiple extensions. For

To install R and RStudio (if you plan on not using the R extension in VS Code), please use the

application. This is the easiest tool to use for managing your repositories. Please install this on

tutorials are available online if you search for it. You will receive the best help for Windows and

Linux because the programming community exists on those platforms. In addition to Windows I

The last application to install is the Discord client. It is available on Windows, Linux, Mac, Android,

and iOS. I recommend installing on both your computer and your mobile device. For installation

instructions, setting up notifications (important for receiving announcements and updates), and

use Linux, so I can offer you help if you experience issues. If you use Mac, I will not be able to

welcome to use alternatives, but I will most likely not be able to assist you with app-dependent

your computer. It is available for Windows and Mac. GitHub Desktop https://desktop.github.com/

general usage, please follow these instructions:

course you should develop

some hands-on capabilities.

Grading Criteria and Required Work

5%

Integrative Class Exercises (ICE)

Professionalism

The main objective of this course is for the student to develop an understanding of the role of

computer-based information systems in direct support of managerial decision making (nowadays

Take-Home Assignments (THA) Individually assigned, these take-home assignments focus more on concepts, rather than specific mechanics. You must turn in your typed, well-organized write-up electronically on the stated due date. The homework assignments are to be solved individually. This means that you are not to

These assignments are designed to integrate the knowledge of specific mechanics of R and

receive full credit for attempting the assignment. That is, wrong answers are not penalized.

Python for statistical procedures. They are meant to encourage learning and understanding of the

concepts covered in R and Python. As the purpose is to provide a learning experience, students

Where can you lose points? If you do not attempt a part of the ICE, you will lose points for that

you desire. You may even find posts on Discord concerning the issue you are experiencing. In

fact, some older posts from previous semesters may be related to your issue.

portion. You are allowed to seek help from fellow classmates and work on these with each other if

You will work on a class project involving development of a business intelligence solution using one or more of the DSS tools and techniques. Specifics about the acceptable business problems, which you will be identifying, analyzing and solving, will be given later in the semester. You will be responsible for identifying, conceptualizing, designing and developing a valuable solution to a real-world business problem. You can work on it in a team of 3-4 students. Team size will influence my expectation of project outcomes (ie your grade). Each team will submit two deliverables (documenting each and every step of their development effort). Generally, (unless a compelling argument is given to suggest otherwise) the term project will involve in analyzing and solving a data mining driven business problem of your choice. The first deliverable is worth 40% of your project score • The second deliverable is worth 40% of your project score

• The presentation is worth 20%

Project Overview

Professionalism

• Project Deliverable 1

Project

problem or assignment is not acceptable. 2. Classroom Conduct. In order to maintain a professional atmosphere in the classroom, students should do the following: Arrive early so that class can start on time. Late attendance is disruptive, unprofessional, and will negatively affect your grade. • Be prepared to participate—refusing to participate in the discussion shows you are not prepared. Do not read newspapers, browse the web, play games, text, or engage in private conversations during lectures and presentations. 3. Courteous Behavior. Professionalism includes treating the professor and other class members with courtesy and respect. Examples of discourteous behavior include—but are not limited to—dominating class discussion time, groveling for points, and demeaning someone

dispute under the office door, outside the door, or any place in which it can potentially be lost.

You are to do your own work where specified. Do NOT use "helpers" which means friends, family,

"coach" or having someone else do it for you constitutes CHEATING and can result in an "F" for a

online search engines; do them completely on your own. Doing it with someone else or having a

You can talk with other students on your assignments and project where it is allowed. Do NOT

copy part or all of anyone else's assignment; and do NOT allow another to copy part or all of

OSU has a policy on academic integrity. You are expected to abide by this policy in this class.

Violations may subject you to disciplinary action including the following: receiving a failing grade

on an assignment, examination or course, receiving a notation of a violation of academic integrity

on your transcript (F!), and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627, http://academicintegrity.okstate.edu/. **Accommodations for Students with Disabilities**

https://academicaffairs.okstate.edu/content/resources-students **Schedule Assignments Reading Due** Week Date Topic

© 2022 GitHub, Inc.

Terms

Privacy

-05/07Disclaimer: The instructor may deviate from the schedule. Please note that this schedule is tentative and changes will be made if necessary.

Security

Status

Docs

Contact GitHub

Pricing

API

Training

Blog

About