Course Syllabus Part II
DSC 630 Predictive Analytics
3 Credit Hours

Course Resources

Course Text:
Applied Predictive Analytics: Principles and Techniques for the Professional Data Analyst
David Abbott
ISBN: 978-1118727966

Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die
Eric Siegel
January 20, 2016
ISBN: 9781119145677

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

- Access the Internet.
- Access Cyberactive.
- Collaborate Online via Video and Voice.
- Collaborate while writing a single document.
- Submit a Word Document.
- Use Microsoft PowerPoint or Adobe Illustrator to create a presentation.

Supplemental (not required) Resources:
An Introduction to Statistical Learning with Applications in R
Gareth James
ISBN: 9781461471370, 1461471370

Course Schedule

Week	Topic	Discussion /Participat -ion	Milestone	Assign-ments	Peer Review	Applied Predictive Analytics Chapter	Predictive Analytics Chapter
1	Introduction to Predictive Analytics	X	X	X		1 & 2	Intro
2	Understanding Data		X		X	3	1
3	Data Preparation and Descriptive Modeling	X		X	X	4-6	3-4
4	Case Study	X	X	X		13	2
5	Model Interpretation and Predictive Modeling	X		X	X	7-8	5

6	Model Assessment	X			X	9	
7	Model Ensembles	X	X	X		10	6
8	Text Mining	X			X	11	7
9	Case Study	X		X		12	
10	Final Projects	X	X		X		

Course Activities

Discussion

Every week you will be required to make 10 posts via an online platform. The goal is to simulate real world discussion and participation – there will not be formal posts required or required topics to discuss. There may be optional topics provided to start discussion, however, sharing information, troubleshooting, asking questions/feedback, etc. will be the primary focus for discussion/participation. Discussion/Participation will be graded as follows:

# of Posts	Percentage
0	0%
5	50%
10	100%

Assignments

There will be 6 homework assignments throughout the duration of the course. The assignments are intended to provide students with the opportunity to practice analyzing datasets, and evaluating and interpreting data. Late assignments will be accepted with 10% deducted from the value of the assignment each day the homework is turned in late. Students may consult with each other on the homework but each student must write up (and code up if necessary) his or her own assignment.

Course Project

Project Milestones

Week 1: Milestone 1 Due (Team Information/Communication Plan)
Week 2: Milestone 2 Due (Data Selection and Project Proposal) & Peer Review
Week 3: Peer Review
Week 4: Milestone 3 Due (Preliminary Analysis)
Week 5: Peer Review
Week 6: Peer Review
Week 7: Milestone 4 Due (Project Presentation & Status)
Week 8: Peer Review
Week 10: Milestone 5 Due (Final project paper and presentation) & Peer Review (Due Saturday!)

The project will be done in teams of maximum 3 students. Students are also welcomed to work in pairs or even individually. For students working in teams, it is expected that all team members will contribute equally and that everyone will take the opportunity to learn from each other. Students will identify a

business problem to address through predictive analytics. The goal is to select appropriate models and model specifications, and apply the respective methods to enhance data-driven decision making related to the business problem. Students will identify potential use of predictive analytics, formulate the problem, identify the right sources of data, analyze data, and prescribe actions to improve not only the process of decision making but also the outcome of decisions.

The final paper should be 8-10 pages in length not including figures and tables. Start with a one paragraph abstract, followed by an intro/background of the problem, methods, results, discussion/conclusion and acknowledgments, references, in that order. Clearly state the problem you have chosen to investigate. List the resources you used to come up with the project and reference all sources you used to complete the project. Margins should be 1-inch top, bottom, left, and right. Use any font that is suitable for a professional paper and use 12-point type.

Course Presentation
Each group should prepare and deliver a final presentation on their data analytics project. The final presentation should reflect a thoughtful synthesis and use of the concepts and methods taught throughout the course. Presentations should be 15-20 minutes in length. The presentation will be recorded and submitted through blackboard.

Peer Evaluation
The purpose of the peer evaluation is to identify group members' roles in and contribution to all group assignments. Students will be asked to rate group members' contributions to the group project.

Grade Breakdown/Criteria

Grade Component	Percentage	Point Value	Number of Times	Total
Discussion/Participation	20	24	10 Posts per Week for 10 Weeks	240
Term Project Milestones Final Report	40	Varies	4 Milestones worth 50 points each, 1 Final Submission worth 280 points	480
Assignments	30	60	6 Per Term	360
Peer Evaluations	10	20	6 Per Term	120
			Total Points	1200

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 required to login often and contribute to the class on a regular basis, including posting in the online platform, 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.
- 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.
