



## UNIVERSITI TEKNOLOGI MARA

### CSC787: ADVANCED DATA ORGANIZATION

<b>Course Name (English)</b>	ADVANCED DATA ORGANIZATION <b>APPROVED</b>
<b>Course Code</b>	CSC787
<b>MQF Credit</b>	2
<b>Course Description</b>	This course covers all aspects of data management and organization in a single system and Web environment. The massive data that exists in these systems can be in any form either as primitive or composite. It is important to organize the data in such a way that it suits any given task and the expected results can be achieved. Students will produce the theoretical or system models of data management in relation to a few computing platforms and how such data can be shared (with security and/or policy) among users or application systems.
<b>Transferable Skills</b>	Problem solving and managerial skills developed through tests, assignments and projects.
<b>Teaching Methodologies</b>	Lectures, Lab Work, Discussion
<b>CLO</b>	CLO1 Describe the data model. CLO2 Reorganize the use of data in any application systems. CLO3 Demonstrate the management and organization of data and information in any computer systems
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Introduction</b> 1.1) Overview of Data Type 1.2) Basic, Composite, Abstract and Other Data types 1.3) Relation between Data types	
<b>2. Data Structure</b> 2.1) The Principles 2.2) Data Model	
<b>3. Data Management and Organization</b> 3.1) Definition 3.2) Information Ladder 3.3) Data Processing and Repository	
<b>4. Issues in Data Organization</b> 4.1) Data hierarchy 4.2) Scenario, platform, system 4.3) Coordination, Cooperation, Sharing 4.4) Other issues	
<b>5. Web Data Management and Organization</b> 5.1) Web Standard 5.2) Web Data Repository 5.3) Heterogeneous and distributed environment 5.4) Models, Languages, Techniques	
<b>6. Issues in Data Sharing</b> 6.1) Data policy 6.2) Data security (general and Web structure) 6.3) Other issues	
<b>7. Research in Data Organization</b> 7.1) Current issues	



Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment (20%) to assess the level of competency in handling data model software	20%	CLO2
	Final Test	Final Assessment (Test 2) (20%) to assess the level of knowledge and understanding of data model concepts and techniques.	20%	CLO1
	Individual Project	Individual Project (40%) to assess the ethics and professionalism in exploring data model projects.	40%	CLO3
	Test	Test 1 (20%) to assess the level of knowledge and understanding of data model concepts and techniques.	20%	CLO1

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> <li>• Sherif Sakr, Marcin Wylot, Raghava Mutharaju, Danh Le Phuoc, Irini Fundulaki 2018, <i>Linked Data: Storing, Querying, and Reasoning</i>, 1st Edition Ed., Springer Amazon.com Services LLC [ISBN: 978-331973514]</li> <li>• Heiko Angermann, Naeem Ramzan 2019, <i>Taxonomy Matching Using Background Knowledge: Linked Data, Semantic Web and Heterogeneous Repositories</i>, 1st Edition Ed., Springer [ISBN: 331989157X]</li> <li>• Ryan Wade 2020, <i>Advanced Analytics in Power BI with R and Python: Ingesting, Transforming, Visualizing</i>, 1st Edition Ed., Apress [ISBN: 1484258282]</li> <li>• Steve Hoberman 2019, <i>Data Modeling Master Class Training Manual 8th Edition: Steve Hoberman's Best Practices Approach to Understanding and Applying Fundamentals Through Advanced Modeling Techniques</i> 1st Edition Ed., Technics Publications [ISBN: 1634622111]</li> <li>• Kyle Banerjee 2019, <i>The Data Wrangler's Handbook</i>, 1st Edition Ed., ALA Neal-Schuman [ISBN: 083891909X]</li> <li>• Vaidehi Joshi 2020, <i>Data Structures for the Curious</i>, No Starch Press [ISBN: 1718500327]</li> <li>• Suman Saha, Shailendra Shukla 2019, <i>Advanced Data Structures: Theory and Applications</i>, 1st Edition Ed., CRC Press [ISBN: 1138592609]</li> <li>• Wilfried Lemahieu, Seppe vanden Broucke, Bart Baesens 2018, <i>Principles of Database Management</i>, Cambridge University Press [ISBN: 1107186129]</li> </ul>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources