



1. Awarding Institution		Universiti Teknologi Malaysia		
2. Teaching Institution		Universiti Teknologi Malaysia		
3. Programme Name		Bachelor in Computer Science (Database Systems)		
4. Final Award		Bachelor of Computer Science (Database Systems)		
5. Programme Code		TC14 (SCD)		
6. Professional or Statutory Body of Accreditation		-		
7. Language(s) of Instruction		Bahasa Melayu and English		
8. Mode of Study (Conventional, distance learning, etc)		Conventional		
9. Mode of operation (Franchise, self-govern, etc)		Self-govern		
10. Study Scheme (Full Time/Part Time)		Full Time		
11. Study Duration		Minimum : 3 years 6 months Maximum : 5 years 6 months		
Type of Semester	No. of Semesters		No. of weeks	
	Full Time	Part Time	Full Time	Part Time
Long	7		14	
Short				
12. Entry Requirement		<ul style="list-style-type: none"> • Matriculation <i>Science Stream:</i> Passed with at least Grade C (2.00) in Mathematics AND passed with at least grade C (2.00) in ONE (1) of these subjects: Physics, Chemistry, Biology, Computer Science • STPM with minimum of C in Advanced Mathematics or Computing and one of the following subjects: Chemistry, Physics or Biology. • Diploma in computer Science form UTM or equivalent with at least PNGK: 2.50 OR Candidates with PNGK < 2.50, with at least 2 years working experience in related area 		

13. Programme Objectives

- i) To produce graduates who are able to use sound computational principles and techniques in solving real world problems across different application areas.
- ii) To produce graduates who are capable of applying efficient and effective scientific approach and tools in designing and building high quality computer programs.
- iii) To produce graduates who are able to plan, analyze, design, implement, evaluate, maintain and manage enterprise wide computer-based projects.
- iv) To produce graduates who are able to communicate effectively across different range of contexts and audiences.
- v) To produce graduates who are able to independently conduct lifelong learning and adapt readily to changing situations.
- vi) To produce graduates who are able to demonstrate consistent professional ethics with high integrity



14. Programme Learning Outcomes

Intended Learning Outcomes	Teaching and Learning Methods	Assessment
(a) Technical Knowledge and Competencies		
LO1		
Ability to demonstrate knowledge and understanding of the theory and principles of Computer Science	Lectures, tutorials, laboratory works, problem-based learning	Examinations, laboratory works, discussions, problem-based exercises, group projects, independent projects.
LO2		
Ability to design and construct computer programs using both structured and object oriented approaches, tools and techniques	Lectures, tutorials, laboratory works, problem-based learning	Examinations, laboratory works, discussions, problem-based exercises, group projects, independent projects.
LO3		
Ability to propose IT related solutions innovatively using appropriate state-of-the-art technology to increase organizations' competitive advantage	Project supervision, lectures, tutorials, independent research, laboratory works, seminars, directed-reading	Examinations, seminar presentations, discussions, problem-based exercises, group projects, independent projects, industrial training feedback
LO4		
The ability to design and model diversity of data type based on the application requirements.	Project supervision, lectures, seminars, laboratory works, directed reading, simulation exercises, independent research	Project reports, seminar presentations, project, individual database system project.
LO5		
Ability to analyze, design and develop various database systems	Project supervision, lectures, invited speakers, seminars, laboratory works, directed reading, independent research, problem-based learning	Problem-based examinations, laboratory reports, seminar presentations, design project, seminar report, individual research project.
(b) Generic Skills		
Intended Learning Outcomes	Teaching and Learning Methods	Assessment
LO6		
Ability to work effectively in a team	Group projects presentation	Oral presentations, peer evaluation
LO7		
Ability to undertake lifelong learning and actively participate in change (Adaptability)	Tutorials, laboratory works, group project assignments, independent reading	Group reports, learning logs/diaries (learning portfolios), seminar presentation,
LO8		
Ability to present technical solutions to a range of audience (Communication Skills)	Individual presentation, Independent research projects, group research projects, industrial training	Oral presentation, peer evaluation, supervisor evaluation
LO9		
Ability to demonstrate behaviors that are consistent with the Code of Professional Ethics and Responsibilities	Independent research projects, group research projects, industrial training	Industrial training report, independent project report, peer evaluation, learning portfolios
LO10		



Ability to think positively and posses self-esteem	Independent research projects, group research projects, industrial training	Written assignment, thesis.
--	---	-----------------------------

15. Classification of Subjects

No.	Classification	Credit Hours	Percentage
i.	University		
	a. General	8	15.0
	b. Language	8	
	c. Co-curriculum	2	
ii.	Faculty Core	72	60.0
iii.	Programme Core	27	22.5
iv.	Programme Electives	3	2.5
v.	Free Electives	0	0
	Total	120	100

For engineering programme please fill up the following classification. (Others please refer to the Statutory Body guidelines)

A	Engineering Subjects (a) Lecture (b) Laboratory/Workshop (c) Industrial Training (d) Final Year Project		
	Total credit hours for Part A		
B	Related Subjects (a) Applied Science/Maths/Computer (b) Management/Law/Humanities/Ethics (c) Co-Curriculum (d) Others		
	Total credit hours for Part B		
iii.	Total Credit Hours for Part A and B		

16. Total credit hours to graduate

120 credit hours



17. Programme structures and features, curriculum and award requirements

The course is offered in full-time mode and based on a 2 Semester Academic Year with several subjects being delivered and assessed in each Semester. Assessment : 25-50% examination, 50-75% coursework

Award requirements:

Students should:

- Achieve a total of 120 credit hours with minimum CPA of 2.0.
- Pass industrial training (equivalent to 12 credit hours).
- Complete the undergraduate project

YEAR 1

SEMESTER I		SEMESTER II	
SCJ1013	Programming Technique 1	SCJ1023	Programming Technique II
SCR1013	Digital Logic	SCR1043	Computer Organization and Architecture
SCD1513	Technology & Information System	SCR1213	Network Communications
SCI1114	Computational Mathematic	SCV1023	Human Computer Interaction
UHS1152	Ethnic Relations	SCD1523	Database
UHB1412	English for Academic Communication	ULT1022	Islamic Civilization and Asia Civilization (TITAS)
		UQRxxx1	Co-Curriculum
Total 17 credit hours		Total 18 credit hours	

YEAR 2

SEMESTER I		SEMESTER II	
SCJ2013	Data Structure and Algorithm	SCJ2203	Software Engineering
SCR2043	Operating Systems	SCI2113	Modeling and Simulation
SCJ2553	Artificial Intelligence	SCD2623	Database Programming
SCD2613	System Analysis and Design	SCD2633	Information Retrieval
SCJ2154	Object Oriented Programming	UHB2422	Advanced English for Academic Communication
ULT2132	Islam & Current Issues	UHS2xx2	Elective UHS
		UQRxxx1	Co-Curriculum
Total 18 credit hours		Total 17 credit hours	

SEMESTER III

SCJ2104 Applications Development

Total 4 credit hours

YEAR 3

SEMESTER I		SEMESTER II	
SCJ3203	Computer Science Theory	SCD3763	Information Technology Entrepreneurship
SCD3713	Database Administration	SCD3743	Enterprise System Design & Modeling
SCD3723	System Development Technology	SCD3753	Data Warehouse & Mining
SCD3733	Multimedia Data Modeling	SCXxxx3	Elective Subject
SCD3032	Undergraduate Project I	SCD3134	Undergraduate Project II
UHB3xx2	Elective English		
SHLxxx2	Elective Foreign Language		
Total 18 credit hours		Total 16 credit hours	

YEAR 4

SEMESTER I	
SCD4118	Practical Training
SCD4114	Practical Training Report
Total 12 credit hours	



18. Mapping of Programme Learning Outcomes to Subjects

	L01	L02	L03	L04	L05	L06	L07	L08	L09	L10
Faculty Core										
SCJ 1013 Programming Technique 1	a	a				1	2	1	1	
SCR 1013 Logic Digital	a		b			1	1			
SCD 1513 Technology & Information System	a	b	b			1	1	2	1	2
SCI 1113 Computational Mathematic	a	b	c			2	2	2	2	2
SCJ 1023 Programming Technique 2	a	a				1	2	1	1	
SCR 1043 Computer Organization & Architecture	a	c	c			1	1			
SCR 1213 Network Communication	a		a			1		2		
SCV 1023 Human Computer Interaction	a	b	b			1	1	2	2	2
SCD 1523 Database	a	b	b	b	a	1	1	2		
SCJ 2013 Data Structure & Algorithm	a	b	b		a	1	1	1	1	
SCR 2043 Operating System	a	c	b		c	2		2		2
SCJ 2553 Artificial Intelligence	a	c	a	a		1	2	1	2	2
SCD 2613 System Analysis and Design	b	a	b	b	a	1	1	1	2	2
SCJ 2154 Object Oriented Programming	a	a	b		c	1	2	1	2	
SCJ 2203 Software Engineering	a	a	b		b	1	1	1	1	2
SCI 2113 Modeling & Simulation	a	b	c			1	2	2	2	2
SCJ 2103 Application Development	a	a	b		b	1	1	1		2
SCJ 3203 Computer Science Theory	a	b	b			1	1	1	2	
SCD 3763 Information Technology Entrepreneurship	b		a	c		1	2	1	2	2



Key:

Technical Skills: a = major contribution to outcome; b = moderate contribution to outcome; c = minor contribution to outcome
Generic Skills: 1 = Substantial (with assessment); 2 = not substantial (introduce)

	L01	L02	L03	L04	L05	L06	L07	L08	L09	L10
Programme Core										
SCD 2623 Database Programming	a	b	a	a	a	1	2	1	2	1
SCD 2633 Information Retrieval	b	b	a		b	1	2	2	1	2
SCD 3713 Database Administration	a	a	b	b	b	1	2	1	2	2
SCD 3723 System Development Technology	a	a	a	a	a	1		1		1
SCD 3733 Multimedia Data Modeling	a	a	a	a	a	1	1	1	2	1
SCD 3743 Enterprise Systems Design & Modeling	b	b	a	a	a	1	2	1	2	2
SCD 3753 Data Warehouse & Mining	b	b	a	b	b	1	1	2	1	1
Programme Electives										
SCD 4813 Intelligent Decision Support System	b	b	b	b	b	1	1	1	2	2
SCD 4823 Knowledge Management System	b	b	a	b	b	1	2	1	2	1
SCD 4833 Information Security & Data Recovery	b		b	c		2	2	1	1	2
SCD 4843 Special Topic	b		b			1	1	1	2	1

Key:

Technical Skills: a = major contribution to outcome; b = moderate contribution to outcome; c = minor contribution to outcome
Generic Skills: 1 = Substantial (with assessment); 2 = not substantial (introduce)

19. Career Prospects

Graduate of the programme can work as a Analyst/Programmer, System Analyst, Information System Developer, Database Administrator, Project Manager, Information System Engineer, Computer Auditor, Assistant Project Manager, Software Engineer, Academician, and Researcher.

20. Cross Campus Programme

nil



21. UTM Degree ++ Programme

Students are given a chance to enroll in certificate programmes offered by Centres of Excellence in the university during their semester breaks. Among related courses offered under the UTM Degree++ programmed are: Linux Fundamental, Linux Network & Administration, PC Installation, PHP Application, MySQL, ASP, Microsoft .Net, Microsoft Visual Basic, Microsoft Project, data analysis software and OpenGL.

22. Facilities available

List of laboratories:

1. Seven (7) general programming laboratory with 60 capacity per laboratory
2. Three (3) teaching laboratory with 60 capacity per laboratory
3. Programming Lab. – 30 capacity
4. Database Teaching Lab. – 30 capacity
5. Information Systems Teaching Lab. – 30 capacity
6. Project Lab. – 30 capacity
7. System Development Lab. – 30 capacity
8. Database Research Lab. – 15 capacity
9. Information Systems Research Lab. – 15 capacity
10. Server Room – 5 capacity

23. Software available

List of software in Information Systems Department:

1. MS Visual Studio.Net Enterprise
2. Expert Choice for Group
3. Group System Online Software
4. Expert Choice for Individual
5. Premium Solver Platform
6. Decision Pro
7. Precision Tree
8. Lotus Domino for Server
9. IPAQ PC Dev. Tools
10. Macromedia Studio MX
11. Oracle 9i Developer Suite
12. Enterprise Server Edition (DB2)