IS 4834 – Business Intelligence and Analytics (2019/20 Sem A)
The City University of Hong Kong

*Time & classroom: 17:00 – 18:50 Instructor: Junming LIU, Wednesday LI 2614
*Time & Tutorial L01: 12:00 – 12:50 TA: Ye Han, Wednesday LAU-7-209
*Time & Tutorial L02: 10:00 – 10:50 Instructor: Junming LIU, Wednesday LAU-7-209

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*COURSE OBJECTIVES

Nowadays, the rapid development in social media, smart devices, and the Internet of Things (IoT) resulted in an explosion of data available for analysis. The unprecedented abundance of data gives rise to both value creation opportunities and technical challenges.

Together with other related courses, in this course, students will learn to appreciate the superior value of data through analytics in different applications, such as in finance, marketing, etc. To handle the large amount data for analysis, new technology solutions have been proposed, implemented and improved. This course introduces the practical skills to process and analyze data, which can facilitate more innovative data analysis and decision making applications.

The course will learn to use SAS and Python packages in data collection, preparation, and preliminary modelling and visualization. The course will also study issues related to Big Data. Upon successful completion of this course, students should be able to better facilitate data-related projects/applications and generate business value.

MATERIALS

Recommended Book:

1. *Introduction to Data Mining*, Pearson, 2019. Pang-Ning Tan; Michael Steinbach; Anuj Karpatne; Vipin Kumar. ISBN-13: 978-0133128901
   eTextbook purchase link
2. *Business Intelligence, Analytics, and Data Science: A Managerial Perspective*, Pearson, 2018, ISBN-13: 978-0134633282.
   eTextbook purchase link

CLASSROOM POLICIES

Please use only **English** in the classroom and for class related issues. Thanks.
Please do not disturb other people in the classroom (e.g., turn off your cell phones, beepers, & pagers; be on time to the lecture; hold your voice in discussion, etc). Thanks.

GRADING POLICY

Class Participation (20%):
You are expected to attend all classes. I will take attendance. Besides, you participation will be received in a variety of ways, such as answering questions, presentation, quiz, etc.

Tutorial (30%):
5 tutorial projects will be selected for evaluation, 6% each.

Assignments (20%):
You effort in laboratory exercises, homework assignments will be considered in final grading. All exercises and assignment are expected to be handed in on time. Late submissions will only receive partial credits (late more than 1 week will receive zero credit).

Explorative Project (30%):
Students will be invited form small groups (sized 4-5 members) to conduct a projects that applies concepts and techniques learned in the course to investigate real-life problems. They are expected to illustrate the ability to integrate multiple techniques in solving the problem and able to explain the project properly to the classmates.

COURSE SCHEDULE (*TENTATIVE*)

Week	Lecture	Topics	Project	Topics
1	Sep 2	Course Overview		
2	Sep 9	Data and Data Visualization;	Sep 9	SAS Setup
3	Sep 16	Data Mining Process	Sep 16	Data visualization
4	Sep 23	Feature Engineering	Sep 23	Data Exploration
5	Sep 30	Predictive analytics	Sep 30	Feature Selection
6	Oct 7	Classification	Oct 07	Linear Regression
7	Oct 14	Decision Tree	Oct 14	Logistics Regression
8	Oct 21	Clustering	Oct 21	Decision Tree
9	Oct 28	Association Rule	Oct 28	Clustering
10	Nov 04	Model evaluation and selection	Nov 4	Association Rule
11	Nov 11	From problem to solution: a complete case study	Nov 11	Model Selection
12	Nov 18	Introduction to Advanced Data Mining	Nov 18	
13	Nov 25	Course summary and reveiw	Nov 25	
Dec 7~19		Final Exam		

OTHER IMPROTANT DAYS

Course add/drop deadline	Week 1
Late drop (other than exceptional case)	Week 5
Online Learning Feedback Questionnaire (TLQ)	Week 11 to Week 13

HINTS FOR SUCCESS

Review materials every week
Ask me **whenever** you have questions, do not wait to the end
Get your hands dirty -- on the keyboard
Develop a sense of "solving problems using programming"
Try to combine your business knowledge into our projects. The more thinking, the better.

ACADEMIC DISHONESTY

Academic Dishonesty occurs whenever any action or attempted action is pursued that creates an unfair academic advantage or disadvantage for you and/or any member or members of the academic community. All forms of academic dishonesty are subject to sanctions under the Code of Academic Integrity. Sanctions include: written warning, reduction in grade for work involved, disciplinary probation, loss of credit for work involved, failing grade in the course, suspension, and/or expulsion. Various forms of academic dishonesty include, but are not limited to cheating, fabrication, facilitating academic dishonesty, and/or plagiarism.

I assume that you have complete integrity in all your class efforts. Violations of the University's Honor Code will be taken extremely seriously, and they will be addressed promptly according to the established procedures of the City University of Hong Kong. The Code of Academic Honesty can be found at http://www.ap.cityu.edu.hk/safety/academic-honesty.pdf.

ACCOMMODATIONS

If you have an authorized disability and need accommodation, please see me in the first couple of class. Should an accident occur during the semester, please let me know as soon as possible.

Disclaimer:

By continuing with the class, you are assumed to have read and fully agree with the above terms. If you have any problems/questions with the terms, please see the lecturer before class adding/dropping deadline.