



**UNIVERSITY OF
NORTHWESTERN**
— ST. PAUL —

OFFICE OF ADULT
& GRADUATE STUDIES

DAL5635

Trends in Data Analytics

FALL 2021

SYLLABUS

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University of Northwestern – St. Paul
Office of Adult & Graduate Studies
3003 Snelling Avenue North
St. Paul, Minnesota 55113
ags@unwsp.edu

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DAL5635 Trend in Data Analytics

University of Northwestern – St. Paul

COURSE DESCRIPTION

This course explores current and upcoming trends and rapid changes in data analysis and data science, such as the integration of Analytics and Artificial Intelligence (AI) and the ways analytical algorithms are transforming organizations and society. Students will examine potential disruptive or transformational opportunities in the application of analytics and discover new prospects in an industry, organization, or career field familiar to them. Familiarity with statistics, modeling techniques, and using business data, is recommended. (**NOTE:** This course requires a \$200 fee and is offered exclusively online)

Credits: 2

Prerequisites: C or better in BUA5620 Data Analysis and Decision Making

INSTRUCTOR INFORMATION

Please see “Contacting the Instructor” on the course site.

COURSE OUTCOMES

At the end of this course, a successful student will be able to

- CO-1. Examine the trends in analytics that are potential disruptors within industries, organizations, and will shape future careers.
- CO-2. Critique positions regarding ethical issues associated with the uses of Artificial Intelligence.
- CO-3. Analyze the impact and perceived impact of Artificial Intelligence on social freedoms.
- CO-4. Create an organizational impact report that surveys trends and social implications and proposes policies related to a specific organization.

MATERIALS

Required Textbooks and Materials

New York Times *ARTIFICIAL INTELLIGENCE* Health Care, Life, Business - 2020 NEW, ISBN-13: 978-1547852475.

This course uses the following textbooks through the library at no cost to students. A link to a digital copy of the textbook is provided on the course site.

Artificial Intelligence – HBR’s latest thinking of the future of business, 2019, Harvard Business School Publishing Corp., ISBN: 978-1-63369-789-8.

Required Tools

For this course, students will need access to Microsoft Office (available at no cost to students through the University of Northwestern-St. Paul), a PDF reader, and a standard internet browser. Please refer to the Tech Requirements found in the Technology Help section at the top of the course site for the full requirements.

GRADING POLICIES AND PROCEDURES

Course Grade Explanation

| Assignments | Grade Weight/Points |
|---------------------------------|---------------------|
| Discussion Forums (3 x 6%) | 18 |
| Weekly Quizzes (4x 4%) | 16 |
| Case Papers (4x 8%) | 32 |
| Capstone Essay | 34 |
| Topic Proposal (2%) | |
| Draft of Executive Summary (2%) | |
| Final Essay (30%) | |
| Total | 100 |

Grading Scale Percentages

| | | | | | | | |
|----|------|----|------|----|------|----|------|
| A | ≥ 93 | B | ≥ 83 | C | ≥ 73 | D | ≥ 63 |
| A- | ≥ 90 | B- | ≥ 80 | C- | ≥ 70 | D- | ≥ 60 |
| B+ | ≥ 87 | C+ | ≥ 77 | D+ | ≥ 67 | F | < 60 |

Late Work

All assignments are due as described in the course syllabus. Students are responsible for meeting assignment deadlines. Late assignments will be deducted one full letter grade (e.g., A to B) per day; late assignments will not be accepted for a grade beyond 3 calendar days past the original deadline. Forum discussion activities must be completed on time; late forum posts will not receive any credit. Students should contact the instructor via e-mail if an extenuating circumstance exists.

Feedback Expectations

Students should expect feedback for their submitted assignments within 5 days of the assignment due date or the time of their submission, whichever is later.

INSTITUTIONAL POLICIES AND SERVICES

Guidelines and Information

Students are responsible for policies and procedures found in the Office of Adult & Graduate Studies Catalog located on theROCK. These policies include the following:

- Deadlines for dropping or withdrawing
- Attendance
- Class cancellations
- Plagiarism and cheating
- Grading System
- Complaints, exceptions, and appeals

Instructors may have course-related expectations that further detail the policies and procedures outlined in the catalog. Any such expectations must be provided to students in writing (e.g., handout, course site posting) prior to or at the beginning of the class.

Traditional undergraduate students enrolled in A&GS courses are subject to the traditional undergraduate student handbook for all non-course-specific policies and procedures.

Academic Integrity

Members of the Northwestern community mutually commit to personal integrity and honesty. Students submitting work are expected to convey their own thoughts unless the source is cited appropriately. Plagiarism, cheating, and other forms of academic dishonesty violate ethical and intellectual principles.

In every course, students are required to view the Understanding Plagiarism video and complete the Understanding Plagiarism Quiz prior to completing any of the course content. These items are part of the course orientation.

Academic Achievement

UNW students requesting academic accommodations in association with the Americans with Disabilities Act (ADA) are directed to notify [Disability Services](#) to begin the application process. Academic Achievement also provides the following: [Writing and Subject Tutoring](#), advocating, transitional skill building, [Academic Coaching](#) (organization, time management, test taking, etc.).

Contact Academic Achievement for more information: AcademicAchievement@unwsp.edu • 651-628-3316 • N4012 (Revised 06/20)

Support Services

Links to support services are available found in the Student Services section at the top of the course site.

COURSE POLICIES AND INFORMATION

Email and Announcements

Students are responsible to regularly check their Northwestern student email and the announcements in the course site in order to receive updates and information.

Attendance

Due to the accelerated nature of the online curricula, students are expected to participate in all course activities. Students must contact the faculty member in advance or as soon as possible if unable to participate in all or part of the course activities for a given week because of a medical (which includes having to quarantine or isolate due to COVID-19 exposure or confirmed illness), family, or work-related emergency. Students should refer to their course syllabus and/or faculty member for specific requirements. Students who do not participate in course activities and fail to withdraw from the course will receive a failing “F” grade.

Submission Standards

All assignments, unless otherwise stated, must be submitted on the course site in Microsoft Word document format (.doc or .docx). For all assignments, use a standard readable font, double-spaced, etc.

Critical Response to Alternate Viewpoints

When students are reading or viewing course materials, they may encounter viewpoints, words, or images that their instructors would not use or endorse. Students should know that materials are chosen for their value in learning to read, write, and view critically, not because the materials are necessarily Christian.

Scholarly Research

Quality participation in this course requires contribution of scholarly research to class interactions. Students can engage in external research via the Berntsen Library website by performing a search of the 60+ databases available to students. Also available on the library site are multiple tutorials to educate learners in effective search techniques. Other credible journals/articles are options as well.

ASSIGNMENTS

See the course site for complete details on the assignments.

Discussion Forums (CO-1,2,3)

Learning in this course relies on developing shared understanding through social learning and dialogue. Join the ongoing course conversation by initially posting to each week's discussion forum based on the questions outlined in the forum descriptions.

Posts should be concise and conversational, stating what you think, why you think that, and what more you would like to know or understand. All posts are to be limited to 2-3 paragraphs highlighting relevant questions and materials and using appropriate academic language from the field.

Be intentional to support your claims in each post with at least two of the following, all three if possible:

- personal experience,
- course content, or
- credible external research.

Engage your classmates by replying to at least two peers' discussion threads with questions, suggestions, examples, or counterexamples that extend or challenge their ideas and stimulate further conversation. Respond to any replies to your initial post to utilize in your session report.

Initial participation in each forum is due by 11:59 p.m. CT on Day 4. Earlier, more frequent participation is recommended since others depend on your contributions.

For further grading information, see the Discussion Forum Rubric on the course site.

Weekly Quizzes (CO-1,2,3,4)

The goal of the quizzes are to ensure that students are familiar with the course material, applications, future interpretations, and examine the student's knowledge, skills, and abilities to process the materials in a variety of situations.

The quizzes will include true-false, multiple-choice and short essay questions, are open-note, and is limited to a 30-minute time period. To be successful, a student must carefully review of the course materials, have a good understanding of how the analytical science impacts society, industry, ethics and may have future implications and outcomes. All questions scoring weights are identified on the quiz.

Case Papers (CO-1,2,3,4)

In order to guide your reflection on various issues and questions related to course concepts, the Case Papers provide various hypothetical scenarios in which you will provide analysis and recommendations as if you were a consultant advising on the scenario. See the specific instructions for each paper to know what role you are meant to take and what information is sought from you.

Presentation Expectations

- 500-750 words (2-3 pages maximum, double-spaced). Please include a word count and limit the discussion to 750 words.
- Logical organization and clarity of writing; polished with regard to grammar, typos and spelling.
- Use of citations and bibliography for any referenced sources (any documentation style is fine).
 - Include a minimum of 3 resources cited in each Case Paper

For further grading information, see the Case Paper Rubric on the course site.

Capstone Essay (CO-1,2,3,4)

The Capstone Project is an opportunity for you to demonstrate the accumulated learning from this course into a proposal of a specific organizational response to a technology or analytical trend subject to the instructor's approval (such as applications of AI in your industry).

Guided by course materials and assignments in the previous weeks create your own unique contribution to the field of analytics in a professional setting with which you are familiar.

Reflect on the various course concepts regarding rapid changes to organizations due to recent applications of advanced analytical methods and algorithms (such as AI). Create a 7- to 8-page business proposal (not counting title page or references page) outlining a significant analytics or AI trend, its impact (economic, social, and ethical) on a specific organization, and recommended policies and actions that specific organization should take now to proactively address the trend.

Topic Proposal (Due Week 2)

Submit a 50- to 100-word Topic Proposal by the middle of Week 2, which includes the specific analytics or AI trend you will explore and the specific organization for which you will explore the impact and provide recommended policies and actions. Mention two or more areas of impact (benefits and risks) or ethical issues you anticipate related to your selected topic and organization. See the course site for a list of Capstone Essay Topic Ideas.

Executive Summary Draft (Due Week 3)

By the middle of Week 3, submit a 2-paragraph, or 250-word draft of your executive summary introducing your proposal's main thesis and outlining the primary supporting claims and recommendations for your selected organization that your full Capstone Essay will elaborate.

Final Report Format

Include the following sections with headings in your report, following APA style formatting:

1. **Title Page** –title, author's name, date (hide page number on title page)
2. **Executive Summary** – revise from Executive Summary draft previously submitted
3. **Introduction** –
 - Background of the selected organization: marketplace/industry context and history
 - Analysis of the need and potential benefit, risks related to the proposal (including risks of not adopting the proposal)
 - Any other clarifications necessary: definition of terms, conceptual or theoretical framework

4. **Review of Literature** – Summary of current situation regarding your selected trend
 - Industry use with proposed technology or analytical models.
 - Competing perspectives, reception, or criticism regarding the trend
5. **Methodology** – detailed outline on the proposed application or analytical model (include tables, charts, and diagrams to convey technical concepts or processes)
 - **Functionality:** How would the proposal work; what data would be used, how would data be sourced, how would users interact with the proposal,
 - **Impact:** potential benefits and risks of the proposal
 - Consider fiscal, social, and security impact
 - Consider setting, procedure, how to evaluate effectiveness, tables and charts to help clarify processes
 - **Ethical Guidelines** – Ethical/biblical assessment process, guidelines, and criteria
 - Include a decision tree or flowchart if possible
 - **Assessment** – How will you measure and monitor performance of the proposal?
 - scorecard measurement and key performance indicators that could monitor introduction, incorporation, and ongoing performance (such as assessing when it is necessary to modify or terminate an AI application)
6. **Conclusion: Recommended Policies and actions** – (maximum of 2 paragraphs)
 - Questions, implications, or problems that may arise, and means to address them
7. **References** – listing of all cited references in alphabetic order (minimum 7 cited resources)

For further grading information, see the Capstone Essay Rubric on the course site.

COURSE SCHEDULE

Format

This course is delivered in an online format that provides all learning activities online. The day the course starts is considered Day 1 of Week 1 for the course. For example, if a course begins on a Monday, then Day 1 is Monday, Day 4 is Thursday, and Day 7 is the following Sunday.

This course is an accelerated course. As a rule of thumb, students should expect to spend on average 17.5 hours on course work each week.

Due Dates

Unless otherwise noted, all assignments are to be submitted on the course site by 11:59 p.m. CT on Day 7 of each week. Please see the following schedule for details on when an assignment is due.

For any questions regarding these assignments, contact the instructor.

Orientation

- Read the Getting Started Page
- Participate in the Introductions Forum
- View and Complete Understanding Plagiarism Presentation and Quiz
- Complete Student Responsibilities Exercise

Week 1: Introduction to Understanding Artificial Intelligence

- Read the Weekly Overview
- Read NYT Artificial Intelligence, pages 4 – 37
- Read HBR Artificial Intelligence, Chapters 1 - 3
- Read Introducing C.S. Lewis to the business Ethics Student
- Read New Insights into Aristotle's Ethics
- View How we teach computers to understand pictures (18:02)

Due Day 4

- Participate initially in the Wk1 Discussion: C.S. Lewis and Aristotle's Ethics

Due Day 7

- Complete participation in the Wk1 Discussion: C.S. Lewis and Aristotle's Ethics
- Complete Wk1 Quiz
- Submit Wk1 Case Paper: Auto-Care Insurance

Week 2: Adopting AI: What is changing?

- Read the Weekly Overview
- Read NYT Artificial Intelligence, pages 38 - 58.
- Read HBR Artificial Intelligence, Chapters 4 - 7
- Read The Gartner Hype Cycle
- Read Creating the Symbiotic AI Workforce of the Future
- Read Top 10 Strategic Technology Trends For 2020
- View Inside The First Amazon Go Store (3:14)

Due Day 4

- Participate initially in the Wk2 Discussion: Hype Cycle
- Submit Capstone Essay: Topic Proposal

Due Day 7

- Complete participation in the Wk2 Discussion: Hype Cycle
- Complete Wk2 Quiz
- Submit Wk2 Case Paper: Gift Packages

Week 3: Analytics and the Future of Work

- Read the Weekly Overview
- Read NYT Artificial Intelligence, pages 58 - 89.
- Read HBR Artificial Intelligence, Chapters 8 - 9
- Read Artificial intelligence as a medical device in radiology
- Read Loneliness Kills: Can Autonomous Systems and Robotics Assist in Providing Solutions?
- View Google's Deep Mind Explained! (13:44)
- View (Optional) Artificial Intelligence and Collective Intelligence in Teams (11:07)

Due Day 4

- Participate initially in the Wk3 Discussion: Autonomous Medical Devices
- Submit Capstone Essay: Executive Summary Draft

Due Day 7

- Complete participation in the Wk3 Discussion: Autonomous Medical Devices
- Complete Wk3 Quiz
- Submit Wk3 Case Paper: Smart-AI

Week 4: The Analytics Driving the Future of Artificial Intelligence

- Read the Weekly Overview
- Read HBR Artificial Intelligence, Chapters 10 – 12
- Read The Jobs That Artificial Intelligence Will Create
- Listen to How AI Can Improve How We Work (19:33)
- View Your social media “likes” expose more than you think (9:44)

Due Day 7

- Complete Wk4 Quiz
- Submit Wk4 Case Paper: Artificial Intelligence Strategy
- Submit Capstone Essay: Final Essay