UNIVERSITI MALAYA	**MAKLUMAT KURSUS UNTUK SEMESTER/PENGGAL SEMASA** ***COURSE INFORMATION FOR CURRENT SEMESTER/TERM***

Sesi Akademik *Academic Session*	2024/2025
Semester/Penggal *Semester/Term*	1
Kod Kursus *Course Code*	WQD 7009
Tajuk Kursus *Course Title*	Analitik dan Applikasi Data Raya *Big Data Applications and Analytics*
Bahasa Pengantar *Medium of Instruction*	Bahasa Inggeris *English*
Rujukan Utama *Main Reference*	1. Lecture notes and resources 2. Haines, S. (2022). Modern Data Engineering with Apache Spark: A Hands-On Guide for Building Mission-Critical Streaming Applications. United States: Apress. 3. Data Science and Big Data Analytics in Smart Environments. (2021). United Kingdom: CRC Press. 4. Demirbaga, Ü., Aujla, G. S., Jindal, A., & Kalyon, O. (2024). Big data analytics: Theory, techniques, platforms, and applications. Springer Nature. Switzerland. 5. Principles and Practice of Big Data: Preparing, Sharing, and Analyzing Complex Information, Jules J. Berman, 2018 6. Modern Big Data Processing with Hadoop, V Naresh Kumar & Prashant Shindgikar, 2018. 7. Big Data: Algorithms, analytics, and applications. (2020). S.l.: CRC PRESS. 8. BIG DATA ANALYTICS: CONCEPTS, TECHNIQUES, TOOLS AND TECHNOLOGIES. (2022). (n.p.): PHI Learning Pvt. Ltd.. 9. Gupta, B. B., Mamta, (2023). Big Data Management And Analytics. Singapore: World Scientific Publishing Company.
Strategi Pembelajaran *Learning Strategies*	Kuliah, makmal dan tutorial *Lecture, lab and tutorial*
Masa Pembelajaran Pelajar *Student Learning Time*	Bersemuka / *Face to face* : 37 Tidak Bersemuka / *Non Face to face*: 5 Masa Persediaan Pelajar / *Student Preparation Time*: 84
Kemahiran Boleh Pindah Transferable Skills	Mendefinasikan keperluan; Melaksanakan keputusan; Menyusun, Menyelaras penyelesaian masalah dan kemahiran-kemahiran berkomunikasi.

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Pensyarah / *Lecturer* Bilik / *Room* Telefon/e-mel *Telephone/e-mail*	Dr. Riyaz Ahamed A - 3 – 10 riyaz@um.edu.my
Sesi Kuliah / Lecture Session: Hari/Masa / Day/Time Tempat / Venue Tutorial/Practical Session:	6.00 pm to 8 .00 pm – **Group -1** Jumaat/ Friday Dalam talian/ Online 8.00 pm to 9.00 pm
Sesi Kuliah / Lecture Session: Hari/Masa / Day/Time Tempat / Venue Tutorial/Practical Session:	3.00 pm to 5.00 pm – **Group -2 , Group -4 & Group RL** Sunday Dalam talian/ Online 5.00 pm to 6.00 pm)
Perincian Pemberatan Penilaian *Detail of Assessment Weightage*	Penilaian Berterusan / Continuous Assessment : 70% Assignment (15%): 6 Mid-Term (15%): Week 9 Course Assignment's Report (40%): Week 13 Peperiksaan Akhir / Final Examination : 30% Alternative Assessment.

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Jadual Pengajaran / *Teaching Schedule*

Minggu Week	Topik & Aktiviti Topic & Activities	Rujukan References
1	Introduction to Module – Big Data applications and NoSQL platforms. Activities: Ice breaking, Lecture 1, and Lab 1, Tutorial 1	Lectuer Notes & Resources
2	Introduction to Hadoop and HDFS Activities: Lecture 2, Lab 2, Tutorial 2	Lectuer Notes & Resources
3	Apache HBase Activities: Lecture 3, Lab 3, Tutorial 3	Lectuer Notes & Resources
4	Apache Spark Activities: Lecture 4, Lab 4, Tutorial 4	Lectuer Notes & Resources
5	Big data technologies and cloud platforms. Activities: Lecture 5, Lab 5, Tutorial 5	Lectuer Notes & Resources
6	Data Management and Storage in the Cloud Activities: Lecture 6, and Lab 6– **Individual Assessment**	Lectuer Notes & Resources
7	Data Visualization in Big Data Activities: Lecture 7 , Tutorial 6	Lectuer Notes & Resources
8	PowerBI for Data Analytics Activities: Lecture 8, Lab 7, Tutorial 7	Lectuer Notes & Resources

9	MongoDB Activities: Lecture 9, Lab 8, **Mid Term**	Lectuer Notes & Resources
10	MongoDB Advanced Concepts Activities: Lecture 10, Lab 9, Tutorial 8	Lectuer Notes & Resources
11	Guest Lecture Tutorial 7	Lectuer Notes & Resources
12	Apache Kafka Streaming Data pipelines Activities: Lecture 11, Lab 10	Lectuer Notes & Resources
13	Generative AI in Big Data Applications **Group assessment presentation -1** Activities: Lecture 12, Tutorial 9	Lectuer Notes & Resources
14	**Revision and group assessment presentation – 2** Case study on Trending Topics in Big Data Applications. Tutorial 10 - Forum Discussion	Lectuer Notes & Resources