HONG KONG IGDS - MSC MODULE OUTLINE

Subject Title	**Big Data & Analytics for Industry (BD)**	
	HK PolyU	*WarwickU*
Subject Code	ISE5756	WM9G1-15
Credit Value	3	15
Level	Level 5	Taught Postgraduate Level
Pre-requisite/ Co-requisite/Exclusion	None but some preliminary reading of big data would be beneficial.	
Introduction	This module aims to enable participants to understand the principles, challenges and opportunities that Big Data offers to technology-led (or engineering) organisations. The focus of the module will be primarily on the management implications, rather than technical specifics of a Big Data architecture and/or analytics (both of which are introduced). Following from this, the module will also focus on the visualisation of Big Data, and of the insights derived from Big Data analytics, to support management decision making in engineering contexts.	
Objectives	No 1 To enable participants to understand the principles, challenges and opportunities that Big Data offers to technology-led (or engineering) organisations. No 2 To develop hands-on experience with the latest technology, current best practices. No 3 To critically analyse a range of business scenarios, and implement sophisticated big data and digital analytics solutions.	
Intended Learning Outcomes (ILO's) *(Note 1)*	Upon completion of the subject, participants will be able to: No 1 critically evaluate the key differences between Big Data technologies and analysis methods and traditional approaches in engineering business management. No 2 critically evaluate real-world engineering scenarios/case studies and devise appropriate analytical solutions. No 3 demonstrate a comprehensive understanding of the core concepts of visual communication and data visualisation. No 4 collaboratively analyse engineering business requirements and practically implement analytics and optimistaion techniques in real-world settings.	
Indicative Syllabus Topics *(Note 2)*	No 1 Core Concepts of Big Data No 2 Data Warehouse Architecture No 3 Big Data Architecture Analytics No 4 Core Concepts of Analytics No 5 Decision Analytics, Predictive Analytics No 6 Artificial Intelligence and Machine Learning Decision Science & Visualisation No 7 Key Topics in Decision Science No 8 Visual Communication No 9 Data Visualisation, Data Visualisation Software, Big Data and Visualisation in Engineering Management No 10 Practical Simulation of the Above Topics	

	A combination of lectures and case studies are used to deliver the various themes in this subject. Especially, guest speakers from industrial or commercial sectors who are invited to share their significant business experience in a problem-solving approach. This helps enhance the learning objectives and intended learning outcomes (ILOS's).
Teaching/Learning Methodology *(Note 3)*	Alignment between Teaching/Learning Methodologies and ILOs:

Teaching/Learning Methodologies	Intended Subject Learning Outcomes to be assessed			
	No 1	No 2	No 3	No 4
Lecture	√	√	√	√
Case studies	√	√	√	√

Assessment Methods in Alignment with Intended Learning Outcomes *(Note 4)*

Assessment Methods/Tasks	% Weight	Intended Learning Outcomes (ILO's)			
		No 1	No 2	No 3	No 4
1. Case Studies and Presentation	30	√	√	√	√
2. Post Module Assignment (PMA)	70	√	√	√	√
Total	100				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes (ILO's).The PMA requires participants to apply what they have learnt in the module to their own work environment. These will embrace the ILO's albeit in different work situations.

Student Study Effort Required

Class Contact:	
Lecture	20 Hours
Case Study	10 Hours
Other Participant Study Effort:	
Private Study	120 Hours
Total Participant Study Effort	150 Hours

Reading List and References

The list given to participants covers core texts only and embraces all the topics covered in the module. In total there are 7 references provided. They can be found in the Folder Notes given to participants at the commencement of the module.

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

Note 2: Subject Synopsis/ Indicative Syllabus
The syllabus adequately addresses the intended learning outcomes. At the same time over-crowding of the syllabus has been be avoided.

Note 3: Teaching/Learning Methodology
This section includes 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 includes the assessment method(s) used and its relative weighting, and indicates which of the subject intended learning outcomes that each method assesses. It also provides a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.