

BANA 4080

Welcome to BANA 4080

Brad Boehmke

- Phonetically: “**Bem**” + “**Key**”
- Alternatives:
 - Dr. / Professor B
 - Brad
- Contact:
 - Read **Communication Expectations** Canvas page first!
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Fun Fact: Golf Obsessed

Meet Your TA

[TA Name]

- [Junior/Senior/Graduate student] in Business Analytics
- Passionate about helping you succeed

- Great resource for coding questions, labs, and homework

Email: [TA Email]

Office Hours: [Insert schedule or by appointment]

! Important

Don't hesitate to reach out — they're here to support you!

Today's Agenda

- What is data mining?
- Course overview & goals
- Course roadmap
- Tools & setup preview
- Why Python?
- Q&A + student discussion

What is Data Mining

Data Mining is All Around Us

Organizations use data mining to drive decisions every day.

Real-World Examples:

- *Kroger analyzes loyalty card data* to personalize digital coupons.
- *Spotify recommends music* based on your listening history and those like you.
- *Hospitals use patient data* to predict readmission risks.
- *NFL teams analyze player movement data* to improve performance and strategy.
- *Amazon tracks browsing behavior* to recommend products and optimize inventory.

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Every time you browse, click, buy, swipe, or stream — you're generating data.

What Is Data Mining?

The process of uncovering meaningful patterns, trends, and relationships in large data sets

Why is it important?

- Helps organizations **make better decisions**
- Reveals insights that would otherwise go unnoticed
- Powers personalization, prediction, and automation
- Drives business value in nearly every industry

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Data mining turns raw information into **actionable knowledge**

Activity

Where Do You See Data Mining?

Think about your daily routine — when are you being “mined”?

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Instructions:

1. **Form groups of 2–3 students**
2. Brainstorm at least **3 examples** where you think data mining is happening in your life
3. We’ll share a few examples as a class

Look for clues in:

- Shopping & entertainment
- Health & fitness
- Social media & tech
- Education or travel

Please think about this for 5 minutes.

Challenge

In-Class Challenge: Your First Day on the Job

You just landed your first internship or job at a large retail company. On Day 1, your manager says:

“We’re trying to understand what drives repeat purchases. Can you dig into this and see what you find?”

You’ve been handed three datasets:

- **Customer Transactions**
- **Product Information**
- **Customer Demographics**

Download the data from

<https://tinyurl.com/retail-data>

What do you do next?

Group Activity: Where Would You Start?

Work in groups of 2–3 and discuss:

- What kinds of questions could you ask?
- What would you look for in the data?
- What tools or skills do you wish you had?
- What’s hard about this kind of open-ended problem?

Please think about this for 8 minutes.

! Important

There’s no “right answer” — this is what real-world analysis looks like.

Debrief: What Did You Learn?

Let's talk through what made this challenge... challenging:

- How did it feel to be given a **vague problem**?
- What did you want to know about the data before starting?
- What tools or skills do you wish you had?
- Did your group take different approaches?

Key Takeaways:

- Real-world problems rarely come with clean instructions
- Good data work starts with **asking the right questions**
- This course will help you learn how to **explore, analyze, and communicate** insights from messy data

Course Overview

Why Learn Data Mining?

Data is everywhere — but insight is rare.

Regardless of your major, data mining gives you a competitive edge:

- **Marketing:** Understand customer behavior and optimize campaigns
- **Finance:** Detect fraud, model risk, and forecast performance
- **Operations:** Improve efficiency, forecast demand, reduce waste
- **Management:** Support evidence-based decisions across teams

! Important

Today's business leaders are expected to be **data-savvy decision makers**