

CARLSON SCHOOL
OF MANAGEMENT
UNIVERSITY OF MINNESOTA

IDSC 4110
Data Engineering
for
Business Analytics
Instructor: Vedran Lelas

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Course Motivation

- Data to be analyzed everywhere
 - Company financials, government census, online purchases, GPS navigation, sensors,
- Why learn data engineering skills?
 - Most MIS majors do not become data engineers
 - Communicate and work effectively with analysts
 - Valued and respected skill in today's technological world
 - It teaches you patience, perseverance and grit

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Course Objectives

- Demonstrate understanding of basic data engineering concepts
- Use R to build scripts designed to perform simple to moderately complex data engineering tasks
- Lay foundation for becoming a better IT manager in the future
 - Develop an appreciation for data engineers
 - Understand the challenges in data analytics projects through personal experience

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Course Expectations

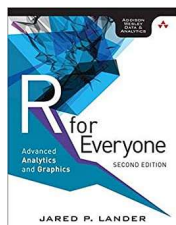
- Be prepared to work both in and out of the class
 - About 10 hours per week (including 3+ hours in-class)
- A lot of help in class and out
 - Assistance during class time and 1-1 help during office hours
- Hands-on experience
 - Heavy computer use
 - Learning by doing
 - Problem solving



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Textbook

- Jared Lander, "R for Everyone", any affordable edition is fine
- **Optional but recommended**
 - Most of the class time will be spent working on examples and problems similar to those in the text
- **Come to class prepared to work**
 - Significant portion of the class time will be spent working on the computer and typing R code



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Grading

- Grade scale listed on the syllabus
- The class is not graded on the curve
 - Borderline grade adjustments at discretion of instructor
 - Always in student favor
- "C" grade – meets all expectations
- "A" – demonstrates exceptional skill
- "B+" – median target grade



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Grade Breakdown



- Assignments
 - 3 homework assignments (30 points, at 10 each)
 - Due by midnight on designated dates
- Group Project
 - Final group project (10 points)
- Exams
 - 2 midterm and final exams (60 points, at 20 each)
 - All exams during regularly scheduled class periods
 - Midterms roughly 3rd and 5th week
 - Final exam on the last class date

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Assignments



- Students expected to
 - Work through the assigned problems on their own
 - Collaborate and discuss assignments with the instructor, TA's and classmates
 - Utilize class time to get help with the homework
- Assignments
 - Primary purpose is learning R by doing it
 - Serve as a main practice / preparation for exams
 - Worth a significant portion of the grade
 - Flex days allow you to submit assignments late if necessary

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Exams



- Students expected to
 - Work through exams on their own
- Exams
 - Designed to measure data engineering concepts and skills learned in class
 - Consist of multiple choice and a hands on R projects
 - Two midterm exams during regularly scheduled classes
 - Final exam during the last regularly scheduled class
- Group Project
 - Fairly open-ended R-project selected by students
 - Presentations during the next to the last class of the term

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Class Attendance

- Students expected to
 - Attend class and participate in class projects / assignments
 - Make use of extensive class time devoted to
 - Learning the concepts through in-class projects
 - Getting help with homework assignments
- Attendance
 - Does not count towards the grade
 - You will know what to expect
- Absence
 - You can expect to spend 2x – 5x as much time on your own
 - You will not know what to expect



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Accountability & Responsibility

- Accountability
 - No excuses!
 - None will be tolerated in your professional life
- Responsibility
 - Start early (use flex days wisely)
 - Clarify assumptions
 - Backup your work
 - Use UM's computing resources
 - Keep documentation
 - If in doubt about anything, come and talk to me!



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Getting Help

- Email and office hours
 - Info on top of the syllabus
 - Instructor (CSOM 4-133 / Zoom)
 - TA's (L-108 MIS Lab / Zoom)
 - Please copy/paste code sections and error messages
- Tech support
 - help@umn.edu



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Academic Integrity & Scholastic Dishonesty

- Integrity of your work is essential
- Students are expected to be
 - Familiar with UM's Student Conduct Code
 - <https://communitystandards.umn.edu/know-code/consequences>
 - Syllabus policy and specific integrity issues (next slide)
- Scholastic dishonesty can result in
 - Report filed with Office for Community Standards
 - Up to and including an "F" in the course (not allowed to drop)
- If you don't know what's permissible, ASK !!!



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All Work = Individual Work

- All work in this class is individual work
 - Except for the final group project
- Collaboration on homework assignments is encouraged
- What is allowed
 - Showing another student how you approached a problem
 - Post or use sample code from discussion forum
 - Search and use code found on the Internet
- Typed-by-my-own hands standard
 - Do not send or receive an electronic copies of work
 - Be careful when copy/pasting code you did not write
- Protect your own work



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Makeup Exams

- In general, makeup exams are rare
- Scheduled in accordance with UM's policy
- Students are expected to
 - Provide all required documentation
 - Let me know as soon as possible
- All makeup exam can occur prior or after the regularly scheduled exam
- Absences known in advance do not merit a makeup exam



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Disability Services

- Disability Resource Center
 - <https://diversity.umn.edu/disability/>
- Students needing special accommodation are expected to
 - Send an electronic copy of the letter as soon as possible
 - File the exam taking request with DRC 7+ days in advance
- If you don't request DRC exam in time, you will be expected to take the exam with the rest of the class



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Summary

- Basic data engineering class
- Come to class and be prepared to work
- Earn a good grade by
 - Completing assignments on time
 - Being prepared for exams on a scheduled date
- Get help when you need it
- Do your work with integrity and honesty



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