

DTAN301: Introduction to Data & Business Analytics

College of Graduate and Continuing Studies, Norwich University

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Course Description

This course covers data mining and related concepts by providing a theoretical and practical approach to business problem solving utilizing end to end business analytics processes as well as IT programming constructs to meet business goals of an organization. Topics include regression, classification, recommendation systems, text mining, and neural networks implementation using a hands on approach.

Course Overview

Data is a driving force in business decision making nowadays encompassing all different business domains including but not limited to healthcare, telecommunications, finance, supply chain, retail and the list goes on.

With the advent of the digital transformation wave sweeping all over the enterprise world, it has become increasingly important to streamline the processes of data usage for effective business decision making. This course covers data mining and related concepts by providing a theoretical and practical approach to business problem solving utilizing end to end business analytics processes as well as IT programming constructs to meet business goals of an organization.

Student Learning Outcomes

1. Develop an understanding of end to end data mining process to solve a business problem.
2. Explore data mining techniques including classification, regression, cluster analysis, text mining and neural networks.
3. Apply data mining techniques to different use cases in order to add value to the business using data.

Expectations

You are expected to be actively engaged throughout this course. This means you will participate in the course activities, such as reading the course material, viewing presentations, completing all exercises and actively participating in all required discussions. To successfully complete the course you must participate in all required course activities each week.

You can expect that your instructor will also be actively engaged in this course. Your instructor will facilitate all discussions, prompt deeper thinking and application through additional questions, and give feedback to either you or the entire class. This is a collegiate level engagement. It is not a transfer of knowledge, it is a guide for you to gain knowledge through the research, formulating an argument, debate, and supporting your conclusions with credible sources of facts. All citations must be done using APA style format.

Required Textbook and Readings

The textbook required for this course is the following:

- Shmueli, G., Bruce, P. C., Yahav, I., Patel, N. R., & Lichtendahl, K. C. (2017). *Data mining for business analytics concepts, techniques, and applications in R*. Hoboken, NJ, USA: Wiley.

For complete textbook information for this course, see the [Norwich University Booklist](#).

If you are interested, the following recommended texts provide an in-depth exploration of the course topic:

- Tan, P., Steinbach, M., Karpatne, A., & Kumar, V. (2019). *Introduction to data mining* (2nd ed.). Pearson. (ISBN 9780134080284)
- Leskovec, J., Rajaraman, A., Ullman, J. D. (2020). *Mining of massive data sets* (3rd ed.). Cambridge University Press. (ISBN 9781108476348)

See the [Required Readings](#) for all readings in this course.

Grades

The following table shows the graded assessment types contained within this course and the assigned weighting to determine the final course grade.

Graded Assessment Types	Points	Weights (%)
Discussions	200 (25 points each, weeks 1-8)	20%
Case Studies	200 (25 points each, weeks 1-8)	20%
Course Project	600 (75 points each, weeks 1-8)	60%
Total	1000	100

Letter grades for the course will be based on the following grading scale.

Letter Grade	Percentage	Grade Point
A	93-100%	4.0
A -	90-92.9%	3.7
B +	87-89.9%	3.3
B	83-86.9%	3.0
B -	80-82.9%	2.7
C +	77-79.9%	2.3
C	75-76.9%	2.0
C -	73-74.9%	1.7
D +	70-72.9%	1.3
D	67-69.9%	1.0
D-	63-66.9%	0.7
F	0-62.9%	0.0

For complete information on the Grading Policy, please refer to the [CGCS Online Catalog](#).

Course Assignments

There is a case study/exercise every week to apply the concepts learned on a weekly basis. In addition to it, there is an individual course project every week.

The individual course project is where you will take on the role of a professional data scientist, solving a real world business problem using data mining techniques for an organization of your choice. Each student's project will be unique and will facilitate creative thinking and problem solving processes to tackle the business problem chosen. Throughout each week of the course you will work on phases of the project, producing a key deliverable each week using a tool/programming language of your choice. The project will culminate in week 8 with a final report and presentation that will bring all of the deliverables together in explaining the business problem chosen and the desired outcome.

Late Work

Failure to submit assignments on time will result in a penalty. This penalty can be up to 5% of the maximum final grade point value of the assignment per day for each day late (for example, if an assignment's max value is 390 points, at most 20 points can be taken off each day it is late). The instructor does not have to impose the maximum. However, a penalty will be imposed unless the student has an excuse approved by the instructor.

Unless arrangements have been made beforehand, it is expected that assignments will be submitted on or before the due date.

Academic Honesty and the Norwich University Honor Code

A student must submit work that represents the student's own original analysis and writing. Copying another's work is not appropriate. If the student relies on the research or writing of others, the student must cite those sources. Words or ideas that require citations include, but are not limited to all hardcopy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable source. While students are encouraged to seek editing feedback, extensive revisions of one's work by another person is considered a lack of academic honesty, as it is representing another student's work as one's own.

For more information see:

[Academic Dishonesty](#)

[Academic Integrity](#)

[Norwich University Honor Code](#)

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Section 504 of the Rehabilitation Act of 1973/ADA

Please consult [Appendix H: University Policy - Section 504 of the Rehabilitation Act of 1973/Americans with Disabilities Act \(ADA\)](#) for instructions on obtaining an accommodation.

Disclaimer: Please note the specifics of this Course Syllabus are subject to change. Students are responsible for abiding by any such changes. Your instructor will notify you of any changes.

