

1.	Name of Course/Module	Database Design and Management	
2.	Course Code	TDB2121	
3.	Status of Subject	Core for B. Sc Bioinformatics	
4.	MQF Level/Stage	Bachelor Degree – MQF Level 6	
5.	Version (state the date of the last Senate approval)	June 2012	
6.	Requirement for Registration	TDB2111 Database Systems	
7.	Name(s) of academic/teaching staff	Chong Lee Ying Jaya Kumar Krishnan Ooi Shih Yin	
8.	Semester and Year offered	Trimester 1 (Gamma level)	
9.	Objective of the course/module in the programme :		
	To strengthen students' understanding for database systems and provide broader aspects of management (data mining and warehousing) and development of databases.		
10.	Learning Outcomes :		
	At the completion of the subject, students should be able to:		
	LO1: Use advanced SQL command effectively. (Cognitive, Level 3)		
	LO2: Develop a good database based on database development life cycle. (Cognitive, Level 5)		
	LO3: Describe the concepts of various databases. (Cognitive, Level 6)		
	LO4: Design, implementation and management of various databases. (Psychomotor, Level 7)		
11.	Synopsis:		
	To expose student to Database System Application in data processing and management systems in order to prepare the student with the updated database systems of applications.		
	Kursus ini memperkenalkan peri pentingnya sistem pengurusan di dalam mengendalikan aplikasi pengurusan penyata data bersesuaian dengan informasi dan teknologi semasa.		
12.	Mapping of Subject to Programme Outcomes :		
	Programme Outcomes		% of Contribution
	PO1: Apply soft skills in work and career related activities		33.33
	PO2: Demonstrate knowledge and understanding of fundamental concepts, principles and best practices		33.33
	PO3: Analyse the requirements to address problems or opportunities in relevant domains or organisations		22.22
	PO5: Blend innovative mind and entrepreneurial skills		11.11
13.	Assessment Methods and Types :		
	Method and Type	Description/Details	Percentage

	Test	Written Exam	20%
	Lab/Tutorial	Written Exam and Programming Test	10%
	Assignment	Report and Presentation	20%
	Final Exam	Written Exam	50%
14.	Details of Subject		
	Topics	Mode of Delivery	
		Lecture	Lab
	1. Advanced SQL Data Definition, Queries, Update Statements, Creating Views, Additional Constraints, Indexes, Embedded SQL.	8	16
	2. Data Warehousing and Data Mining Basic Concept, Characteristics of Data Warehouse data, Data Warehouse Architecture, Online Analytical Processing, Star Schemas, Data Warehouse Implementation, Data Mining.	6	2
	3. Object Oriented Database Object Identity, Object Structure and Type Construct, Encapsulation of Operations, Methods and Persistence, Type and Class Hierarchies, Inheritance.	6	4
	4. Web Database Web Technology and DBMS, XML Database, XML Data Model, Querying XML with SQL, Querying XML with XQuery, Managing XML.	4	2
	5. Database Administration and Security Data integrity, backup and recovery, Database Administrator (DBA) role and techniques, DBA strategy, DBA tools, Security.	4	4
	Total	28	28
15.	Lab		
	Simulation of Real World Database Project Ending in Full-Scale Installation of a Small to Medium Database System, Assuming Role of Database Designer in Analysis, Design, Coding, and Testing.		
16.	Total Student Learning Time (SLT)	Face to Face (Hour)	Total Guided and Independent Learning
	Lecture	28	28
	Tutorials	-	-
	Laboratory/Practical	28	14
	Presentation	0.5	1.5
	Assignment	-	10
	Mid Term Test	1	5
	Final Exam	2	20
	Quizzes	-	-
	Sub Total	59.5	78.5
	Total SLT	138/40 = 3.45 => 3	
17.	Credit Value	3	

18.	Reading Materials :	
	Textbook	Reference Materials
	<ol style="list-style-type: none"> 1. Peter Rob and Carlos Coronel, Database Systems: Design, Implementation and Management, 9th Edition, Thomson Learning, 2008. 	<ol style="list-style-type: none"> 1. Hoffer, J.A., Prescott, M., Topi, H., "Modern Database Management", 9th Edition, Pearson, 2009. 2. Connolly, T., and Begg, C., "Database Systems: A Practical Approach to Design, Implementation and Management", 4th Edition, Addison-Wesley, 2005. 3. Ramakrishnan, R., and Gehrke, J., "Database Management Systems", 3rd Edition, McGraw Hill, 2003. 4. Kroenke, D., "Database Processing: Fundamentals, Design, and Implementation", 10th Edition, Pearson, 2006.
19.	Appendix (to be compiled when submitting the complete syllabus for the programme) :	
	<ol style="list-style-type: none"> 1. Mission and Vision of the University and Faculty 2. Mapping of Programme Objectives to Vision and Mission of Faculty and University 3. Mapping of Programme Outcome to Programme Objectives 4. Programme Objective and Outcomes (Measurement and Descriptions) 	