

**SUMMARY OF INFORMATION ON EACH COURSE**

1.	Name of Course	Database Fundamentals	
2.	Course Code	TIS1101	
3.	Status of Course [Applies to (cohort) ]	Core	
4.	MQF Level/Stage Note : <i>Certificate – MQF Level 3</i> <i>Diploma – MQF Level 4</i> <i>Bachelor – MQF Level 6</i> <i>Masters – MQF Level 7</i> <i>Doctoral – MQF Level 8</i>	Bachelor – MQF Level 6	
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Previous : June 2014 Current : June 2016	
6.	Pre-Requisite	NIL	
7.	Name(s) of academic/teaching staff	Chua Sook Ling @ Linda Chua Chua Fang Fang Haw Su Cheng Soon Lay Ki Ting Choo Yee Yeoh Eng Thiam	
8.	Semester and Year offered	Trimester 2 (Beta)	
9.	Objective of the course in the programme : To equip students with knowledge of computer databases focusing on design, implementation, recovery, concurrency, and integrity of relational databases.		
10.	Justification for including the course in the programme : To prepare students with the skills to plan, design and manage database systems.		
11.	Course Learning Outcomes :	Domain	Level
	LO1: Describe various types of database technology	Cognitive	1
	LO2: Construct relational database using Entity Relationship (ER) modelling.	Cognitive	3
	LO3: Apply normalization techniques on database relations	Cognitive	3
	LO4: Create relational database using Structured Query Language (SQL).	Cognitive	3

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12.	Mapping of Learning Outcomes to Programme Outcomes :									
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
	LO1		X							
	LO2			X						
	LO3			X						
	LO4	X								
13.	Assessment Methods and Types :									
	Method and Type	Description/Details							Percentage (%)	
	1. Test	Written							30	
	2. Project	Design and develop a relational database system, group work							20	
	3. Lab Test	Practical exercise							10	
	4. Final Exam	Written							40	
14.	Mapping of assessment components to learning outcomes (LOs)									
	Assessment Components	LO1		LO2		LO3		LO4		
	Test	X		X		X				
	Project			X		X		X		
	Lab Test							X		
	Final Exam	X		X		X		X		
15.	Details of Course									
	Topics		Mode of Delivery (eg : Lecture, Tutorial, Workshop, Seminar, etc.) Indicate allocation of SLT (lecture, tutorial, lab) for each subtopic							
			Lecture (Hrs)		Lab (Hrs)		Tutorial (Hrs)			
	1 Introduction Overview of database systems, database systems vs. file systems, various aspects of database systems, terminology: model, schema, instance, database languages, system architecture of a database system, classification of DBMS, DBMS functions		2		2					
	2. Data Modeling The conceptual model, internal model, external model and physical model, Entity-Relationship (ER) model, business rules, entities and entity types, relationships, connectivity, cardinality, constraints, relationship participation, weak entity		6		6					

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	3 Relational Operations Terminology in relational data model, keys, integrity rules, foundations of relational operations in database, Relational Algebra (RA), relational set operators, relational completeness, data abstraction	4	4	
	4 Database Implementation Structured Query Language (SQL): DDL, DML, procedural SQL (Trigger, Stored Procedure, User-defined Function), view	8	8	
	5. Normalization Functional dependencies, normal forms: first normal form, second normal form, third normal form, Boyce-Codd normal form	2	2	
	6. Process of Database Design The Systems Development Life Cycle (SDLC), the Database Life Cycle (DBLC)	2	2	
	7. Trends In Database Current trends in database systems: Web database, XML database, data warehousing and data mining concepts, big data	4	4	
	Total Student Learning Time (SLT)	Face to Face / Guided Learning		Independent Learning
	Lecture	28		28
	Tutorials			
	Laboratory/Practical	28		28
	Presentation	1		3
	Project			10
	Lab Test	1		3
	Test	2		8
	Final Exam	2		18
	Sub Total	62		98
	Total SLT	160		
16.	Credit Value	4		
17.	Reading Materials :			
	Textbooks			

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	Coronel. C , Morris S. & Rob, P (2013). Database Principles: Fundamentals of Design, Implementation, and Management (10 <sup>th</sup> Edition). USA: Course Technology, Cengage Learning			
	Reference Material (including 'Statutes' for Law)			
	Connolly, T. & Begg, C. (2010). A., Database Systems: A Practical Approach to Design, Implementation and Management (5 <sup>th</sup> Edition). USA: Addison-Wesley.			
	Elmasri, R., & Navathe, S. B. (2014). Fundamentals of database systems (6 <sup>th</sup> Edition). Pearson.			
	Jeffrey A. Hoffer, Ramesh Venkataraman and Heikki Topi (2013). Modern Database Management (11th Edition). USA: Prentice Hall			
<p>Appendix (to be compiled when submitting the complete syllabus for the programme) :</p> <ol style="list-style-type: none"> <li>1. Mission and Vision of the University and Faculty</li> <li>2. Programme Objectives or Programme Educational Objectives</li> <li>3. Programme Outcomes (POs)</li> <li>4. Mapping of POs to the 8 MQF domain</li> <li>5. Summary of the Bloom's Taxonomy's Domain Coverage in all the Los in the format below :</li> </ol>				
	<b>Learning Outcomes</b> (please state the learning Outcomes)	<b>Bloom's Taxonomy Domain</b>		
<b>Subject</b>		<b>Affective</b>	<b>Cognitive</b>	<b>Psychomotor</b>
TIS1101	LO1		1	
	LO2		3	
	LO3		3	
	LO4		3	
<ol style="list-style-type: none"> <li>6. Summary of LO to PO measurement</li> <li>7. Measurement and Tabulation of result for LO achievement</li> <li>8. Measurement Tabulation of result for PO achievement</li> </ol>				