Course Syllabus Part II
DSC 550 – Data Mining
3 Credit Hours

Course Resources

Course Text(s)
Mining of Massive Datasets. Cambridge University Press, 2019
Anand Rajaraman and Jeffrey D. Ullman.
ISBN: 9781108476348
Note: Free ebook can be found here

Data Mining and Machine Learning: Fundamental Concepts and Algorithms (2nd Edition)
Mohammed J. Zaki and Wagner Meira Jr
ISBN-13: 978-1108473989
ISBN-10: 1108473989

Required Resources
In this course, you will need to be able to:

- Access the Internet.
- Access Cyberactive.
- Access to Github
- Collaborate Online via Video and Voice.
- Collaborate while writing a single document.
- Submit a Word Document.
- Access to GitHub account.
- Python programming environment using PyCharm, Anaconda, and Jupyter Notebook.

Course Schedule

Week	Topic	Assigned Reading	Assignments
1	Introduction to Data Mining	Data Mining – Chapter 1-7 Mining of Massive Datasets – Chapter 1	• Written Assignment • 2 Discussion Responses • Reflection
2	Itemsets, Jaccard Similarity, Distance Measures	Data Mining – Chapters 8,9,12 Mining of Massive Datasets - Chapter 3	• Exercise • Reflection

© 2016 Bellevue University. Unless otherwise noted, the contents of this course, including the text and images and how they are arranged and presented, are owned by Bellevue University and protected by U.S. Copyright law. You may use this course content for your own personal, educational, informational and non-commercial use.

3	Pattern Mining, Mining Data Streams	Data Mining – Chapters 10,11 Mining of Massive Datasets - 4	• Written Assignment • 2 Discussion Responses • Reflection • Project Milestone 1: Project Proposal Due
4	Clustering – Representative-based, Hierarchical , Density-based	Data Mining – Chapters 13,14,15 Mining of Massive Datasets – Chapter 7	• Exercise • Reflection • Peer Review 1 Due
5	Frequent Itemsets, On-line Algorithms, Recommendation Systems	Data Mining – None Mining of Massive Datasets – Chapters 8,9	• Written Assignment • 2 Discussion Responses • Reflection • Peer Review 2 Due
6	Classification – Probabilistic, Decision Tree, Support-Vector Machines	Data Mining – Chapters 18,19,21 Mining of Massive Datasets – Chapter 12	• Exercise • Reflection • Peer Review 3 Due
7	Mining Social-Network Graphs	Data Mining – None Mining of Massive Datasets – Chapters 10	• Written Assignment • 2 Discussion Responses • Reflection • Project Milestone 2: Draft Project Paper (Optional)
8	Dimensionality Reduction, Neural Nets	Data Mining – None Mining of Massive Datasets – Chapter 11,13	• Exercise • Reflection • Peer Review 4 Due
9	Privacy in Data Mining	Data Mining – None Mining of Massive Datasets - None	• Written Assignment • 2 Discussion Responses • Reflection • Project Milestone 3: Virtual Project Presentation
10	Final project	Data Mining – None Mining of Massive Datasets - None	• Exercise • Reflection • Project • Peer Review 5 Due • Milestone 4: Final Project

© 2016 Bellevue University. Unless otherwise noted, the contents of this course, including the text and images and how they are arranged and presented, are owned by Bellevue University and protected by U.S. Copyright law. You may use this course content for your own personal, educational, informational and non-commercial use.

Course Activities

In this section of the syllabus, I will describe what we will be doing in each of the activities for each week. Specifically, I will be describing your deliverables – those items you need to submit at or before the deadline. You can find more detail on grading criteria for each category by viewing its detailed rubric.

Written Assignments
Bi-weekly, you will be assigned a written assignment aligning to the reading and topics, which is due to the discussion board. This post must be 250-500 words minimum and contain at least two credible sources. It should be written with an introduction, body and conclusion and cited references.

Discussion
Bi-weekly, you will be making 2 discussion posts in the specified forums. These two posts can either be responses to a fellow classmate or they can be something you found interesting in the reading/homework or something you didn't understand or agree with.

Each post must be a minimum of 250 words and contain at least one credible source. These responses should be "substantive" which means more than, "Neat!" or "Good job!" They should also not contain jargon or be a post that boils down to you reposting the same thing you're commenting on in a different way.

Exercises
Bi-weekly, you will be assigned an exercise or series of exercises based on the weekly topic to complete and submit to the assignment link. These are not group assignments to complete and should be done on your own. However, if you have questions about a specific exercise, you are encouraged to use the discussion board to discuss with your classmates, without completing the assignment together.

Peer Code Reviews
You will have 5 peer code reviews to complete for the course. These code reviews utilize a rubric to evaluate a classmates' code. The 5 code reviews will be due throughout the course.

Weekly Reflection
Each week, you will be asked to provide your thoughts and comments in regards to the material covered for the week. Also include things you are struggling with any of the concepts or material and/or any suggestions for the course. Reflections should be a minimum of one page in length.

Term Project
This course has one major programming assignment. In this project, the students create a fully functional Python program that applies knowledge and skills from previous lessons.

Grade and Point Breakdown

Component:	Percentage	Point Value	Number of Times	Total
Discussion	15%	36 Points	2 times bi-Weekly	360

© 2016 Bellevue University. Unless otherwise noted, the contents of this course, including the text and images and how they are arranged and presented, are owned by Bellevue University and protected by U.S. Copyright law. You may use this course content for your own personal, educational, informational and non-commercial use.

Written Assignment	10%	48 Points	5 Submissions bi-weekly	240
Exercises	35%	168 Points	5 submissions bi-weekly	840
Peer Code Reviews	10%	48 Points	5 Peer Code Reviews	240
Term Project	25%	200 Points	3 milestones for Term	600
Reflections	5%	12 Points	1 Submission per Week for 10 Weeks	120
			Total Points	2400

Late Work

Late work is not accepted unless arrangements are made with the instructor for very special, unavoidable circumstances. If you do not alert the professor before or shortly after something that will make you late, the chances of special arrangements are much lower. If in doubt, please email as soon as possible.

Participation

Students are expected to login often and contribute to the class on a regular basis, including posting to the discussion board, submitting assignments, and participating in group activities as required. If you have specific participation requirements related to your educational funding or student status, you are expected to monitor your own participation to ensure you are in compliance with those requirements.

Expectations for Students

- Students should expect to spend approximately 10-15 hours per week to complete the activities and assignments in this course.
- Students will log in as often as needed to complete their assignments and progress through the course.
- Students will treat their classmates and the instructor with respect and courtesy.
- Students are responsible for keeping current with the reading assignments and coming to class prepared to discuss the work assigned.
- Students are responsible for knowing what assignments are due and when.
- Students will submit only their own work and will not commit plagiarism or other acts of academic dishonesty.
- Students will contact the instructor as soon as personal problems arise that may affect the student's ability to complete assignments on time.

Expectations for Faculty

- The instructor will treat all students with respect and courtesy.
- The instructor will make grading criteria clear and follow the criteria scrupulously in evaluating student work.

© 2016 Bellevue University. Unless otherwise noted, the contents of this course, including the text and images and how they are arranged and presented, are owned by Bellevue University and protected by U.S. Copyright law. You may use this course content for your own personal, educational, informational and non-commercial use.

- The instructor will provide feedback about student work within 6 days of due dates (or 24 hours prior to the next due date)—feedback that helps the student learn and improve.
- The instructor will respond to all student messages within 48 hours.

© 2016 Bellevue University. Unless otherwise noted, the contents of this course, including the text and images and how they are arranged and presented, are owned by Bellevue University and protected by U.S. Copyright law. You may use this course content for your own personal, educational, informational and non-commercial use.