The Hong Kong Polytechnic University

Subject Description Form

Subject Code	LGT1041
Subject Title	Introduction to Artificial Intelligence and Data Analytics in Business
Credit Value	2
Level	1
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	The objective of this subject is to provide students with an overview of artificial intelligence and data analytics (AIDA) and their latest business applications. This subject seeks to help students develop data thinking and analytical skills for transforming data into insights for better decision making. In addition to theoretical knowledge of AIDA, students can gain hands-on experience with Python programming. Knowledge and skills acquired through this subject can be extended to other subjects related to AIDA and Python programming.
Intended Learning Outcomes *(Note 1)*	Upon completion of the subject, students will be able to: a. Demonstrate an understanding of the foundational concepts of Artificial Intelligence and Data Analytics (AIDA). b. Acquire basic skills in using AIDA technologies and applications. c. Articulate examples of how the adoption AIDA could enhance business discipline. d. Demonstrate an awareness of global contemporary ethical issues and impact from AIDA applications in daily life. e. Acquire fundamental Python programming skills.
Subject Synopsis/ Indicative Syllabus *(Note 2)*	**Artificial Intelligence (AI)** Basic concepts of AI. A brief history of AI. AI and machine learning, robotics, and natural processing language. AI applications in marketing, banking, e-commence, education and other industries. Future of AI. Ethical issues of AI. **Big Data, Cloud Computing and Data Analytics Tools** Overview of big data, cloud computing and data analytics tools for structured and unstructured data. Business applications of data analytics tools. **Python Programming** Fundamental programming concepts. Variables, expressions, statements, and arithmetic operations. Conditional statements (if, then, else). Iterations (while loop and for loop). Strings and lists.

Teaching/Learning Methodology

(Note 3)

The course will implement a variety of methods as its pedagogy to help students achieve the above learning outcomes.

- An online module developed by Department of Computing is provided to cover materials related to AIDA
- The course is delivered in the format of 2-hour per week
- Classes are designed to illustrate key concepts and application cases relevant to Python and AIDA in business contexts. Guess lectures might be arranged.
- Hand-on sessions are provided for students to gain practical experience with Python programming.

Assessment Methods in Alignment with Intended Learning Outcomes

(Note 4)

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		a	b	c	d	e	
1. Participation	15%	✓	✓	✓	✓	✓	
2. Individual Assignment	15%	✓	✓	✓			
3. Group Assignment	30%	✓	✓	✓		✓	
4. Exam	40%	✓	✓	✓	✓	✓	
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

To reflect the significant technology content in this subject, 10% (or more) of the overall weighting of this subject is based on individual assessment concerning technology-related knowledge.

To pass this subject, students are required to obtain Grade D or above in the overall subject grade.

Participation covers class participation, quiz and exercises.

Individual assignment assesses students' AIDA concepts.

Group assignment evaluates students' co-operation in applying Python and AIDA concepts in business situations.

Exam measures students' overall understanding of AIDA and Python knowledge covered in this course.

Student Study Effort Expected		
	Class contact:	
	▪ Online module	4 Hrs.
	▪ Lectures and tutorials	22 Hrs.
	Other student study effort:	

	▪ Preparation for lectures and tutorials	20 Hrs.
	▪ Preparation of assignment / group assignment and presentation / examination	36 Hrs.
	Total student study effort	82 Hrs.
Reading List and References	1. Camm, J.D., Cochran, J.J., Fry, M.J. & Ohlmann, J.W. (2021). *Business Analytics (4th Edition)*. Cengage. 2. Davenport, T.H., Brynjolfsson, E., McAfee, A., & Wilson, H.J. (2019). *Artificial Intelligence: The Insights You Need from Harvard Business Review*. Harvard Business Press. 3. Haenlein, M., & Kaplan, A. (2019). A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence. *California Management Review*, 61(4), 5-14. 4. Hosanagar, K. (2019). *A Human's Guide To Machine Intelligence: How Algorithms Are Shaping Our Lives And How We Can Stay in Control*. Viking. 5. Kaplan, J. (2016). *Artificial Intelligence (What Everyone Needs to Know)*. Oxford University Press. 6. Panda, S. (2022). *Artificial Intelligence and Machine Learning in Business Management: Concepts, Challenges, and Case Studies (First Edition)*. CRC Press. 7. Rose, D. (2020). *Artificial Intelligence for Business (2nd Edition)*. Pearson FT Press. 8. Severance, C.R. (2016). *Python for Everybody: Exploring Data in Python 3*. CreateSpace Independent Publishing Platform. 9. Yao, M., Jia, M., Zhou, A., & Zhang, N. (2018). *Applied artificial intelligence: A handbook for business leaders*. TOPBOTS.	

Note 1: Intended Learning Outcomes
Intended learning outcomes should state what students should be able to do or attain upon subject completion. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/Indicative Syllabus
The syllabus should adequately address the intended learning outcomes. At the same time, overcrowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology
This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method
This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method is intended to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.