APS1070 - Foundations of Data Analytics and Machine Learning - Winter 2021
Tentative Course Schedule - *Contents of this document are subject to change*
All dates and times are based on Toronto time zone.

	Section	Date		Time	Topics	
Week 1	101 (Colic)	Tuesday	11-Jan	12:00-15:00	**Introduction**	Computer Science and Programming
	102 (Aref)	Wednesday	12-Jan	9:00-12:00	Course Overview, K-Nearest Neighbours, Machine Learning Overview	
	101 (Colic)	Thursday	13-Jan	13:00-15:00	Tutorial 0 - Python Basics and GitHub	
	102 (Aref)	Friday	14-Jan	9:00-11:00		
Week 2	Both	*Reading assignment 1 Due*		*17-Jan*	*at 21:00*	
	101 (Colic)	Tuesday	18-Jan	12:00-15:00	**Algorithms and Data Structures**	
	102 (Aref)	Wednesday	19-Jan	9:00-12:00	Analysis of Algorithms, Asymptotic Notation, Sorting, Dictionary ADT, Hashing	
	101 (Colic)	Thursday	20-Jan	13:00-15:00	Tutorial 1 - Basic Data Science	
	102 (Aref)	Friday	21-Jan	9:00-11:00		
Week 3	Both	*Reading assignment 2 Due*		*24-Jan*	*at 21:00*	
	101 (Colic)	Tuesday	25-Jan	12:00-15:00	**Data Exploration, Making Predictions, Foundations of Learning**	
	102 (Aref)	Wednesday	26-Jan	9:00-12:00	End-to-End Machine Learning, Data Wrangling, Visualization, Decisions Trees	
	101 (Colic)	Thursday	27-Jan	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	28-Jan	9:00-11:00		
Week 4	Both	*Reading assignment 3 Due*		*31-Jan*	*at 21:00*	Mathematical Foundations
	101 (Colic)	Tuesday	01-Feb	12:00-15:00	**Measuring Uncertainty and Evaluating Performance**	
	102 (Aref)	Wednesday	02-Feb	9:00-12:00	K-Means Clustering, Probability Theory, Multivariate Gaussians, Performance	
	101 (Colic)	Thursday	03-Feb	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	04-Feb	9:00-11:00		
	Both	*Project 1 Due*		*04-Feb*	*at 23:00*	
Week 5	Both	*Reading assignment 4 Due*		*07-Feb*	*at 21:00*	
	101 (Colic)	Tuesday	08-Feb	12:00-15:00	**Mathematical Foundation of Data Processing**	
	102 (Aref)	Wednesday	09-Feb	9:00-12:00	Linear Algebra, Analytical Geometry and Transformations, Data Augmentation	
	101 (Colic)	Thursday	10-Feb	13:00-15:00	Tutorial 2 - Anomaly Detection	
	102 (Aref)	Friday	11-Feb	9:00-11:00		
Week 6	No lectures, no office hours				**Midterm Assessment: Feb 15 at 9:00 to Feb 16 at 15:00 (limited 2-hour window to start the exam and submit it)**	
	101 (Colic)	Thursday	17-Feb	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	18-Feb	9:00-11:00		
Reading Week	101 (Colic)	Tuesday	22-Feb	12:00-15:00	No lectures and office hours during the reading week.	
	102 (Aref)	Wednesday	23-Feb	9:00-12:00		
	101 (Colic)	Thursday	24-Feb	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	25-Feb	9:00-11:00		
Week 7	Both	*Project 2 Due*		*28-Feb*	*at 23:00*	
	Both	*Reading assignment 5 Due*		*28-Feb*	*at 21:00*	
	101 (Colic)	Tuesday	01-Mar	12:00-15:00	**Dimensionty Reduction Part 1**	
	102 (Aref)	Wednesday	02-Mar	9:00-12:00	Projection, Matrix Decomposition, Eigenvectors, Principal Component Analysis	
	101 (Colic)	Thursday	03-Mar	13:00-15:00	Tutorial 3 - PCA	
	102 (Aref)	Friday	04-Mar	9:00-11:00		
Week 8	Both	*Reading assignment 6 Due*		*07-Mar*	*at 21:00*	
	101 (Colic)	Tuesday	08-Mar	12:00-15:00	**Dimensionty Reduction Part 2**	
	102 (Aref)	Wednesday	09-Mar	9:00-12:00	Singular Value Decomposition, Feature Interpretation, Vector Calculus	
	101 (Colic)	Thursday	10-Mar	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	11-Mar	9:00-11:00		
	Both	*Project 3 Due*		*11-Mar*	*at 23:00*	
Week 9	Both	*Reading assignment 7 Due*		*14-Mar*	*at 21:00*	Neural Networks
	101 (Colic)	Tuesday	15-Mar	12:00-15:00	**Generalized Linear Model**	
	102 (Aref)	Wednesday	16-Mar	9:00-12:00	Monte Carlo, Linear Regression, Gradient Descent, Polynomial Regression, Regularization	
	101 (Colic)	Thursday	17-Mar	13:00-15:00	Tutorial 4 - Linear Regression	
	102 (Aref)	Friday	18-Mar	9:00-11:00		
Week 10	Both	*Reading assignment 8 Due*		*21-Mar*	*at 21:00*	
	101 (Colic)	Tuesday	22-Mar	12:00-15:00	**Artificial Neural Networks**	
	102 (Aref)	Wednesday	23-Mar	9:00-12:00	Continuous Optimization, Convexity, Classification, Perceptron, Neural Networks	
	101 (Colic)	Thursday	24-Mar	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	25-Mar	9:00-11:00		
Week 11	101 (Colic)	Tuesday	29-Mar	12:00-15:00	**Deep Learning**	
	102 (Aref)	Wednesday	30-Mar	9:00-12:00	Backward propagation, Deep Learning, Transfer Learning, Discrete Optimization	
	101 (Colic)	Thursday	31-Mar	13:00-15:00	Q/A Support Session	
	102 (Aref)	Friday	01-Apr	9:00-11:00		
	Both	*Project 4 Due*		*01-Apr*	*at 23:00*	
Week 12	101 (Colic)	Tuesday	05-Apr	12:00-15:00	**Course Review**	Review
	102 (Aref)	Wednesday	06-Apr	9:00-12:00		
	101 (Colic)	Thursday	07-Apr	13:00-15:00	No lab sessions on week 12.	
	102 (Aref)	Friday	08-Apr	9:00-11:00		
Week 13	No lectures, no office hours, no lab sessions				**Final Assessment: Apr 12 at 9:00 to Apr 13 at 15:00 (limited 3-hour window to start the exam and submit it)**	