

Hong Kong Baptist University
Faculty of Science
Department of Mathematics

Title (Units): ORBS7030 Business Statistics with Python (3,3,0)

Course Aims: The aim of this course is to enable students to apply basic statistical inference methods for tackling real-world business questions of economic activity and equip them with basic knowledge of the Python programming package.

Prerequisite: No

Prepared by: Luo Dehui

Remark: This course is delivered by staff of HKBU.

Course Intended Learning Outcomes (CILOs):

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

No.	Course Intended Learning Outcomes (CILOs)
1	Explain conceptual understanding of the nature of data analysis and probability modelling.
2	Critically evaluate managerial problems that can be framed as data analysis problems.
3	Apply advanced statistical analyses and communicate results in written reports.
4	Demonstrate effective use of the Python statistical package.

Teaching & Learning Activities (TLAs):

CILO	TLAs will include the following:
1,2,3	New concepts will be introduced in lectures, together with instructions and any requisite theory. Where possible, theory will be demonstrated using practical examples.
1,2,4	Computer terminals will afford students the opportunity of putting theory into practice and will include learning how to model, analyse, and perform calculations using Python whenever necessary.

Assessment:

No.	Assessment Methods	Weighting	CILO Addressed	Remarks
1	Assignment	40%	all	The students will be given data analysis problems that need to integrate some of the techniques covered in the course and to use Python whenever necessary.
2	Final Examination	60%	1,2,4	Final Examination is designed to see how far students have achieved their intended learning outcomes especially in the knowledge domain. Students should have a thorough recognizing of the knowledge and apply them correctly in different context to do well in the exam.

Course Intended Learning Outcomes and Weighting:

Content	CILO No.	Teaching (in hours)
1. Business Statistics	1,2	26
2. Python programming package	1,2	13

References:

1. Weiss, N.A. (2014) *Introductory Statistics*, 10th Edition. London: Pearson Education. (ISBN: 978-0321989178)
2. Anderson, D.R., Sweeney, D.J., Williams-Rochester, T.A. (2015) *Statistics for Business and Economics*, 12th Edition. London: Pearson Education. (ISBN: 978-1285846323)
3. Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2010) *Multivariate Data Analysis*, 7th Edition. New York: Prentice Hall. (ISBN: 978-0138132637)
4. Keller, G., Warrack, B. (2014) *Statistics for Management and Economics*, 9th Edition. Andover: Duxbury Press. (ISBN: 978-1265425450)

Course Content in Outline:

1. Business Statistics: Students will learn about descriptive analysis of quantitative data, focusing mainly on how to effectively summarise data, and inferential analysis of quantitative data, which includes identifying key properties of a given dataset, deriving point and interval estimates, hypothesis testing, correlation analysis, and simple linear regression.
2. Python programming package: This will cover the Python programming language and introduce students to basic and more advanced concepts within Python, as well as how to use Python for performing statistical data analyses.

(Approved by the Science Faculty Board Meeting by circulation in August 2024)

(Approved by the Department Management Committee on 7 August 2024)

(Approved by the Science Faculty Board Meeting 31 October 2023)

(Approved by the Department Management Committee on 5 September 2023)