THE UNIVERSITY OF HONG KONG
HKU BUSINESS SCHOOL

IIMT2641- Introduction to Business Analytics

GENERAL INFORMATION

Instructor: Dr. Feng TIAN
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Consultation times: TBA

Tutor: TBA
Email: TBA

Pre-requisites: None
Co-requisites: None
Mutually exclusive: None

Course Website: Moodle

The following programming languages are used in this course: Excel and R

COURSE DESCRIPTION

Big data has fundamentally reshaped business, industry, and society. In this course, you will learn how to use data and analytics to give an edge to your career and your life. We will examine real world examples of how analytics have been used to significantly improve business decisions. Through these examples, you will learn the following analytics methods: decision trees, linear regression, logistic regression, classification trees, clustering, and optimization. We will be using the statistical software R to build models and work with data.

COURSE OBJECTIVES

1. Obtain solid understanding about common analytics methods in business situations
2. Formulate the right business problem and identify suitable analytics methods
3. Carry out the analysis using software tools
4. Present analysis results in business relevant language

PROGRAMME LEARNING OUTCOMES

PLO1: Acquisition and internalization of knowledge of the programme discipline

PLO2: Application and integration of knowledge

PLO3: Inculcating professionalism

PLO4: Developing global outlook

PLO5: Mastering communication skills

PLO6: Cultivating leadership

COURSE LEARNING OUTCOMES

Course Learning Outcomes	Aligned Programme Learning Outcomes
CLO1: Clearly identify and formulate the relevant business problem	PLO1
CLO2: Select and use effective methods to address the business problem	PLO2
CLO3: Use software tools to provide solution to the issue at hand	PLO2, 4
CLO4: Communicate the solution effectively	PLO3, 5, 6

COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities	Expected contact hour	Study Load (% of study)
T&L1. Interactive lectures	36	30%
T&L2. Tutorials	12	10%
T&L3. Self-study	42	35%
T&L4. Group project	30	25%
Total	120	100%

Assessment Methods	Brief Description (Optional)	Weight	Aligned Course Learning Outcomes
A1. Participation	Attendance & discussions	10%	CLO1, 2, 3, 4
A2. Written assignments	Effort and accuracy	30%	CLO1, 2, 3, 4
A3. Group project (report and presentation)	Effort and accuracy	30%	CLO1, 2, 3, 4
A4. Final exam	Effort and accuracy	30%	CLO1, 2, 3, 4
	Total	100%	

STANDARDS FOR ASSESSMENT

Course Grade Descriptors

A+, A, A-	➢ Demonstrate a strong understanding of all relevant knowledge ➢ Handling questions professionally ➢ High participation in discussions ➢ Present arguments that have an element of originality ➢ Achieve a standard of excellent performance in the exams with very accurate computation and very good analytical and problem solving skills ➢ Excellent performance in assignments
B+, B, B-	➢ Demonstrate a good understanding of all relevant knowledge ➢ Handling questions in a logical way ➢ Good participation in discussions ➢ Present arguments that go beyond the lecture and textbook ➢ Achieve a standard of good performance in the exams with accurate computation and good analytical and problem solving skills ➢ Good performance in assignments
C+, C, C-	➢ Demonstrate a basic understanding of the concepts involved ➢ Fairly address questions as set ➢ Some participation in discussions ➢ Present arguments in a well-structure manner ➢ Meet a standard of acceptable performance in the exams with reasonably accurate computation and acceptable analytical and problem solving skills ➢ Acceptable performance in assignments
D+, D	➢ Demonstrate a minimum understanding of the concepts involved ➢ Barely address questions as set ➢ Minimal or no participation in discussions ➢ Present arguments in a marginally acceptable manner ➢ Meet a standard of marginally acceptable performance in the exams with some errors in computation and barely adequate analytical and problem solving skills ➢ Marginally acceptable performance in assignments
F	➢ Demonstrate a poor understanding of the concepts involved ➢ Unable or unwilling to handle questions ➢ Minimal or no participation in discussions ➢ Present arguments poorly ➢ Fail to meet a standard of passing the exams with major errors in computation and inadequate analytical and problem solving skills ➢ Poorly performance in assignments

Assessment Rubrics for Participation

A+, A, A-	➢ High participation in discussions ➢ Always attend in-class discussions ➢ Demonstrate a strong understanding of all relevant knowledge ➢ Handling questions professionally ➢ Present arguments that have an element of originality ➢ Respect others and follow the class rules (no chatting and do not use cell phone)
B+, B, B-	➢ Good participation in discussions ➢ Often attend in-class discussions ➢ Demonstrate a good understanding of all relevant knowledge ➢ Handling questions in a logical way ➢ Present arguments that go beyond the lecture and textbook ➢ Respect others and follow the class rules (no chatting and do not use cell phone)
C+, C, C-	➢ Some participation in discussions ➢ Sometimes attend in-class discussions ➢ Demonstrate a basic understanding of the concepts involved ➢ Fairly address questions as set ➢ Present arguments in a well-structure manner ➢ Respect others and follow the class rules (no chatting and do not use cell phone)
D+, D	➢ Minimal or no participation in discussions ➢ Rarely attend in-class discussions ➢ Demonstrate a minimum understanding of the concepts involved ➢ Barely address questions as set ➢ Present arguments in a marginally acceptable manner ➢ Respect others and follow the class rules (no chatting and do not use cell phone)
F	➢ Minimal or no participation in discussions ➢ Almost never attend in-class discussions ➢ Demonstrate a poor understanding of the concepts involved ➢ Unable or unwilling to handle questions ➢ Present arguments poorly ➢ Behave poorly in class (often chatting with others, using cell phones, or being late)
Assessment Rubrics for Assignments and the Exam	
A+, A, A-	➢ Demonstrate a strong understanding of all relevant knowledge ➢ Present arguments that have an element of originality ➢ Achieve a standard of excellent performance in the assessments with very accurate computation and very good analytical and problem solving skills
B+, B, B-	➢ Demonstrate a good understanding of all relevant knowledge ➢ Present arguments that go beyond the lecture and textbook ➢ Achieve a standard of good performance in the assessments with accurate computation and good analytical and problem solving skills
C+, C, C-	➢ Demonstrate a basic understanding of the concepts involved ➢ Present arguments in a well-structure manner ➢ Meet a standard of acceptable performance in the assessments with reasonably accurate computation and acceptable analytical and problem solving skills
D+, D	➢ Demonstrate a minimum understanding of the concepts involved ➢ Present arguments in a marginally acceptable manner ➢ Meet a standard of marginally acceptable performance in the assessments with some errors in computation and barely adequate analytical and problem solving skills
F	➢ Demonstrate a poor understanding of the concepts involved ➢ Present arguments poorly ➢ Fail to meet a standard of passing the assessments with major errors in computation and inadequate analytical and problem solving skills
Assessment Rubrics for Project Report	
A+, A, A-	Provides persuasive original, insightful and well-reasoned recommendations that clearly follow from the analysis and effectively address the key issue
B+, B, B-	Provides well-reasoned recommendations that follow from the analysis and address the key issue
C+, C, C-	Conducts adequate analysis and provides reasoned recommendations that address the key issue

D+, D	Offers weak recommendations, which do not address key issue
F	Fails to identify key issue and/or provide adequate analysis and/or recommendations

Assessment Rubrics for Project Presentation

A+, A, A-	Delivers a persuasive, engaging and impactful presentation, and provides well- reasoned answers to address all questions raised
B+, B, B-	Delivers an engaging presentation and provides well-reasoned answers to address all questions raised
C+, C, C-	Delivers an adequate presentation and provides answers to address questions raised
D+, D	Weak presentation and non-persuasive answers to questions raised
F	Failure to present appropriately and/or provide adequate answers to questions raised

COURSE CONTENT AND TENTATIVE TEACHING SCHEDULE

Week	Date	Topic	Case
1	1 Sep	Analytics vs Human Experts	Statistical Wine Tasting
2	8 Sep	Sports Analytics	Moneyball
3	15 Sep	Healthcare Analytics	Healthcare Quality Assessment
4	22 Sep	Medical Analytics	Framingham Heart Study
5	29 Sep	Machine Learning in Legal Studies	Court Ruling Prediction
6	6 Oct	Social Media Analytics	Sentiment Analysis on Twitter
7	NO CLASS DAY – Reading Week		
8	20 Oct	Data Mining in e-Commerce	Movie Recommendation on Netflix
9	27 Oct	Revenue Management	Airfare Pricing of American Airline
10	3 Nov	Digital Marketing	Google AdWords
11	10 Nov	Operations Analytics	Supply Chain Management
12	17 Nov	Prescriptive Analytics in e-Commerce	Matching on Online Dating Sites
13	24 Nov	Project Presentations	

REQUIRED/RECOMMENDED READINGS & ONLINE MATERIALS (e.g. journals, textbooks, website addresses etc.)

The Analytics Edge. Dimitris Bertsimas, Allison K. O'Hair, and William R. Pulleyblank. Dynamic Ideas LLC., 2016.

MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE

- Conducting mid-term survey in additional to SETL around the end of the semester
- Email communication

COURSE POLICY (e.g. plagiarism, academic honesty, attendance, etc.)

1. Academic dishonesty includes cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Academic dishonesty also includes, but is not limited to, providing false or misleading information to receive a postponement or an extension on an exam or other assignment.
2. An orderly learning environment is extremely important for this course. Disruptive behaviors are inconsiderate to other students as well as to the instructor, and are absolutely unacceptable. Talking during lectures, arriving to class late, and any other disruptions of mobile devices are not allowed; students who are responsible for any of these actions will be subject to academic penalty and will be asked to leave the classroom.

ADDITIONAL COURSE INFORMATION (e.g. e-learning platforms & materials, penalty for late assignments, etc.)

1. Lecture notes and self-learning materials will be uploaded on Moodle.
2. No late assignment submission will be accepted.
3. The instructor reserves all the rights to make necessary changes to the syllabus. If so, the changes will be announced as soon as possible.