

Sesi Akademik <i>Academic Session</i>	2024/2025
Semester/Penggal <i>Semester/Term</i>	1
Kod Kursus <i>Course Code</i>	WQD7007
Tajuk Kursus <i>Course Title</i>	Pengurusan Data Besar <i>Big Data Management</i>
Bahasa Pengantar <i>Medium of Instruction</i>	Bahasa Inggeris <i>English</i>
Rujukan Utama <i>Main Reference</i>	<ol style="list-style-type: none"> 1. Principles and Practice of Big Data: Preparing, Sharing, and Analyzing Complex Information, Jules J. Berman, 2018. 2. Big Data Systems: A 360-degree Approach, Jawwad Ahmed Shamsi and Muhammad Ali Khojaye, 2021. 3. Big Data Fundamentals: Concepts, Drivers, & Technique, Wajid Khattak and Paul Buhler, 2016. 4. MongoDB: The Definitive Guide, Powerful and Scalable Data Storage. Shannon Bradshaw and Eoin Brazil et al., 2019. 5. Big Data Governance: Modern Data Management Principles for Hadoop, NoSQL & Big Data Analytics, Peter Ghavami, 2016. 6. Modern Big Data Processing with Hadoop, V Naresh Kumar & Prashant Shindgikar, 2018.
Strategi Pembelajaran <i>Learning Strategies</i>	<p>Segerak (F2F) Kuliah, tutorial dan makmal Segerak (NF2F) forum atas talian Pelajaran tidak segera: Kuliah pra-rakaman, tutorial pra-rakaman, makmal pra-rakaman</p> <p><i>Synchronous (F2F): Lecture, tutorial and lab</i> <i>Synchronous (NF2F): Online forum</i> <i>Asynchronous lessons: Pre-recorded lecture, pre-recorded tutorial, pre-recorded lab</i></p>
Masa Pembelajaran Pelajar <i>Student Learning Time</i>	<p>Bersemuka / <i>Face to face</i> : 24 Tidak Bersemuka / <i>Non Face to face</i>: 18 Masa Persediaan Pelajar / <i>Student Preparation Time</i>: 78</p>
Kemahiran Boleh Pindah <i>Transferable Skills</i>	<p>Penyelesaian masalah dengan menggunakan kaedah - kaedah statistik, kemahiran menginterpretasi keputusan, dan kemahiran analisis/logikal;</p> <p><i>Problem solving using statistical technique, result evaluation skills, and analysis/logical skills.</i></p>
Pensyarah / <i>Lecturer</i> Bilik / <i>Room</i> Telefon/e-mel <i>Telephone/e-mail</i>	<p>OCC1: Ts. Dr. Mohd Shahrul Nizam Mohd Danuri, B-3-18, 03-79676399, msnizam@um.edu.my (Course Coordinator)</p> <p>OCC2: Assoc. Prof. Dr. Tutut Herawan, B-3-5, 03-99672509, tutut@um.edu.my</p>
Sesi Kuliah / <i>Lecture Session</i> : Hari/Masa / <i>Day/Time</i> Tempat / <i>Venue</i>	<p>Selasa, 6pm-8pm / <i>Tuesday, 6pm-8pm</i> Sabtu, 8am-10am / <i>Saturday, 8am-10am</i></p> <p>MM4/MM4</p>

Sesi Tutorial/Amali: <i>Tutorial/Practical Session:</i> Hari/Masa / <i>Day/Time</i> Tempat / <i>Venue</i>	Selasa, 8pm-9pm / <i>Tuesday, 8pm-9pm</i> Sabtu, 10am-11am / <i>Saturday, 10am-11am</i> MM4/MM4
Perincian Pemberatan Penilaian <i>Detail of Assessment Weightage</i>	Penilaian Berterusan / <i>Continuous Assessment</i> : 60% <ul style="list-style-type: none"> - Tugasan (Minggu 4-5) / <i>Assignment (Week 4-5)</i> : 15% - Ujian pertengahan (Minggu 8) / <i>Mid-term Test (Week 8)</i> : 10% - Ujian Makmal (Minggu 11) / <i>Lab test (Week 11)</i> : 15% - Projek (Minggu 13-14) / <i>Project (Week 13-14)</i> : 20% Peperiksaan Akhir / <i>Final Examination</i> : 40% <ul style="list-style-type: none"> - Penilaian Alternatif 1 (Minggu 14) / <i>Alternative assessment 1 (week 14)</i> : 15% - Penilaian Alternatif 2 (Minggu 14) / <i>Alternative assessment 2 (week 14)</i> : 25%

Jadual Pengajaran / Teaching Schedule

Minggu Week	Topik & Aktiviti Topic & Activities	Rujukan References
1 07 Oct 2024 13 Oct 2024	<p>Topik/ Topic: Pengenalan kepada kursus: Data Besar dari kacamata Dunia Perniagaan & Dunia Sains <i>Introduction to the course: Big Data from Business and Science perspective</i></p> <p>Aktiviti / Activities: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Tutorial (1 jam) / <i>tutorial (1 hour)</i></p>	Bahan atas talian <i>Online material</i>
2 14 Oct 2024 20 Oct 2024	<p>Topik/ Topic: Talian paip Data Besar dengan Hadoop <i>Big Data Pipeline using Hadoop</i></p> <p>Aktiviti / Activities: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Makmal (1 jam) / <i>Lab (1 hour)</i></p>	Bahan atas talian <i>Online material</i>
3 21 Oct 2024 27 Oct 2024	<p>Topik/ Topic: Konsep-konsep pangkalan data bagi data besar: Menyediakan struktur kepada data tidak berstruktur <i>Big data concepts: providing structure for unstructured data</i></p> <p>Aktiviti / Activities: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Tutorial (1 jam) / <i>tutorial (1 hour)</i></p>	Berman (2013) Bahan atas talian <i>Online material</i>
4 28 Oct 2024 03 Nov 2024	<p>Topik/ Topic: Konsep-konsep pangkalan data bagi data besar: Pengenalpastian ontologi <i>Big data concepts: Identification and ontologies</i></p> <p>Aktiviti / Activities: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Makmal (1 jam) / <i>Lab (1 hour)</i> Penghantaran tugas (PDF melalui Spectrum, 10 muka surat, 15%) / <i>Assignment submission (PDF through Spectrum, 10 pages, 15%)</i></p>	Berman (2013) Bahan atas talian <i>Online material</i>
5 04 Nov 2024 10 Nov 2024	<p>Topik/ Topic: Teknologi penyimpanan Data Besar: Capaian data tradisional & pengurusan pangkalan data tradisional <i>Big data technologies: Traditional database management</i></p> <p>Aktiviti / Activities: NF2F: Kuliah pra-rakaman (2 jam) / <i>Pre-recorded Lecture (2 hours)</i> NF2F: Tutorial pra-rakaman (1 jam) / <i>Pre-recorded tutorial (1 hour)</i></p>	Berman (2013) Bahan atas talian <i>Online material</i>

<p>6</p> <p>11 Nov 2024 17 Nov 2024</p>	<p>Topik/ <i>Topic</i>: Pangkalan Data Maju <i>Advance Database</i></p> <p>Aktiviti / <i>Activities</i>: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Makmal (1 jam) / <i>Lab (1 hour)</i></p>	<p>Berman (2013)</p> <p>Bahan atas talian <i>Online material</i></p>
<p>7</p> <p>18 Apr 2024 24 Apr 2024</p>	<p>Topik/ <i>Topic</i>: Teknologi penyimpanan Data Besar: Pengenalan Kepada Pangkalan Data NoSQL (Bahagian 1) <i>Big data technologies: Introduction to NoSQL databases (Part 1)</i></p> <p>Aktiviti / <i>Activities</i>: NF2F: Kuliah pra-rakaman (2 jam) / <i>Pre-recorded Lecture (2 hours)</i> NF2F: Tutorial pra-rakaman (1 jam) / <i>Pre-recorded tutorial (1 hour)</i></p>	<p>Sabharwal and Edward (2014)</p> <p>Bahan atas talian <i>Online material</i></p>
<p>25 Nov 2024 – 01 Dec 2024</p>	<p>Cuti pertengahan Semester <i>Semester Break</i></p>	
<p>8</p> <p>02 Dec 2024 08 Dec 2024</p>	<p>Topik/ <i>Topic</i>: Teknologi penyimpanan Data Besar: Pengenalan Kepada Pangkalan Data NoSQL (Bahagian 2) <i>Big data technologies: Introduction to NoSQL databases (Part 2)</i></p> <p>Aktiviti / <i>Activities</i>: F2F: Kuliah (1 jam) / <i>Lecture (1 hours)</i> F2F: Tutorial (1 jam) / <i>tutorial (1 hour)</i> F2F: Ujian Pertengahan (1 jam, 15%) / <i>Mid term test (1 hour, 10%)</i></p>	<p>Sabharwal and Edward (2014)</p> <p>Bahan atas talian <i>Online material</i></p>
<p>9</p> <p>09 Dec 2024 15 Dec 2024</p>	<p>Topik/ <i>Topic</i>: Teknologi penyimpanan Data Besar: pengaksesan data <i>Big data technologies: Data access</i></p> <p>Aktiviti / <i>Activities</i>: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Makmal (1 jam) / <i>Lab (1 hour)</i></p>	<p>Bahan atas talian <i>Online material</i></p>
<p>10</p> <p>16 Dec 2024 22 Dec 2024</p>	<p>Topik/ <i>Topic</i>: Teknologi penyimpanan Data Besar: pengaksesan data <i>Big data technologies: Data access (Part 2)</i></p> <p>Aktiviti / <i>Activities</i>: F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Tutorial (1 jam) / <i>tutorial (1 hour)</i></p>	<p>Bahan atas talian <i>Online material</i></p>
<p>11</p> <p>23 Dec 2024 29 Dec 2024</p>	<p>Topik/ <i>Topic</i>: Teknologi penyimpanan Data Besar: pengaksesan data <i>Big data technologies: Data access (Part 3)</i></p> <p>Aktiviti / <i>Activities</i>: F2F: Kuliah (1 jam) / <i>Lecture (1 hour)</i></p>	<p>Bahan atas talian <i>Online material</i></p>

	F2F: Tutorial (1 jam) / <i>tutorial (1 hour)</i> F2F: Ujian Makmal (1 jam, 15%) / <i>Lab test (1 hour, 15%)</i>	
12 30 Dec 2024 05 Jan 2025	Topik/ <i>Topic</i> : Asal usul & Kepercayaan terhadap data <i>Data provenance and data trustworthiness</i> Aktiviti / <i>Activities</i> : F2F: Kuliah (2 jam) / <i>Lecture (2 hours)</i> F2F: Makmal (1 jam) / <i>lab (1 hour)</i>	Notes Bahan atas talian <i>Online material</i>
13 06 Jan 2025 12 Jan 2025	Topik/ <i>Topic</i> : Kajian kes <i>Case study</i> Aktiviti / <i>Activities</i> : F2F: Kuliah atas talian secara langsung (2 jam) / <i>Live online Lecture (2 hours)</i> F2F: Makmal atas talian secara langsung (1 jam) / <i>Live online lab (1 hour)</i>	Bahan atas talian <i>Online material</i>
14 13 Jan 2025 19 Jan 2025	Topik/ <i>Topic</i> : Ulangkaji semua topik <i>Wrap up of all topics</i> Aktiviti / <i>Activities</i> : NF2F: Forum atas talian, 2.5 jam / <i>online forum, 2.5 hours</i> F2F: Laporan dan Pembentangan Projek (0.5 jam, 20%) / <i>Project Report and Presentation (0.5 hour, 20%)</i>	Bahan atas talian <i>Online material</i> Laporan projek <i>Project report</i>