Building and Leading Data Organizations

Syllabus

COURSE INFORMATION

Course – DSBA 6010 Special Topics in Data Science & Business Analytics: Building and Leading Data Organizations

Semester - Fall 2024

Meeting Time and Day – Wednesdays 5:30-8:15

Place - Center City 504

Instructor - Steven Jordan (sjorda41@charlotte.edu)

COURSE DESCRIPTION

In today's business world, companies are increasingly relying on data to make informed decisions, achieve competitive advantage, and drive innovation. This course provides a comprehensive overview and practical guide to building and leading data organizations that drive business value. It explores the key strategic, operational, and leadership challenges involved in managing people, data, and information assets. To effectively manage and use their data, companies need to be able to develop a comprehensive data strategy, implement data governance frameworks, build a data-driven culture, and use data analytics to solve business problems. This course covers these topics in depth, providing students with the knowledge and skills they need to build and lead successful data organizations.

LEARNING OBJECTIVES

Upon successful completion of this course, students will be able to:

- Understand the role of data organizations and how they fit into modern businesses
- Design and manage data infrastructure
- Implement and enforce data governance frameworks and processes
- Understand the security, ethical, and legal implications of handling data
- Develop a comprehensive data strategy that aligns with business objectives and implement processes that action on that strategy

- Utilize data analytics and machine learning teams to extract insights from data
- Recruit, lead, and upskill data teams
- Measure and communicate the value of data initiatives

COURSE MODULES

Section 1 – Laying the Foundation

1. Introduction to Data Organizations
2. Data Management
3. Data Governance
4. Data Architecture & Modeling
5. Data Engineering & Warehousing
6. Business Intelligence, Analytics, & Data Science

Section 2 – Building Data Organizations

7. Building a Data Strategy
8. Developing Processes
9. Hiring Data Talent

Section 3 – Leading Data Organizations

10. Leading Data Talent
11. Effective Change Management
12. Scaling Data Organizations
13. Measuring the Value of Data & Insights
14. The Future of Data Organizations
15. Case Studies of Successful Data Organizations
16. Capstone Project

COURSE DETAILS

Section 1 – Laying the Foundation

1. **Introduction to Data Organizations**
   a. Overview of the data landscape and the role of data organizations
   b. How data is created, moved, stored, and presented to drive business value
   c. Roles and responsibilities inside a data organization
   d. Overview of the data landscape and the role of data teams

2. **Data Management**
   a. Data Quality
   b. Master Data Management

3. **Data Governance**
   a. Understanding the importance of data governance and metadata management
   b. Implementing data governance frameworks to ensure data quality, security, and privacy
   c. Understanding the ethical implications of data collection, use, and sharing
   d. Implementing data privacy practices to protect personal information
   e. Ensuring compliance with data privacy regulations and frameworks

4. **Data Architecture & Modeling**
   a. Creating conceptual, logical and physical data models
   b. Integrating data models with ETL/ELT processes, data architecture styles and their applications in various business contexts

5. **Data Engineering & Storage**
   a. Building data pipelines to collect, transform, and load data into data warehouses and data lakes
   b. Designing and implementing data lake solutions to support analytics and reporting
   c. Utilizing data lake technologies for data analysis and decision-making

6. **Business Intelligence, Analytics, & Data Science**
   a. Applying data analytics techniques to extract insights from data
   b. Utilizing machine learning to build predictive models and make data-driven decisions
   c. Integrating data analytics and machine learning into business processes

Section 2 – Building Data Organizations

7. **Building a Data Strategy**
   a. Defining the overall goals and direction of the data team, ensuring that its work aligns with the organization's broader business strategy.
   b. Understanding the organization's data needs, identifying potential opportunities for data-driven innovation, and developing a roadmap for achieving these goals.

8. **Developing Processes**
   a. The technical and organizational aspects of managing data projects and ensuring the effective use of data assets.
   b. Establishing data governance frameworks, implementing data quality controls, and developing data pipelines for collecting, transforming, and storing data.
   c. Selecting appropriate tools and vendors to implement the strategy

9. **Hiring Data Talent**
   a. Developing organizational charts and hiring needs based on the data strategy
   b. Recruiting, interviewing, and onboarding of data talent
   c. Emphasizing the importance of attracting and developing top data talent

Section 3 – Leading Data Organizations

10. **Leading Data Talent**
    a. Methods and skills required to retain top data talent
    b. Building a culture of data literacy and data-driven decision-making
    c. Leading data organizations effectively in an evolving data landscape
    d. Career Pathing for employees and leaders

11. **Effective Change Management**
    a. Understand the importance of change management in data-driven initiatives
    b. Identify the key stakeholders and their potential resistance to change
    c. Develop strategies for communicating and addressing concerns
    d. Create a change management plan to support the successful implementation of data initiatives

12. **Scaling Data Organizations**
    a. Growing and evolving data organizations to meet the organization's data needs
    b. Adopting agile methodologies to manage data projects effectively
    c. Managing the change associated with data-driven transformation

13. **Measuring the Value of Data & Insights**
    a. Quantifying the business value of data and data initiatives
    b. Establishing metrics to measure the impact of data on business outcomes
    c. Communicating the value of data to stakeholders

14. **The Future of Data Organizations**
    a. Innovation and Emerging Technologies
    b. Trends shaping the future of data organizations
    c. The role of AI and Machine Learning
    d. Ensuring the organization is prepared for the future

15. **Case Studies of Successful Data Organizations**
    a. Analyzing case studies of successful data organizations
    b. Identifying best practices and lessons learned from industry leaders
    c. Applying insights from case studies to improve the organization's data strategy

16. **Capstone Project**
    a. A company will be selected at the start of the class. Students will be expected to make strategic decisions for their company throughout the course and justify those decisions. A formal five-year data strategy recommendation will be due on the last day of class. This includes a budget, employee org chart, tool and vendor selection, security plan, etc. Following the "strategy, process, people" method as well as other considerations discussed in class.

COURSE RESOURCES (NOT REQUIRED)

- Adamson, J (2021) *Minding the Machines: Building and Leading Data Science and Analytics Teams*. John Wiley & Sons Inc.
- Carruthers, C & Jackson, P (2020) *The Chief Data Officer's Playbook*. Facet Publishing
- Henderson, D (2017) DAMA-BMBOK2 Data Management Body of Knowledge. Technics Publications

GENERAL ACADEMIC POLICIES

This syllabus contains the policies and expectations I have established for the Building and Leading Data Organizations course. Please read the entire syllabus carefully before continuing in this course. These policies and expectations are intended to create a productive learning atmosphere for all students. Unless you are prepared to abide by these policies and expectations, you risk losing the opportunity to participate further in the course.

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class.

I will conduct this class in an atmosphere of mutual respect. I encourage your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including mine, is similarly welcome. However, I will exercise my responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect I expect in this class, you will not be permitted to participate further.

All students and the instructor are expected to engage with each other respectfully. Unwelcome conduct directed toward another person based upon that person's actual or perceived race, actual or perceived gender, color, religion, age, national origin, ethnicity, disability, or veteran status, or for any other reason, may constitute a violation of University Policy 406, The Code of Student Responsibility. Any student suspected of engaging in such conduct will be referred to the Office of Student Conduct.

Attendance

Attendance: Students are expected to attend every class and remain in class for the duration of the session. Failure to attend class or arriving late may impact your ability to achieve course objectives, which could affect your course grade. An absence, excused or unexcused, does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written tasks. Any unexcused absence or excessive tardiness may result in a loss of participation points.

Class Absence(s): The instructor has the authority to excuse a student's class absence(s) and to grant a student an academic accommodation (turn in a late assignment, provide extra time on an assignment, reschedule an exam, etc.). However, under Academic Affairs Policy on Course Attendance and Participation, University-sanctioned events or activities are considered excused absences. A University-sanctioned event or activity is one in which a student formally represents the University to external constituencies in athletic or academic activities. This policy does not supersede individual program attendance and/or participation requirements that are aligned with accreditation or licensure. For more information and student responsibilities to account for such an absence, see provost.charlotte.edu/policies-procedures/academic-policies-and-procedures/course-attendance-and-participation.

Students are encouraged to work directly with their instructors regarding class absences for medical appointments, military/court orders, and/or personal and family emergencies, such as a death in the immediate family, where a student can provide an instructor with appropriate supporting documentation of the absence. The final decision for approval of absences and missed work or make-up work is determined by the instructor.

For absences due to religious observances, students must provide the instructor with written notice of requested accommodations no later than the 10th day of instruction for the semester. The instructor and the student should then discuss what a reasonable accommodation should be in the given case and then document this agreed-upon accommodation. University Policy 409 provides more details about this procedure. The Office of Civil Rights and Title IX is available as a resource if students or faculty have questions about the process.

The Office of Student Assistance and Support Services (SASS) can provide notification to faculty of emergency situations, when a student is unable to do so and when the office has been made aware of such emergencies. In such situations, the SASS office may also be able to assist with verification of such emergencies, once a student is able to return to classes. The SASS office does not provide verification of absences for car trouble, weather issues, personal activities, work, weddings, vacations, or University-sponsored events. Absences related to such activities should be discussed directly with the faculty member.

Should a student need assistance from the SASS office in verifying an emergency situation, they can submit an online request form (sass.charlotte.edu/services/absence-verification) and attach supporting documentation. Please note that students are not required to go through the SASS office at any time regarding absence verification, and the SASS office does not have the authority to excuse absences, allow for make-up work, or provide other academic accommodations.

In cases of absence due to pregnancy or parenting (pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions), students should contact the Office of Civil Rights and Title IX to obtain absence verification by completing the online form at http://bit.ly/332eaGd.

If I am late in arriving to class, you must wait a full 20 minutes after the start of class before you may leave without being counted absent, or you must follow any written instructions I may give you about my anticipated tardiness.

Hours

This 3-credit course requires three hours of classroom or direct faculty instruction and six hours of out-of-class student work each week for approximately 15 weeks. Out-of-class work may include but is not limited to: required reading, library research, written assignments, and studying for quizzes and exams

Copyright

My lectures and course materials, including presentations, tests, exams, outlines, and similar materials, are protected by copyright. I am the exclusive owner of copyright in those materials I create. I encourage you to take notes and make copies of course materials for your own

educational use. However, you may not, nor may you knowingly allow others to reproduce or distribute lecture notes and course materials publicly without my express written consent. This includes providing materials to commercial course material suppliers such as CourseHero, Chegg, and other similar services. Students who publicly distribute or display or help others publicly distribute or display copies or modified copies of an instructor's course materials may be in violation of University Policy 406, The Code of Student Responsibility, or University Policy 407, Code of Student Academic Integrity. Similarly, you own copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will request your written permission.

ACADEMIC ENTEGRITY

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code and on the Student Accountability & Conflict Resolution website. The Code is available from the Dean of Students Office or online at legal.charlotte.edu/policies/up-407. Additional resources are available on the Student Accountability & Conflict Resolution website.

Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work.

Violation of these syllabus policies may result in appropriate academic penalties, including reduction of grade in the relevant assignment, project, test, or exam. If violation of these syllabus policies also implicates the Code of Student Academic Integrity because of alleged academic misconduct, I will follow the process outlined in the Code to address such cases.

GRADING & ASSIGNMENTS

Grading and Assessment Criteria:

- 30% Assignments
- 10% Quizzes
- 20% Midterm
- 40% Final Project

Grading Scale for Course:

- A 90-100
- B 80-89
- C 70-79
- U 69 and below

Assignments: Assignments will be a mixture of written responses to articles given by the professor and in hands on exercises

Late Assignments, Test Grades, and Group Project Grades:

Late Assignments (assignments submitted past the due date) will receive a 50 so long as it is turned in prior to the final class date. Assignments never submitted or completed will receive a 0.

Tests cannot be retaken without written approval from the professor.

PROFESSOR CREDENTIALS

Steven Jordan is a Data Science and Analytics Leader at The Vanguard Group as well as an Adjunct Professor at The University of North Carolina at Charlotte. He is a passionate and seasoned data leader dedicated to the art and science of data-driven decision-making. With a career spanning over a decade in several industries and roles, he has honed his skills in building and leading high-performing data organizations. His journey has encompassed everything from recruitment and strategy development to fostering collaboration and training aspiring data professionals within organizations.

[LinkedIn Profile](#)

[Faculty Page](#)