KING'S OWN INSTITUTE*

Success in Higher Education

MBA909 Data Analytics T325 BRIEF

All information in the Subject Outline is correct at the time of approval. KOI reserves the right to make changes to the Subject Outline if they become necessary. Any changes require the approval of the KOI Academic Board and will be formally advised to those students who may be affected by email and via Moodle.
Information contained within this Subject Outline applies to students enrolled in the trimester as indicated

1. General Information

1.1 Administrative Details

Associated HE Award(s)	Duration	Level	Subject Coordinator
MBA	1 trimester	Postgraduate	Dr Firoz Anwar firoz.anwar@koi.edu.au L: 7-11, 11 York Street Consultation: via Moodle or by appointment

1.2 Core / Elective

This is a core subject for the above courses.

1.3 Subject Weighting

Indicated below is the weighting of this subject and the total course points.

Subject Credit Points	Total Course Credit Points
4	MBA: 48 Credit Points

1.4 Student Workload

Indicated below is the expected student workload per week for this subject

No. Timetabled Hours/Week*	No. Personal Study Hours/Week**	Total Workload Hours/Week***
3 hours/week plus supplementary online material	7 hours/week	10 hours/week

* Total time spent per week at lectures and tutorials
** Total time students are expected to spend per week in studying, completing assignments, etc.
*** Combination of timetable hours and personal study.

1.5 Mode of Delivery Face-to-face on site unless otherwise notified (please check Moodle). Note – since T322, KOI is in transition and most classes will be returning to face-to-face delivery. However, there are a range of issues remaining because of COVID-19. For example, some students may have trouble travelling to Australia. Because of this some classes may still be online. This affects whether the final exam for a subject will be open-book or closed-book. After enrolment KOI will be able to make a determination and notification will be provided on Moodle before Week 7.

1.6 Pre-requisites Nil

1.7 General Study and Resource Requirements

- Students are expected to attend classes with the weekly worksheets and subject support material provided in Moodle. Students should read this material before coming to class to improve their ability to participate in the weekly activities.
- Students will require access to the internet and their KOI email and should have basic skills in word processing software such as MS Word, spreadsheet software such as MS Excel and visual presentation software such as MS PowerPoint.
- Computers and WIFI facilities are extensively available for student use throughout KOI. Students are encouraged to make use of the campus Library for reference materials.

Resource requirements specific to this subject: Specific resources will be identified in discussions with your lecturer. Prescribed readings and research examples will be posted to Moodle for additional guidance and recommended readings listed at section 2.9 will provide useful background reading.

1.8 Academic Advising

Academic advising is available to students throughout teaching periods including the exam weeks. As well as requesting help during scheduled class times, students have the following options:

- Consultation times: A list of consultation hours is provided on the homepage of Moodle where appointments can be booked.
- Subject coordinator: Subject coordinators are available for contact via email. The email address of the subject coordinator is provided at the top of this subject outline.
- Academic staff: Lecturers and Tutors provide their contact details in Moodle for the specific subject. In most cases, this will be via email. Some subjects may also provide a discussion forum where questions can be raised.
- Head of Program: The Head of Program is available to all students in the program if they need advice about their studies and KOI procedures.
- Vice President (Academic): The Vice President (Academic) will assist students to resolve complex issues (but may refer students to the relevant lecturers for detailed academic advice).

2 Academic Details

2.1 Overview of the Subject

The Gig economy and Industry 4.0 drive and contribute an insatiable demand for data. Any actor operating within the technology centric and globally connected enterprise must be able to command and exploit data for the benefit of the enterprise. MBA909, Data Analytics explores enterprise data and investigates how enterprises exploit data to make evidenced based strategic decisions.

2.2 Graduate Attributes for Postgraduate Courses

Graduates of Postgraduate courses from King's Own Institute will achieve the graduate attributes expected from successful completion of a Master's degree under the Australian Qualifications Framework (2nd edition, January 2013). Graduates at this level will be able to apply an advanced body of knowledge from their major area of study in a range of contexts for professional practice or scholarship and as a pathway for further learning.

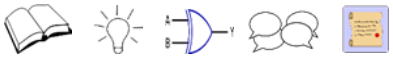
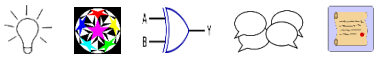
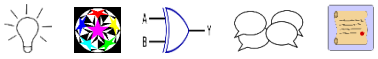
King's Own Institute's generic graduate attributes for a master's level degree are summarised below:

	KOI Master Degree Graduate Attributes	**Detailed Description**
	Knowledge	Current, comprehensive and coherent knowledge, including recent developments and applied research methods
	Critical Thinking	Critical thinking skills to identify and analyse current theories and developments and emerging trends in professional practice

	Communication	Communication and technical skills to analyse and theorise, contribute to professional practice or scholarship, and present ideas to a variety of audiences
	Research and Information Literacy	Cognitive and technical skills to access and evaluate information resources, justify research approaches and interpret theoretical propositions
	Creative Problem Solving Skills	Cognitive, technical and creative skills to investigate, analyse and synthesise complex information, concepts and theories, solve complex problems and apply established theories to situations in professional practice
	Ethical and Cultural Sensitivity	Appreciation and accountability for ethical principles, cultural sensitivity and social responsibility, both personally and professionally
	Leadership and Strategy	Initiative, leadership skills and ability to work professionally and collaboratively to achieve team objectives across a range of team roles Expertise in strategic thinking, developing and implementing business plans and decision making under uncertainty
	Professional Skills	High level personal autonomy, judgement, decision-making and accountability required to begin professional practice

2.3 Subject Learning Outcomes

Listed below, are *key* knowledge and skills students are expected to attain by successfully completing this subject:

Subject Learning Outcomes	Contribution to Graduate Attributes
a) Evaluate multiple types of data contextually relevant to an enterprise and its ecosystem	
b) Compare data collection strategies capable of delivering unbiased and robust data	
c) Create appropriate predicative models using appropriate software	
d) Critically analyse data, including model creation and outcome predictions, using appropriate software	
e) Appraise fundamental machine learning protocols to aid in evaluating data for decision making	

2.4 Subject Content and Structure

Below are details of the subject content and how it is structured, including specific topics covered in lectures and tutorials. Reading refers to the text unless otherwise indicated.

Weekly Planner:

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
Week 1 27 Oct	Learning Development and Scaffolding Introduction: Concepts: Introduction to the subject and expectations	Camm et al Chapter 1 Evans J.R. Chapter 1	
Week 2 03 Nov	Managing big data: Concepts: Acquiring, classifying and analysing big data. Ethical, security and privacy considerations.	Camm et al Chapter 1	
Week 3 10 Nov	Enterprise Wide Analytics: Concepts: Enterprise wide analytics. Ensuring data efficacy. Management Information Systems and Executive Information Systems.	Online and Various Sources	
Week 4 17 Nov	Data Warehousing: Concepts: Data warehousing, processes, tools and efficiency.	Online and Various Sources	A1 – Individual Project Plan and Data Collection Report (due Sunday W3)
Week 5 24 Nov	Data Visualization: Concepts: Visualisation techniques for communicating complex data	Camm et al Chapter 3 Evans J.R. Chapter 3	
Week 6 01 Dec	Data Mining 1: Concepts: Data mining processes, transformation and integration techniques and dealing with rogue data	Camm et al Chapter 4 & 5 Evans J.R. Chapter 4	
Week 7 08 Dec	Data Mining 2: Concepts: Correlational and frequency analysis.	Camm et al Chapter 6 Evans J.R. Chapter 4	A2 – Individual Data Analysis (Exploratory) Report (due Sunday W3)
Week 8 15 Dec	Data Classification: Concepts: Data classification, an overview. Understanding decision trees and other techniques.	Camm et al Chapter 5 & 9 Evans J.R. Chapter 10	

Week 9 05 Jan	Data Clustering: Concepts: Overview of data clustering, similarity and neighbourhood clustering.	Camm et al Chapter 5 & 9 Evans J.R. Chapter 10	
Week 10 12 Jan	Web Analytics: Concepts: Aligning enterprise needs to Web analytics Using AI for direct marketing	Online and Various Sources	A3 – Individual Data Analysis (Predictive and/or Prescriptive) Report (due Sunday W10)
Week 11 19 Jan	Assurance of Learning - Debate: Ethics and AI: Concepts: Debate: the ethics of data driven AI on the socially responsible enterprise	Online and Various Sources	
Week 12 27Jan (Tue)	Decision Analysis & Review	Camm et al Chapter 11 & 15	A4 – Individual Benchmarking – Report (due Sunday W12)
Week 13 02 Feb	Study review week and Final Exam Week		
Week 14 09 Feb	Examinations Continuing students - enrolments for T126 open		Please see exam timetable for exam date, time and location
Week 15 16 Feb	Student Vacation begins New students - enrolments for T126 open		
Week 16 23 Feb	• Results Released • Review of Grade Day for T325 – see Sections 2.6 and 3.2 below for relevant information. • Certification of Grades NOTE: More information about the dates will be provided at a later date through Moodle/KOI email.		
T126 2 Mar 2026			
Week 1 02 Mar	Week 1 of classes for T126		

2.5 Teaching Methods/Strategies

Briefly described below are the teaching methods/strategies used in this subject:

- *Lectures* (1 hour/week) are conducted in seminar style and address the subject content, provide motivation and context and draw on the students' experience and preparatory reading.
- *Tutorials* (2 hours/week) include class discussion of case studies and research papers, practice sets and problem-solving and syndicate work on group projects. Tutorials often include group exercises and so contribute to the development of teamwork skills and cultural understanding. Tutorial participation is an essential component of the subject and contributes to the development of many of the graduate attributes (see section 2.2 above). Tutorial participation contributes towards the

assessment in many subjects (see details in Section 3.1 for this subject). Supplementary tutorial material such as case studies, recommended readings, review questions etc. will be made available each week in Moodle.

- *Online* teaching resources include class materials, readings, model answers to assignments and exercises and discussion boards. All online materials for this subject as provided by KOI will be found in the Moodle page for this subject. Students should access Moodle regularly as material may be updated at any time during the trimester
- *Other contact* - academic staff may also contact students either via Moodle messaging, or via email to the email address provided to KOI on enrolment.

2.6 Student Assessment

Provided below is a schedule of formal assessment tasks and major examinations for the subject.

Assessment Type	When Assessed	Weighting	Learning Outcomes Assessed
Assessment 1 (Individual) Project Plan and Data Collection - Individual problem analysis, requirement analysis and data acquisition. Short Report of 500 words	Week 4	10%	a and b
Assessment 2 (Individual): Data Analysis (Exploratory) – Short Report of 1000 words	Week 7	30%	a, b, c and d
Assessment 3 (Individual) Data Analysis (Predictive and/or Prescriptive) – Short Report of 1000 words	Week 10	30%	a, b, c, d and e
Assessment 4 (Individual): Benchmarking – Report of 1500 words	Week 12	30%	a, b, d and e

Requirements to Pass the Subject:

To gain a pass or better in this subject, students must gain a *minimum of 50%* of the total available subject marks.

2.7 Prescribed and Recommended Readings

Provided below, in formal reference format, is a list of the prescribed and recommended readings.

Prescribed Text:

Camm, J.D. et al. 2023. Business Analytics: descriptive, predictive, prescriptive (5th ed.). Boston, Ma, USA Cengage.

Evans, J.R. 2020 Business Analytics, Global Edition. S.L.: Pearson Education Limited.

Recommended Reading:

Tayeb, Khabirun. (2023). Decision-Making & Data Science: How Large Businesses Can Use Analytics to Shape Decisions. Business & IT. XIII. 55-64. 10.14311/bit.2023.02.06.

Akter, S. Hossain, M.A, Lu,Q. Riad Shams, S.M. 2021. Big data-driven strategic orientation ininternational marketing. International Marketing Review Vol. 38 No. 5, pp. 927-947

Boldosova, V. Luoto, S. 2020. Storytelling, business analytics and big data interpretation. Literature review and theoretical propositions. Management Research Review Vol. 43 No. 2, pp. 204-222

Brinch, M. Stentoft, J. Näslund, D. Alignment capabilities of big data's value creation in the context of service delivery processes. Supply Chain Management: An International Journal 26/3, 402– 417

Sarker IH. Data Science and Analytics: An Overview from Data-Driven Smart Computing, Decision-Making and Applications Perspective. SN Comput Sci. 2021;2(5):377. doi: 10.1007/s42979-021-00765-8. Epub 2021 Jul 12. PMID: 34278328; PMCID: PMC8274472.

Ozemre, M. Kabadurmus, O. 2020. A big data analytics based methodology for strategic decision making. Journal of Enterprise Information Management Vol. 33 No. 6, pp. 1467-1490

Conference / Journal Articles

Udeh, C.A., Orieno, O.H., Daraojimba, O.D., Ndubuisi, N.L. & Oriekhoe, O.I. 2024. Big data analytics: A review of its transformative role in modern business intelligence. *Computer Science & IT Research Journal*, vol. 5, no. 1, pp. 219-236. https://doi.org/10.51594/csitrj.v5i1.718

Ochuba, N.A., Amoo, O.O., Okafor, E.S., Akinrinola, O. & Usman, F.O. (2024) 'Strategies for leveraging big data and analytics for business development: A comprehensive review across sectors', *Computer Science & IT Research Journal*, 5(3), pp. 562-575. Available at: https://doi.org/10.51594/csitrj.v5i3.861.

Tayeb, Khabirun. (2023). Decision-Making & Data Science: How Large Businesses Can Use Analytics to Shape Decisions. Business & IT. XIII. 55-64. 10.14311/bit.2023.02.06.

Students are encouraged to read peer reviewed journal articles and conference papers. Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites.

Useful Websites

The following industry websites are useful introductory sources covering a range of information useful for this subject.

- Business Process Management Journal – https://www.emerald.com/insight/publication/issn/1463-7154
- Harvard Business Review – Analytics and Data Science https://hbr.org/topic/subject/analytics-and-data-science?ab=articlepage-topic
- International Journal of Accounting & Information Management - https://www.emerald.com/insight/publication/issn/1834-7649
- Journal of Enterprise Information Management - https://www.emerald.com/insight/publication/issn/1741-0398
- Journal of Knowledge Management - https://www.emerald.com/insight/publication/issn/1367-3270

- Managerial Auditing Journal – https://www.emeraldgrouppublishing.com/journal/maj
- Management Research Review – https://www.emeraldgrouppublishing.com/journal/mrr
- Supply Chain Management: An International Journal - https://www.emerald.com/insight/publication/issn/1359-8546