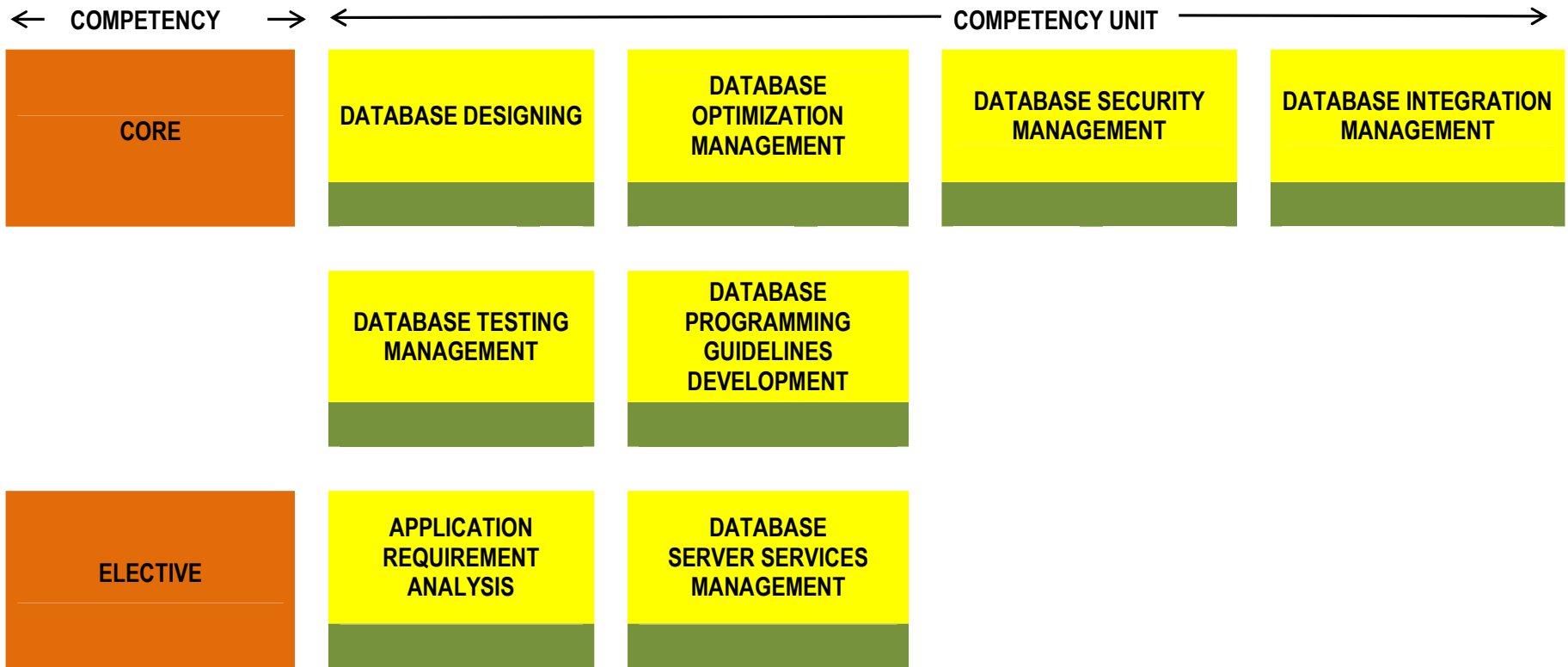


JOB PROFILE CHART (JPC)

SECTOR	INFORMATION AND COMMUNICATIONS TECHNOLOGY		
SUB SECTOR	APPLICATION SYSTEM DEVELOPMENT		
JOB AREA	DATABASE PROGRAMMING		
JOB LEVEL	FIVE (5)	JOB AREA CODE	



COMPETENCY PROFILE (CP)

Sub Sector	APPLICATION SYSTEM DEVELOPMENT
Job Area	DATABASE PROGRAMMING
Level	FIVE (5)

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
1. Database designing		Database designing competency unit describes knowledge, skill and attitude required by a person in designing database using database management tools. The personnel who are competent in database designing shall be able to analyse business requirement and user requirements, create Entity Relationship Model Diagram, create database table structure, carry out database normalisation and validate database design issues according to current industry standard and guideline	<ol style="list-style-type: none"> 1. Analyse business and user requirement 2. Plan database designing activities 3. Perform database design 	<ol style="list-style-type: none"> 1.1 Business rules and user requirement gathered and interpreted 1.2 Data structure and format determined 1.3 Database design determined 2.1 Database design activities interpreted 2.2 Database design work schedule prepared using project planning tools 3.1 Table relationship determined 3.2 Sample data determined 3.3 Draft of database design produced

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
			<p>4. Refine database design</p> <p>5. Produce database design report</p>	<p>4.1 Database design presented to team members / client</p> <p>4.2 Database design structure assessed</p> <p>4.3 Database design validated</p> <p>5.1 Database design report prepared according to company's report format</p>
2. Database optimization management		Database optimisation development competency unit describes knowledge, skill and attitude required by a person to enhance database performance and protect from any errors. The personnel who are competent in database optimisation management shall be able to monitor, coordinate and control optimisation tasks so that database integrity is upheld	<p>1. Analyse database design document</p> <p>2. Analyse database maintenance log</p> <p>3. Plan database optimisation activities</p>	<p>1.1 Database design document interpreted</p> <p>1.2 Physical and logical database design structure interpreted</p> <p>2.1 Database maintenance log interpreted</p> <p>3.1 Optimisation activities workflow defined</p> <p>3.2 Query performance optimisation method interpreted</p> <p>3.3 Database capacity planning prepared</p> <p>3.4 Optimization environment such as hardware, networking connections, server performance, coding, indexes, etc determined</p>

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
			<p>4. Manage database optimisation</p> <p>5. Produce database optimisation management report</p>	<p>4.1 Database design structure enhancement and design script enhancement verified</p> <p>4.2 Database error rectified and solved</p> <p>4.3 Database optimisation tasks coordinated and monitored</p> <p>6.1 Database optimisation management report prepared and presented to team members/ management</p>
3. Database security management	<i>IT - XXX-03</i>	Database security management competency unit describes knowledge, skill and attitude required by a person to prevent security risk and to protect database from unauthorised misuse of database, various security vulnerabilities, data loss and corruption, performance degradation, and etc. The personnel who are competent in database security management shall be able to analyse database security information and manage database security in accordance with current industry standard, ISO/IEC 9075	<p>1. Analyse database security information</p> <p>2. Plan database security management activities</p>	<p>1.1 Data security requirements, authentication requirements, encryption requirements and access control identified</p> <p>1.2 Backup and data retention strategies determined</p> <p>2.1 Database security management activities listed out</p> <p>2.2 Types of database security management to be implemented determined.</p> <p>2.3 Database potential risks anticipated</p>

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
			3. Manage database security 4. Produce database security management report	3.1 Database security setting procedure applied according to current industry standard and guideline 3.2 Database risks control executed 3.3 Database forensic examination monitored 3.4 Database security verified 4.1 Database security management report prepared 4.2 Database security management report presented to the management
4. Database integration management	<i>IT - XXX-04</i>	Database integration management competency unit describes knowledge, skill and attitude required by a person to integrate various database application and platform so that data is available across all different applications. The personnel who are competent in database integration shall be able to create integration scripts, verify database connectivity, validate database integration output and monitor error handling so that all the database applications can be grouped together	1. Analyse database design document 2. Identify database specification 3. Analyse database integration requirements	1.1 Database design document studied 2.1 Database specification determined 2.2 Database integration requirements assessed 2.3 Potential risk assessed 3.1 Database integration flow determined 3.2 Database integration language determined

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
		into one database group and can be pulled up and accessed at any time the data is needed	4. Manage database integration 5. Produce database integration report	4.1 Integration script produced 4.2 Database connectivity checked and verified 4.3 Error handling tasks monitored 5.1 Database integration report prepared according to company's report format
5. Database testing management	<i>IT - XXX-05</i>	Database testing management competency unit describes the knowledge, skill and attitude required by a person in performing database testing that involve preparing and creating testing data, checklist, and schedule and test script. The personnel who are competent in database testing management shall be able to carry out testing management requirement analysis and manage the testing tasks to ensure data integrity, confidentiality and availability is adhered.	1. Analyse database testing management requirements 2. Plan database testing activities 3. Manage database testing 4. Produce database testing management report	1.1 User requirements determined 1.2 Data format and data flow identified 2.1 Database testing management activities determined 2.2 Database testing type determined 3.1 Test script created 3.2 Database testing activities coordinated and monitored 3.3 Database management resources monitored and controlled 3.4 Database test result validated 4.1 Database testing management report prepared according to company's report format

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
6. Database programming guidelines development	IT - XXX-06	Database programming guidelines development competency unit describes the knowledge, skill and attitude required by a person in producing guidelines for the organisation that comply with current industry standard and guideline. The personnel who are competent in database programming guidelines development shall be able to carry out database programming guideline requirements analysis so that the guideline development could be planned and the database programming guideline could be produced.	<ol style="list-style-type: none"> 1. Analyse database programming guidelines requirements 2. Plan database programming guidelines development activities 3. Develop database programming guideline 4. Produce database programming guidelines development work progress report 	<ol style="list-style-type: none"> 1.1 Business and user requirement identified 1.2 Data design requirements interpreted 2.1 Existing guidelines studied 2.2 Current requirements of database programming guidelines interpreted 2.3 Conformity requirement interpreted according to current industry standard and guideline 3.1 Database requirements interpreted 3.2 Database programming guidelines generated according to the company's standard operation procedure. 4.1 Database programming guidelines development work progress report generated

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
7. System requirement study	<i>IT - XXX-07</i>	System requirement study competency unit describes the knowledge, skill and attitude required by a person in determining system requirements. The personnel who are competent in system requirement study shall be able to carry out analysis to determine business requirement, user requirement and system requirement so that system requirement document could be produced as a guideline for the organisation.	<ol style="list-style-type: none"> 1. Identify business and user requirements 2. Identify application requirements 3. Prepare application requirement analysis report 	<ol style="list-style-type: none"> 1.1 Business process interpreted 1.2 User work flow determined 1.3 Business and user requirements determined 2.1 Application requirements determined 2.2 Activity resources organised 3.1 Application requirement interpreted and highlighted in the report 3.2 Application requirement analysis report prepared and presented to the management
8. Database server services assessment	<i>IT - XXX-08</i>	Database server services assessment competency unit describes the knowledge, skill and attitude required by a person in evaluating database server to ensure database is in working according to the company's standard operation procedure. The personnel who are competent in database server services assessment shall be able to analyse services required by the server and manage the server services to ensure the confidentiality, integrity and availability of the database is adhered according to the current industry	<ol style="list-style-type: none"> 1. Analyse database server services management requirements 2. Plan database server services management activities 3. Manage database server services 	<ol style="list-style-type: none"> 1.1 Server service management requirements identified 2.1 Type of database server services identified 2.2 Database server services checklist generated 3.1 Database server services monitored 3.2 Database server services availability, functionality and compatibility verified

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
		standard.	4. Produce database server services management report	4.1 Database server services management report generated in accordance with company's report format