Form 2B

City University of Hong Kong

Information on a Course
offered by Department of Information Systems
with effect from Semester B in 2012 / 2013

Part I

Course Title:	Business Data Analytics
Course Code:	IS6400
Course Duration:	One Semester
No. of Credit Units:	3
Level:	P6
Medium of Instruction:	English
Prerequisites:	Basic knowledge on statistics
Precursors:	Nil
Equivalent Courses:	Nil
Exclusive Courses:	Nil

Part II

1. Course Aims:

The course aims to teach students the process, models, and tools for data analysis and analytics in business, such as in finance, marketing, etc. The course will teach students the practical skills to employ software packages (such as spreadsheets and statistics software) and apply necessary extensions (such as with add-in tools, macros, scripts, queries, etc.) to analytical framework and tackle business data analysis problems for corporation manage and decision making. On completion of the course students should be able to

(a) understand the target and requirements of a selection of critical business data analysis problems;
(b) manage the statistical techniques/models for data analytics;
(c) implement the models into a software packages, such as spreadsheet, and adapt the models through add-ins and scripting/programming capabilities (such as using macro and VBA); and
(d) analyze and interpret the outputs of models to support decision making in finance, marketing, accounting, etc.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting (if applicable)
1.	Describe the target and requirements for a spectrum of business data analysis problems in finance, marketing, etc.	2
2.	Develop the ability to employ scripting and database tools to retrieve data and use spreadsheet and statistical software to discover patterns in data to address the selected problems.	3
3.	Creatively apply and adapt the introduced modeling techniques to propose original findings for practical organizational data analysis problems.	3
4.	Creatively communicate analytical procedure and results effectively in presentations with oral, written and electronic formats.	1

(3: Relatively most focused ILOs; 2: moderately focused ILOs; 1: less focused ILOs)

3. Teaching and Learning Activities (TLAs)

(designed to facilitate students' achievement of the CILOs)

Indicative of likely activities and tasks students will undertake to learn in this course. Final details will be provided to students in their first week of attendance in this course.

Lecture: 13 hours
Laboratory/Tutorial: 26 hours

TLA1. Lecture: Explain the concepts, applications, and implications of a selection of business data analysis problems in finance, marketing, and so forth. Formulate the problems and Introduce statistics models and data analytics techniques to address them.

TLA2. Laboratory: Demonstrations by instructor and hands-on exercises by students on solving the selected business data analysis problems in finance, marketing, etc. Widely used commercial software, such as Microsoft Excel, will be used as a means to practice the modeling techniques learnt in lectures:

TLA3. Group Project: Students would have to complete a group project to investigate a real life case in finance, marketing, or other area and apply business data analytics techniques to address it.

ILO No	TLA1	TLA2	TLA3	Hours/week (if applicable)
CILO 1	2	1	1	---
CILO 2	2	2	2	---
CILO 3	2	2	2	---
CILO 4		1	2	---

(1: Indirectly Supporting ILO; 2: Directly Supporting ILO)

4. Assessment Tasks/Activities

(designed to assess how well the students achieve the CILOs)

Indicative of likely activities and tasks students will undertake to learn in this course. Final details will be provided to students in their first week of attendance in this course.

Coursework

ATl. Class performance and assignments (30%): Involvement in class discussions reflect on the materials covered in the lecture; Attempt in laboratory exercises; and Efforts shown in addressing the data analysis assignments provided by the instructor.

AT2. Group Project (30%): A group project, which includes a written report and an oral presentation (about 10 min duration), will be assigned to students to investigate a real-life problem in business data analysis to critically apply the concepts learned in the course, and propose original findings. Each team will contain 2 to 3 students.

AT3. Individual Lab Test (40%): An individual lab test is given to assess students' competence level of the subjects covered in the course. The students are expected to be able to creatively demonstrate the use software to address questions asked based on provided data sets.

ILO No	AT1 (30%)	AT2 (30%)	AT3 (40%)	Remarks
CILO 1	2	2	1	
CILO 2	2	2	2	
CILO 3	1	2	2	
CILO 4	1	2		

(1: ILO moderately assessed by AT; 2: ILO heavily assessed by AT)

5. Grading of Student Achievement: Refer to Grading of Courses in the Academic Regulations for Taught Postgraduate Degrees.

Standard Grading pattern (A+, A, A- … C-, D, F)

ILO	Excellent	Good	Adequate	Marginal
CILO1	Accurately and creatively specify all targets and requirements for a spectrum of business data analysis problems in finance, marketing, etc.	Accurately specify all targets and requirements for a spectrum of business data analysis problems in finance, marketing, etc.	Accurately specify most targets and requirements for a spectrum of business data analysis problems in finance, marketing, etc.	Be able to specify some targets and requirements for a spectrum of business data analysis problems in finance, marketing, etc.
CILO2	Accurately utilize scripting and database tools to retrieve data and use spreadsheet and statistical software to discover patterns in the data for addressing the selected problems.	Accurately utilize database tools to retrieve data and use spreadsheet and statistical software to discover patterns in the data for addressing the selected problems.	Accurately utilize scripting and database tools to retrieve data and use spreadsheet and statistical software to discover patterns in the data for addressing some of the selected problems.	Accurately utilize spreadsheet and statistical software to discover patterns in the data for addressing the selected problems.
CILO3	Creatively and successfully utilize all introduced analytics techniques and tools to address real data analysis problems in finance, marketing or other business applications and propose original findings.	Successfully utilize all introduced analytics techniques and tools to address real data analysis problems in finance, marketing or other business applications and propose original findings.	Successfully utilize most introduced analytics techniques and tools to address real data analysis problems in finance, marketing or other business applications and propose original findings.	Successfully utilize some introduced analytics techniques and tools to address real data analysis problems in finance, marketing or other business applications and propose original findings.
CILO4	Creatively communicate all analysis procedure and results effectively in presentations with oral, written and electronic formats.	Creatively communicate all key analysis procedure and results effectively in presentations with oral, written and electronic formats.	Communicate most key analysis procedure and results effectively in presentations with oral, written and electronic formats.	Communicate some key analysis procedure and results effectively in presentations with oral, written and electronic formats.

Part III

Keyword Syllabus:

- Introduction and Overview
    - Data analysis in finance, marketing, and other business applications
    - Business intelligence
    - Spreadsheet modeling and Excel functions
    - SQL and statistics
- Techniques
    - Chart and analytics
    - Regression
    - VBA programming
    - Data collection, cleansing, normalization, & mining
- Applications
    - Financial statement analysis: Ratios and predictions
    - Financial forecasting: Sales, revenue, and stock
    - Business intelligence in marketing: Census, segmentation & basket analysis
- Advanced topics
    - Visualization
    - Time series analysis
    - Risk assessment & portfolio management
    - Survival and factor analysis

Recommended Reading:
Text(s):

S. Christian Albright, Wayne Winston and Christopher Zappe, Data Analysis and Decision Making with Microsoft Excel, 3rd edition, Cengage Learning, 2008.

Gordon S. Linoff, Data Analysis Using SQL and Excel, Wiley Pub., 2007.

Jackson, M. and Staunton, M., Advanced Modeling in Finance Using Excel and VBA, Wiley.

Timothy R. Mayes and Todd M. Shank, Financial Analysis with Microsoft Excel, South-Western College Pub, 2006.

John Walkenbach, Excel 2003 Power Programming with VBA, Wiley.

Simon Benninga, Financial Modeling, MIT Press.

Alexander, C., Market Models: A Guide to Financial Data Analysis, John Wiley and Sons, 2001.

Moore, J.H. (Ed.), Weatherford, L.R. (Ed), Decision Modeling with Microsoft Excel, 6th edition, Prentice Hall, 2001.