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Business Data Analytics and Visualization

MIS 320 Spring 2025 EU Class

CLICK HERE TO GO TO OUR COURSE!

INSTRUCTOR:


Hua Dai

Professor of MIS

Class Format
100% online
Class Location
Asynchronous Online via Canvas

HOW TO CONTACT ME:

- Email: hua.dai@csuci.edu (preferred)
- Canvas Conversation feature
- Zoom (by appointment)
- Office Hours:
  Tuesdays & Thursdays 12:00-1:00 pm (Pacific Time)
- This is an online class. Please use email to communicate with me or schedule a virtual meeting.

Welcome to MIS320 Business Data Analytics and Visualization Spring 2025 class!

I am really glad you are here. We have the exciting eight weeks together to learn and do quite a bit (starting officially on January 17, 2025). This course is designed to give you experience using a broad array of Data Analytics and Business Intelligence tools. Analysis of data is becoming a vital component of business decision-making. In this course, students will learn to identify, evaluate, and capture data analytic opportunities that create business value. The course provides an overview of data analytics concepts, principles, procedures, techniques, technologies, and applications for business data gathering, storing, processing, manipulating, and interpreting. It takes a lot of time and effort to understand the fundamentals of data analytical tools and techniques. You need plenty of curiosity, a strong desire to learn, and the ability to learn on your own.

This class makes extensive use of lab resources to help students work on hands-on activities. This class will only introduce each tool and show you the basic functionality. There is a lot more to learn about each tool/application introduced in this course. Please feel free to take time to become more familiar with each tool/application. In order to see how the course unfolds in detail, see our **Tentative Course Calendar**.

Course Description

Analysis of data is becoming a vital component of Business decision-making. In this course, students will learn to identify, evaluate, and capture data analytic opportunities that create business value. The course provides an overview of data analytics concepts, principles, procedures, techniques, technologies and applications for business data gathering, storing, processing, manipulating, and interpreting. Throughout the course, we will explore the challenges that arise in implementing analytical approaches within an organization. The course discusses and demonstrates the associated statistical approaches and data mining techniques that arise in the area. Students will learn key procedures and techniques of data analytics and data visualization.

Course Learning Outcomes

This course is designed to help undergraduate students achieve the following learning objectives*:

- Explain the ideas of data analytics to support business operations and decision making. (1,2,3,5)
- Understand how to determine the appropriate data analytics tools, technologies, techniques for intended business analysis. (1,3,4,5)
- Understand how to extract, transform, load and analyze business dataset upon defining business objectives. (1,4,5,6)
- Design and implement data analytics and data visualization solutions to address business interests, problems and opportunities. (1,3,5,6)
- Discuss ethical dilemmas resulting from emerging big data and business intelligence technologies (1,2,3,4)

· Report and illustrate to business stakeholders the procedures, interpretations, and deployment and recommendations of data analytics. (2,3,4,5,6)

* Aligns with Program Learning Outcomes for: 1) Critical thinking, 2) Oral communication, 3) Written Communication, 4) Conduct (Ethics), 5) Competencies in discipline, 6) Collaboration

Instructor Communication

One-to-One Communications: Use one of these options to converse with me about personal or sensitive questions (example: assignment extensions, guidance, feedback).

- **Canvas Conversations.** Please use the Canvas Conversation feature instead of email to reach me directly (click on Inbox in the left course navigation menu). Set your Canvas notifications to be notified about new messages via email and/or text messaging. I will reply to your message within 24-hours (usually much faster) during the week (Mon-Fri). I may disconnect on the weekends.
- **Email.** All email communications should have the following subject heading: MIS490-Online, followed by a brief summary of the question such as “MIS490-Online: Lab#1 question.” I will respond to emails usually within 24 hours, weekends and University holidays excluded. Please also explain the issue that you may have by telling me what you try to do, what you have done so far, and what is error message is if any.
- **Zoom**. Zoom is a video conferencing tool. I am available to meet with you in Zoom by appointment.

One-to-Many Communications: Use one of these options for course related questions that can be answered by someone other than me.

- **Chat**. I will arrange a weekly class chat that will function as my office hour. Be aware that live Chat and Chat history are visible to the entire class. Do not use Chat to communicate with me about personal issues.
- **Ask & Answer Forum**. The Ask & Answer forum is a discussion forum (click on Discussions) in which you may post general questions about the class. Anyone in the class may reply to these posts. I am subscribed to this forum and will reply to posts as soon as I can.

Policies

Honor Code Policy

- ***The work you submit MUST be your own***. Plagiarism and cases of copying/cheating will be reported for disciplinary action in accordance with CSU Channel Islands' Academic Dishonesty Policy
- This is the definition of Academic misconduct:
  Academic misconduct is an act in which a student:
  (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
  (b) Uses unauthorized materials or fabricated data in any academic exercise;
  (c) Forges or falsifies academic documents or records;
  (d) Intentionally impedes or damages the academic work of others;
  (e) Engages in conduct aimed at making false representation of a student's academic performance
  (f) Assists other students in any of these acts.

It is understood that what you turn in to me for a grade represents your own work. ABIDING BY THE INTEGRITY POLICY IS ASSUMED, EVEN IF YOU DON'T SIGN IT ON WORK TURNED IN.

Attendance

Attendance is required except for excused absences and advanced notification to the instructor (see University Policy). Attendance will be counted as part of your participation in the class. This online course "meets" at least once a week virtually. Students are required to "attend" online lectures by watching assigned online video-based lectures, interacting with instructors and other students online. Posting comments on the threaded discussion as required by the instructor is part of the performance measure to ensure you have attended the online lectures and participated in the discussion. Students who do not participate at a minimal level as determined by the instructor for one full week (that is, for one 7-day period) will be given an unexcused absence for that week. Excused absences are assigned at the discretion of the instructor.

Many assignments in this course require that you read each other's work to post a peer reply. Please do not read the work of other students prior to posting your

original or first post on any assignment. The reason for this is to encourage original thought and creativity and to avoid what is known as group think. In group think students seem to follow along with the first posts and reply similarly; this puts an undue responsibility on the person who had the courage to post first, and it may actually reduce the quality of your post if you structure yours like others already there. It is required that you view other students' postings in order to post your peer replies. The instructor reserves the right to grade students differently based on their participation in discussions and their failure to post their work prior to viewing the work of peers.

Statement of Student Time Commitment

For each course credit, students are expected to spend a minimum of 3 hours/week on course work in a regular semester week. Therefore, for a three-credit course, at least 9 hours/week are expected. This is a general guideline which may vary depending on the assignments and/or quizzes and summer schedule.

Late Work Policy

- You are expected to meet the designated due dates throughout this course. As explained on the Tips for Online Success page, it will be your responsibility to access each module on Day 1 and assess the content and assignment due dates.
- You are expected to turn in your assignment files by the due date listed on your course calendar. The date/ time is the same date for uploading the file to Canvas.
- Individual project and Hands-on Assignments are to be undertaken and submitted on an individual basis by each student. Individual Projects and Hands-on Assignments focus on the enhancement of database management and spreadsheet skills.
- If files are not submitted to Canvas by the appropriate deadline the student will receive a zero for that assignment.
- If you anticipate a problem with a due date, message me in advance to let me know. In your message, propose an alternative due date. When you receive a reply from me, you can consider the extension approved (unless specified otherwise in my email). Do not send me a message and assume you have an extension.
- I understand that life is not something we can always plan for. If an emergency occurs, just let me know as soon as possible. I will do what I can to support your successful learning experience.

Accommodations for Students with Disabilities

Disability Statement: If you are a student with a disability requesting reasonable accommodations in this course, please visit Disability Accommodations and Support Services (DASS) located on the second floor of Arroyo Hall, or call 805-437-3331. All requests for reasonable accommodations require registration with DASS in advance of need: https://www.csuci.edu/dass/students/apply-for-services.htm. Faculty, students and DASS will work together regarding classroom accommodations. You are encouraged to discuss approved accommodations with your faculty.

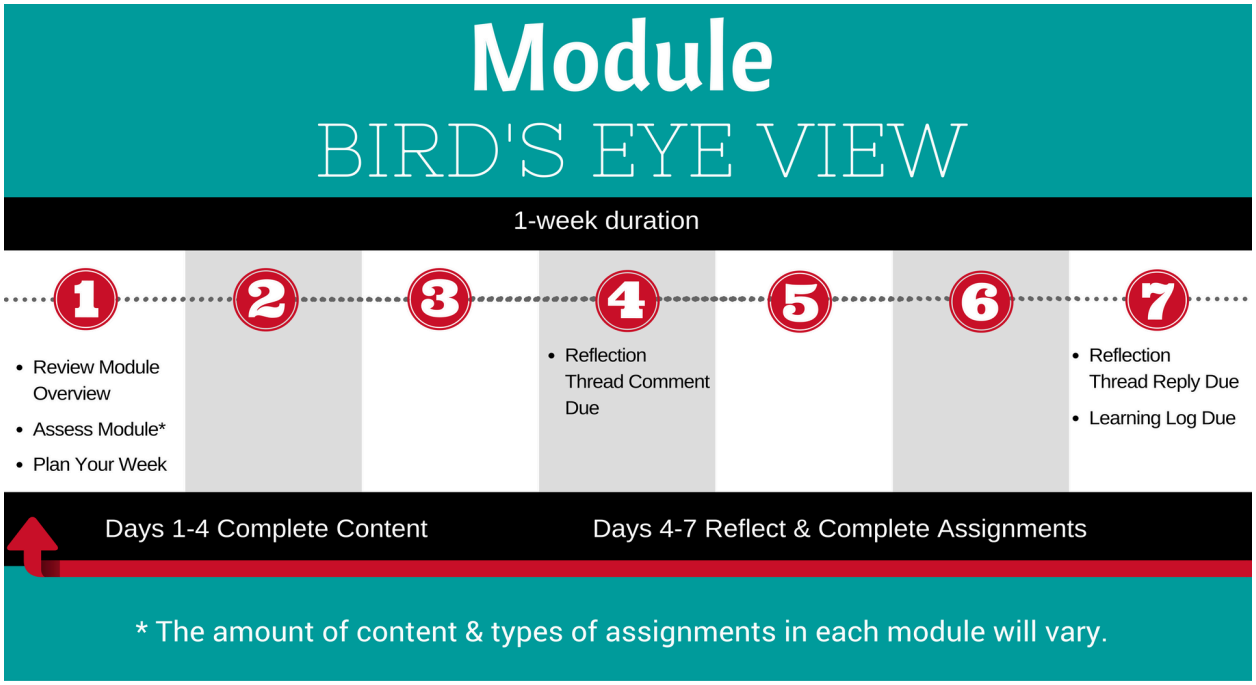
Class Structure

This class is designed with five learning modules.

General Module Structure

There are 7 days in each module:

Saturday: Day 1
Sunday: Day 2
Monday: Day 3
Tuesday: Day 4
Wednesday: Day 5
Thursday: Day 6
Friday: Day 7



All modules will include the following:

- Content items - videos, readings, etc.
- Assignments - Discussion, assignments, lab projects, individual projects
- Quizzes-weekly tests based on video lectures and course activities

All modules will have the following due dates

(as well as other due dates, which will vary):

- Day 4/5 - your discussion to the topic posted by the week
- Day 7 - comments and Replies to your peers' posts Due

Required Materials & Other Tidbits

Textbook

There is NO required course textbook for the class. There will be materials, readings, cases, handouts, lecture slides as well as datasets that will be distributed in class. Especially, the following textbooks and readings are highly recommended.

Open-source Text & Learning Materials:

- Charles Russell Severance, Sue Blumenberg, and Elliott Hauser. 2016. *Python for Everybody*: *Exploring Data in Python* 3. CreateSpace Independent Publishing Platform, North Charleston, SC, USA. Open Textbook available at **https://open.umn.edu/opentextbooks/textbooks/python-for-everybody-exploring-data-using-python-3**
- Data Science in Practice Tutorial: **https://nbviewer.jupyter.org/github/COGS108/Tutorials/tree/master/**
- Wes McKinney, 2017, Python for Data Analysis, 2nd Edition, O'Reilly Media, Inc. ISBN: 9781491957660, available at URL: **https://github.com/chenomg/CS_BOOKS/blob/master/Python%20for%20Data%20Analysis%2C%202nd%20Edition.pdf**
- Tableau, Free Training Videos, **https://www.tableau.com/learn/training/20211**
- Tableau, Tableau Public Resources, **https://public.tableau.com/en-us/s/resources**
- Microsoft, *Visualize Data in Power BI*, available at URL: **https://docs.microsoft.com/en-us/learn/paths/visualize-data-power-bi/**
- Microsoft, *What is Power BI? available ar* URL: ***https://docs.microsoft.com/en-us/power-bi/fundamentals/power-bi-overview***

Recommended Readings

- Provost, F. & Fawcett, T. (2013). *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking* (1st Edition), O'Reilly.
- Foreman, J. W. (2013). *Data smart: Using data science to transform information into insight*. John Wiley & Sons.

- Murray, G. & InterWOrks BI Team (2013). *Tableau Your Data: Fast and Easy Visual Analysis with Tableau Software.*
- Lindy Ryan (2018). *Visual Data Storytelling with Tableau*, *Pearson.*
- Manyika, J. et al. (2011). Big Data: *The Next Frontier for Innovation, Competition, and Productivity.* McKinsey Global Institute.

A note to students

This course is designed to give you experience using a broad array of Data Analytics and Business Intelligence tools. It takes a lot of time and effort to understand the fundamentals of data analytical tools and techniques. You need plenty of curiosity, a strong desire to learn, and the ability to learn on your own.

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HARDWARE & SOFTWARE EXPECTATIONS

You are required to have access to a PC/Mac either at home or on campus. The PC/Mac should have adequate software products such as Microsoft Office and other software recommended by the instructor. This course will use Canvas as our course management tool. The Lab Activities and projects will require you to submit your work to CI Learn. In addition CI Learn will serve as an online gradebook, where you can view your grades throughout the semester.

The following software will be used to demonstrate data analytics techniques. The installation instructions and license will be provided in the class.

- **Microsoft Excel** (a spreadsheet program) is part of the Microsoft Office software suite – for both the PC or MAC.
- **Jupyter Notebook** is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. We will use the Jupyter Notebook for Python programming.
- **Tableau** (a data visualization program) is not a Microsoft product. A student version of Tableau can be downloaded at https://www.tableau.com/academic/students.
- **Power BI** Desktop Power BI Desktop lets you build advanced queries, models, and reports that visualize data.
  - Install as an app from the Microsoft Store
  - Download directly, as an executable you download and install on your computer

*The installation instructions and license will be provided in each learning module in our class.

Students will need to save their work in this course. Save your work early and often!!!--An IS professional backs up their data in anticipation of a problem. Recommended ways include a USB flash drive, or by using the online storage space allocated to you by CI. This personal storage space is available through the campus computer labs on the U:\drive.

Check your CSU email regularly. The university will be using your "official" campus email account for many announcements and I will utilize email for course announcements.

Note: It is your responsibility to check your grades I enter on Canvas. If there is a mistake you have two weeks after the assignment is due to let me know of the mistake. If you do not notify me in time, the grade becomes permanent. It pays to pay attention to your grades.

Technology

You will also need the following for this class:

- Google Chrome web browser - download Chrome here
- Regular access to a computer with a webcam*
- A USB microphone like this one is strongly encouraged.

You will use the following applications in this class:

- CI Docs, part of Dolphin Pod Access:
  - This is CSU Channel Islands' instance of Google Apps. In this class you will use Google Docs, Slides, and Sites.
  - Sign here with your Dolphin Name and Password, then click on CI Docs.
- VoiceThread: an online tool for asynchronous conversations in video and voice
  - Click here for an orientation and to get support with VoiceThread

Other Tidbits

To succeed in this class, you also need:

- Earbuds or a headset to listen to videos (recommended)
- An open mind
- A good sense of humor
- A willingness to try new things, make mistakes, and learn

- A supportive shoulder for your peers

Technology Support

You have 24/7 access to Canvas support. From our course, just click on "Help" in the red, global navigation menu to the left.

If you encounter problems using web-based applications for our class, follow these steps:

1. Clear your browser's cache
2. Try a different browser (Chrome, Firefox, Safari)
3. Shutdown and restart your computer
4. If your problems persist, contact the CSU Channel Islands Help Desk at helpdesk@csuci.edu or 805-437-8552

Required Skills

Due to the structure of the course, students must have a moderate level of competence in computer literacy. Students must be able to download materials, send materials via attachments, take timed quizzes in the online environment, post responses to various topics/questions on the Discussion Forum via Canvas. Students will need to save their work in this course. Save your work early and often!!!

Having said that, no one is an expert in the field of educational technology right now. *We are all learners*. Please don't feel shy or embarrassed if you are struggling with a tool or having a problem. I want you to feel comfortable reaching out to me and your classmates for help. We are all in this together!

Online Course Netiquette Guidelines[1]

In an effort to ensure our learning community develops, thrives and sustains throughout our time together, the following ground rules will be in effect at all times.

[1] Adapted from http://blogs.lsc.edu/expectations/netiquette-guidelines/

As a student in this class, you agree to:

1. Review all discussion postings before posting your own to prevent redundancy.
2. Be aware that typing in all capital letters indicates shouting.
3. Be careful with humor and sarcasm. Both can easily be misunderstood!
4. Check your writing for errors by reviewing what you've written before submitting it.
5. Acronyms (LOL, etc.) and emoticons (smilies) are commonly used online, but be careful not to overuse them.
6. Many communications with your instructor or fellow students are best handled through email. Only post on the classroom discussion board if the conversation is relevant to others in the class.
7. Respect the privacy of your classmates and what they share in class.
8. Ask classmates for clarification if you find a discussion posting offensive or difficult to understand.
9. Avoid sweeping generalizations. Back up your stated opinions with facts and reliable sources.
10. Understand that we may disagree and that exposure to other people's opinions is part of the learning experience.
11. Be respectful of each other. We're all in this together. Before posting a comment, ask whether you would be willing to make the same comment to a person's face.
12. Keep in mind that everything you write, indeed every click of your mouse is recorded on the network server. On the Internet there are no take backs.
13. Keep in mind that you are taking a college class. Something that would be inappropriate in a traditional classroom is also inappropriate in an online classroom.

If a Ground Rule is Violated

If, at any time, you feel that any of these ground rules has been violated by a member of our community, you are encouraged to bring your concern directly and immediately to Michelle Pacansky-Brock, our community leader. Clearly identify which ground rule has been violated and include specific evidence of the violation in your email or phone call. Your concerns will be addressed promptly and in an individualized manner.

Tips for Being a Successful Online Learner

Are You a New Online Learner?

Click here to take the CI Online Learner Readiness Quiz! (Links to an external site.)

Tips for Success

Online classes provide learners with flexibility, allowing you to complete work on your own schedule. However, there are due dates within each module that you must meet. It's important to understand that this class will involve a lot of work and it will be up to you to manage when it gets done.

Your Weekly Habit

To ensure you can plan effectively for each module, each week you are advised to:

1. Access each new module on Day 1 (Saturday)
2. Assess the *content* (readings, videos, etc.) and *assignments* (things you do, usually for points)*
3. Make your personalized learning plan for the week

*There will be variations in the modules. For example, the amount of content will vary. Some weeks are heavier than others. The weeks with lighter content will likely require more time to complete assignments. Identifying and managing these variations is your responsibility.

An Example Scenario:

Let's say it's a Tuesday and a new module opens. You have a trip planned for the weekend and are unsure about your connectivity, as well as your availability. It will be your responsibility to access the module on day one, assess the content and assignments and ensure you: complete the module assignments before the weekend **or** get them started during the week and complete them on Monday.

Grading

Grades will be posted on the class Canvas site. ***Students are required to check Canvas every week to ensure the accuracy of recorded grades.*** Students have **2 weeks** after a grade is recorded to contact your Instructor to report an error, otherwise the grade becomes **permanent.**

The course consists of the following activities and assessments.

Activity	Assessment
Viewing lecture videos, reviewing demos/tutorials, and other posted links, articles, and course material.	Quiz by each Learning Module Total 5 Quizzes. 45%
Completing the Learning Logs and Discussion Activities	10%
Completing Lab Projects	25%
Completing the individual Projects	Project#1 (5%); Project#2 (15%)

Grade Distribution	
A	**> 93 %**
A-	**90 – 92.99 %**
B+	**88 – 89.99 %**
B	**83 – 87.99 %**
B-	**80 – 82.99 %**
C+	**78 – 79.99 %**
C	**73 – 77.99 %**
C-	**70 – 72.99 %**
D+	**68 – 69.99 %**
D	**63 – 67.99 %**

CLICK HERE TO GO TO OUR HOMEPAGE!

D-	**60 – 62.99 %**
F	**<60%**