

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Management Sciences  
with effect from Semester B 2017 / 2018**

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**Part I Course Overview**

**Course Title:** Business Analytics with Spreadsheet

**Course Code:** MS5215

**Course Duration:** One semester

**Credit Units:** 3

**Level:** P5

**Medium of Instruction:** English

**Medium of Assessment:** English

**Prerequisites:**  
(Course Code and Title) Nil

**Precursors:**  
(Course Code and Title) Nil

**Equivalent Courses:**  
(Course Code and Title) Nil

**Exclusive Courses:**  
(Course Code and Title) Nil

## Part II Course Details

### 1. Abstract

Spreadsheets play a vital role in analytical work and are essential in the business world. This course aims to equip students with a set of modeling skills together with data analytical tools based on spreadsheet that enable them to address complex business problems. Students will learn:

- How to develop and use spreadsheet models effectively for business analysis.
- How to utilize data and models together with sophisticated analysis to derive better insights and drive better decisions.
- Analytical techniques based on Excel and VBA programming and their business applications.

### 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Collect and analyse data, build sound models for problems using spreadsheets	20%	√	√	√
2.	Perform data analysis and develop solutions using spreadsheet techniques	30%		√	√
3.	Demonstrate programming skills in VBA	30%		√	√
4.	Demonstrate ability to communicate and explain the analysis to non-specialists	20%		√	√
		100%			

**A1: Attitude**

*Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.*

**A2: Ability**

*Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.*

**A3: Accomplishments**

*Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.*

### 3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if applicable)
		1	2	3	4	
Lectures	In lectures, students learn the formulation of managerial problems in various functional areas, spreadsheet techniques, and VBA programming logic and syntax.	√	√	√		
Computer-based laboratories	Hands-on experience with the techniques and problem solving activities based on data analytics problems. The laboratory sessions consolidate and supplement what the students learn in lectures.	√	√	√		
Group Project	Students work in small groups to solve particular data analytics problems using spreadsheet and VBA programming. The project is designed to be a decision-making process, including data collection, problem formulation, modeling, analysis, solution methods with appropriate tools, and validation of the results.	√	√	√	√	

### 4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.					Weighting	Remarks
	1	2	3	4			
Continuous Assessment: <u>50</u> %							
Course Assignment	√	√	√			20%	
Class Participation	√	√	√	√		30%	
Examination: <u>50</u> % (duration: 3 hours if applicable)							
Written Examination	√	√	√			50%	
						100%	

## 5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Assignment	Homework assignments are designed to help students practice their problem-solving and programming skills and obtain hands-on experience using spreadsheet techniques.	Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with subject matter.	Some evidence of understanding of the subject; ability to perform basic model building and data analysis.	Adequate familiarity with the subject matter; shows marginal ability to perform basic model building and data analysis.	Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.
2. Group Project	Students work in small groups to produce a collaborative written report. They need to document in a well-written report the details of the spreadsheet model of the business problem, and deliver an oral presentation in the class.	Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base and familiarity with literature. Clearly and correctly states most critical points and important findings of the project. Excellent presentation skills.	Evidence of original thinking, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature. Clearly and correctly states some critical points and important findings of the project. Good presentation skills.	Little evidence of original thinking, little evidence of critical capacity and analytic ability; reasonable understanding of issues. Correctly states some critical points and some of the findings of the project. Average presentation skills.	Very little evidence of original thinking, critical capacity, and analytic ability but shows marginal understanding of subject matters and issues and states a few critical points and findings of the project. Below average presentation skills.	Very little evidence of familiarity with the subject matter and issues; weakness in critical and analytic skills. Poor presentation skills.
3. Exam	Examination covers all topics of the course. It is designed to assess students' understanding on the concepts of spreadsheet modelling and VBA programming, and their ability to apply them to solve business problems.	Evidence of original thinking, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature. Clearly and correctly states some critical points and important findings of the project.	Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Some evidence of understanding of the subject; ability to perform basic statistical model building and data analysis for marketing research.	Adequate familiarity with the subject matter to enable the student to progress without repeating the course.	Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.

**Part III Other Information** (more details can be provided separately in the teaching plan)

**1. Keyword Syllabus**

*(An indication of the key topics of the course.)*

Analytic techniques using spreadsheet

- Descriptive analytics (e.g., summarizing data using descriptive statistics, manage data using PivotTables and slicer, visualizing data using charts)
- Predictive analytics (e.g., what-if analysis, scenario analysis)
- Prescriptive analytics (e.g., optimization using solver)

VBA programming

- How VBA works with Excel (e.g., work in the Visual Basic Editor, Excel Object, VBA sub and function procedures, Macro recorder)
- Programming (e.g., basic language, functions, range object, control program flow)
- Communication with Users (e.g., Dialog Boxes, UserForm, Macro)

Applications in analytics

- Comprehensive case study with applications in operations, marketing, etc.

**2. Reading List**

**2.1 Compulsory Readings**

*(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)*

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2.	
3.	
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**2.2 Additional Readings**

*(Additional references for students to learn to expand their knowledge about the subject.)*

1.	Winston, Wayne L, <i>Microsoft Excel 2013: Data Analysis and Business Modeling</i> . Microsoft Press.
2.	Walkenbach, John, <i>Excel VBA Programming For Dummies</i> , 3rd Edition. John Wiley & Sons.
3.	Walkenbach, John, <i>Excel 2013 Power Programming with VBA</i> . John Wiley & Sons.
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