1. General Course Information

1.1 Course Details

Course Code:	**1814ITC**
Course Name:	**Data Management**
Trimester:	**Trimester 2, 2024**
Program:	**Diploma of Information Technology**
Credit Points:	**10**
Course Coordinator:	**Dr Rob Baltrusch**
Document modified:	**23/05/2023**

Course Description

Information derived from data is important to the management, productivity and competitive advantage of an organisation. Data must be efficiently collected, organized, retrieved and managed to make it meaningful to the organisation. It is the role of the IT professional to develop, deploy, manage and integrate data and information systems to support the organisation. This course includes the organisation, modeling, transformation and presentation of data.

This course introduces the fundamental concepts and skills in data management. It focuses on the most widely used relational data model and introduces basic concepts and skills underlying a broad range of database technologies. As a student of this course, you will learn the fundamental concepts in relational databases and be able to apply the knowledge in data management. You will learn skills to produce an Entity Relationship Diagram (ERD) and to map it to a logical database schema. You will learn normalisation techniques and apply them in practical database design to remove data redundancies. You will also learn skills to implement databases and manipulate data through Structured Query Language (SQL), and will have the opportunity to apply such skills to produce relational databases and retrieve data from the databases using SQL statements.

Assumed Knowledge

There are no prerequisites for this course.

1.2 Teaching Team

Your teacher/s can be contacted via email as below:

You will also find their email in the Teacher's tile on your Course Site.

Name	Email
Dr Rob Baltrusch	rob.baltrusch@staff.griffithcollege.edu.au

1.3 Meet with your teacher

Your teacher is available each week to meet outside of normal class times. This is called consultation. Times that your teacher will be available for consultation will be found on the Teacher's tile on your Course Site.

1.4 Timetable

Your timetable is available on the Griffith College Digital Campus at My Apps, Timetable.

1.5 Technical Specifications

All students must have access to a computer or suitable mobile device such as laptop or tablet (mobile phones are not suitable). In addition, up-to-date browser access, a reliable high-speed internet connection with enough upload and download capacity, a webcam and headset including microphone are needed.

2. Aims, Outcomes & Generic Skills

2.1 Course Aims

Data is considered as the most important asset for any business organisations. It is often mentioned that organisations who do not recognise the importance of data management are less likely to survive in the contemporary economy. Therefore, it is indispensable to appreciate the significance of data management in organisations. This course provides students with a hands-on exposure to data management through relational database design, implementation and management. It aims to develop the knowledge and skills necessary for the effective management of data using a relational database. In particular, this course aims at providing students with:

• In-depth knowledge of data, data models and relational database concepts,
• Principles and tools for relational database design,
• Skills to analyse real-world problems and build logical data schema,
• Skills to use SQL for implementation of a database and managing data within it, and
• Basic knowledge of indexes, data warehousing, data analytics, big-data, data mining and visualisation.

2.2 Learning Outcomes

After successfully completing this course you should be able to:

1 Explain the benefits of the database approach in data management, and the key concepts in the relational model.
2 Apply relational database design tools and principles to design a good database schema.
3 Demonstrate the normalisation techniques to remove different data anomalies including data redundancy from relational
database tables.
4 Implement a database using the Structured Query Language (SQL) and manipulate data held in the database using SQL.
5 Explain the basic concepts of indexing, data analytics and non-traditional databases, e.g., NoSQL.

2.3 Graduate Capabilities and Employability Skills

For further details on the Graduate Capabilities and Employability Skills please refer to the Graduate Generic Skills and Abilities Policy.

Griffith College is committed to producing graduates who are able to demonstrate progress toward the development of a number of generic skills / capabilities that will allow them to successfully continue their studies at the tertiary level. This set of skills includes employability related skills that will ensure graduates are capable in the workplace of the future.

Studies in this course will give you opportunities to begin to develop the following skills:

Graduate Capabilities and Employability Skills			Focus within this course
Interacting with People	Teamwork		
	Communication		✓
	Respect for Culture and Diversity		
Readiness for the Workplace	Problem Solving		✓
	Planning and Organisation		
	Creativity and Future Thinking		

3. Learning Resources

3.1 Required Learning Resources

There are no required learning resources. All information required will be available via the course site.

3.2 Recommended Learning Resources

Selected readings will be made available via the course site.

3.3 College Support Services and Learning Resources

Griffith College provides many facilities and support services to assist students in their studies. Links to information aboutsupport resources that are available to students are included below for easy reference.

- Digital Library – Databases to which Griffith College students have access to through the Griffith LibraryDatabases.

- Study Toolbox – there is a dedicated website for this course on the Griffith College Digital Campus.

- Academic Integrity - Griffith College is committed to ensuring academic integrity is understood and maintained byall staff and students. All students learn about academic integrity through engagement with Academic Integrity online modules within the Academic and Professional Studies course.

- Services and Support provides a range of services to support students throughout their studies including academicadvice and assignment help from Student Learning Advisors, and personal and welfare support from Student Counsellors.

- Jobs and Employment in the Student Hub can assist students with career direction, resume and interviewpreparation, job search tips, and more.

- IT Support provides details of accessing support, information on s numbers and internet access and computer lab rules.

3.4 Other Information about your Learning

Preparation and Participation in Learning

You need to prepare before attending your scheduled Learning Experience (In Class). Work through the Learning Content (Before Class) prepared by your teacher which is found on the course site. Make sure you complete the Learning Activities (After Class) set each week. Active participation in your learning will enhance your success. Ask questions when something is unclear or when you want to bring some issue to your teacher's attention; respond to questions to test your knowledge and engage in discussion to help yourself and others learn.

Attendance

You are expected to actively engage in all learning experiences which underpin the learning content in this course. Attendance will be recorded by your teacher in each learning experience to ensure you are meeting the requirements of the program you are studying and/or your visa conditions. You are expected to engage with the learning content and learning activities outside of timetabled class times. You are expected to bring all necessary learning resources to class such as the required textbook and /or Workbook.

Consultation Sessions

Teachers offer extra time each week to assist students outside the classroom. This is known as 'consultation time.' You may seek assistance from your teacher on email or in person according to how the teacher has explained this to the class. Attendance during consultation time is optional but you are encouraged to use this extra help to improve your learning outcomes.

Course Learning Materials

Learning materials are made available to you in the course site. The learning materials are arranged in Modules. In each Module you will find Learning Content (Before Class), Learning Experiences (In Class) and Learning Activities (After Class). **Learning Content (Before Class)** will be engaged with prior to the scheduled **Learning Experience (In Class)**. This will ensure you are prepared for the scheduled Learning Experience (In Class) by being aware of the content to be covered and therefore will be able to actively participate in the session. **Learning Activities (After Class)** are accessed after the scheduled session for purposes of review, consolidation of learning, and preparation for the Evidence of Learning Tasks (Assessments) in the course.

Self-Directed Learning

You will be expected to learn independently. This means you must organise and engage with the course Learning Content (Before Class) even when you are not specifically asked to do so by your teacher. The weekly guide (below) will be helpful to organise your learning. This involves revising the weekly course Learning Content (Before Class) and completing the Learning A ctivities (After Class). It also means you will need to find additional information to evidence your learning beyond that given to you, and to construct your own response to a question or topic. All of this requires careful planning of your time. Expect to spend, on average, at least 10 hours per week including class time for each of your courses.

Program Progression

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, students are engaged in their learning and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program Progression Policy - for more information].

International students enrolled in Language Development Modules (LDM100 / LDM200)

Successful completion of LDM100 and LDM200 is **required** to graduate with your Diploma award and progress to your Bachelor. If you do not achieve non-graded passes for these language modules your progression to your Bachelor will be affected. Please attend all your classes and submit your assessment.

Teacher and Course Evaluation

Your feedback is respected and valued by your teachers. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your teacher or by completing course and teacher evaluations via Griffith College's evaluation tool whenever these are available.

4. Weekly Guide: Learning Content, Learning Experiences and Learning Activities

The information below lays out how your learning will be organised throughout the trimester:

Week	Learning Content (Before Class)	Learning Experiences (In Class)	Learning Activities (After Class)	Evidence of Learning (Assessment)	Learning Outcome
	Module 1: Basics				
1	Data and database models (Major Study Lesson): What are data, a database and a DBMS? What are data models and database schema?	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3
2	Relational Database (Audit): The Relational Data Model, Entity Relationship Diagram (ERD), ERD from business rules	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3
3	Entity Relationship Model (Major Study Lesson): Developing appropriate logical ERD, Converting ERD into a relation, M:N relationships,	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3

	Module 2: Database Design				
4	Functional Dependency & Normalisation (Major Study	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
5	Normal forms & relational database schema (Major Study Lesson): Step-by-step procedure for normalisation, data types, relational database schema	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
6	Relational Model & Structured Query Language (SQL) (Major Study Lesson): Simple SQL statements, constraints	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
	Module 3: Database Manipulation				
7	Structured Query Language (SQL) (Major Study Lesson): Retrieve data from a database, SELECT statement and WHERE clause	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
8	Advanced Structured Query Language (SQL) (Major Study Lesson): SQL functions, group functions, GROUP BY clause, joining two or more tables	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
9	Data Storage and Indexes (Audit): Index, view & security	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
	Module 4: Advanced Topics				
10	Advanced Topic 1 (Audit): Business intelligence, data analysis and visualisation	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4
11	Advanced Topic 2 (Major Study Lesson): Big data, NoSQL, etc.	Weekly in-class activities Discussion forum	Weekly lesson plan activities	Weekly online activities	1, 2, 3, 4

| 12 | Revision (Major Study Lesson): For final exam | Weekly in-class activities Discussion forum | Weekly lesson plan activities | Weekly online activities | 1, 2, 3, 4 |

5. Evidence of Learning (Assessment)

5.1 Evidence of Learning Summary

	Evidence of Learning (Assessment)	Weighting	Learning Outcome	Due Date
1	*Assignment - Laboratory/Laboratory Report Workshops tasks*	15%	1, 2, 3, 4, 5	Weeks 2 - 12
2	*Test or quiz (Short Answer)*	15%	1, 2, 3, 4, 5	Weeks 4, 8, 12
3	*Assignment – Written Assignment Business Case*	20%	1, 2, 3, 4	Week 11
4	*Exam - constructed response Final Exam (must achieve a min of 20 out of 50)*	50%	1, 2, 3, 4, 5	Exam week

5.2 Evidence of Learning Task Detail

Please note that web applications such as ChatGPT, Google Translate, Grammarly and Youdao (or equivalent services) are not permitted for outright assessment creation, translation, or extensive language assistance purposes. Wikipedia, and Baidu, Weibo and WeTalk are not permitted to be used.

Students should follow all teacher directions about the use (or not) of Generative Artificial Intelligence (Gen-AI) tools in terms of formative assessment tasks, citing Gen-AI applications for particular purposes in summative assessment tasks (if relevant) and any other course specific preferences related to the use (or not) of Gen-AI tools. It should be noted that Turnitin now provides teaching staff with a Gen-AI percentage indicator similar to plagiarism detection capabilities accessible to teachers.

1. Evidence of Learning Task 1: Workshops tasks (15%)

Task Type: Assignment - Laboratory/Laboratory Report
Due Date: Weekly (from weeks 2 – 12)
Weight: 15%, Marked out of: 100%
Duration: 2 hours each
Task Description: Students will be required to answer short answer questions in writing, and solve database design challenges and problems by developing, testing, and documenting database designs. There will be several exercises (maximum 10) and each exercise is due in a specific day/time of a week.
Criteria and Marking: Workshop exercises will be assessed primarily by correctness, and secondarily by quality attributes that contribute to the suitability and maintainability of the database design, structure, neatness, clarity, and documentation. Feedback will be given to students one week after the due date during the workshop hours.
Submission: Turnitin via the course site

2. Evidence of Learning Task 2: Quizzes (15%)

Task Type: Test or quiz
Due Date: Week 4, 8, 12
Weight: 5% each (3 quizzes in total), Marked out of: 100%
Duration: 1 hour
Task Description: This is a diagnosis or formative assessment item that will test your understanding and capacity

to apply and critically evaluate the concepts learned in the class. These tests will be based on different types of questions, including short questions and answers, and held in Lecture(s) or Workshop/Lab(s). They may be submitted online and the detail will be announced by the course convenor once the semester starts. During these assessments' dates, each student should be present in their lecture / workshop / lab in which they officially enrolled in to attend the tests

Criteria and Marking: Quizzes will be assessed by correctness and completeness. Feedback will be given to students one week after the due date during the workshop hours.

Submission: Online quiz

3. Evidence of Learning Task 3: Business Case (20%)

Task Type: Assignment - Written Assignment
Due Date: Week 11
Weight: 11%, Marked out of: 100%
Duration: approximately 10 hours of effort
Task Description: This summative assessment task will assess your capability to design a simple but practical relational database using ERdiagram, and analyse it using normal form theory. The implementation of the database will be using the Structured Query Language (SQL).
Criteria and Marking: In general, the marks as well as the feedback will be released to students through the portal within 2 to 3 weeks of the due date of each assignment part. General feedback may be provided during your usual workshop/lab(s) after the marks are released
Submission: Turnitin via the course site

4. Evidence of Learning Task 5: Final Exam (50%)
Task Type: Exam – constructed response
Due Date: Exam Week
Weight: 50%, Marked out of: 100%
Duration: 2 hours
Task Description: This is a closed book summative assessment task that tests your capacity to understand, apply, analyse and critically evaluate the concepts taught in this course.
Criteria and Marking: Responses will be evaluated for correctness and completeness. Feedback will be given to students upon request
Submission: The exam will be held on campus.

In order to pass this Course, students must:

A. Attempt all assessment items
B. demonstrate assurance of learning of all learning outcomes through graded Evidence of Learning Tasks.

5.3 Late Submission

An Evidence of Learning Task submitted after the due date, without an approved extension from the teacher, will be penalised. The standard penalty is the reduction of the mark allocated to the Evidence of Learning Task by 5% of the maximum mark applicable for the Evidence of Learning Task, for each calendar day that the task is late. Evidence of learning tasks submitted more than seven calendar days after the due date are awarded zero marks.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

5.4 Other Information about Evidence of Learning

Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until afterthe release of final results for the Course.

Requests for extension

To apply for an extension of time for an evidence of learning task, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstancesand must be able to be substantiated with relevant documentation [e.g. Griffith College Student Medical Certificate]. Please refer to the Griffith College website – Policy Library for guidelines regarding extensions and deferred Evidence of Learning Tasks.

Return of Evidence of Learning Tasks

1. Marks awarded for in-trimester evidence of learning tasks, except those being moderated externally with Griffith University, will be available on the course site within fourteen [14] days of the due date.

This does not apply to the final evidence of learning task in this course (marks for this task will be provided with the final course result).

2. Students will be advised of their final grade through the Digital Campus. Students can review their final exam papers after student grades have been published. Review of final exam papers will not be permitted after the final date to enrol.

3. Marks for **all** evidence of learning tasks including the final exam (if applicable) will be recorded in the Course Site and made available to students through the Course Site.

The sum of your marks of evidence of learning *tasks in this course does not necessarily imply your final grade for the course. Standard grade cut off scores can be varied for particular courses, so you need to wait for the official release of grades to be sure of your grade for this course.*

6. Policies & Guidelines

Griffith College Evidence of Learning Tasks-related policies can be found in the Griffith College Policy Library which include the following policies:

Assessment Policy, Special Consideration, Deferred Assessment, Alternate Exam Sittings, Medical Certificates,Academic Integrity, Finalisation of Results, Review of Marks, Moderation of Assessment, Turn-it-in Software Use.   These policies can be accessed within the Policy Library

Academic Integrity Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staffto act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academicintegrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and isunacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre- meditated form of cheating is considered one of the most serious forms of fraudulent academic behaviour,for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent todeceive. In these cases, students may be required to undertake additional educational activities to remediatetheir behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your teachers and academic advisors will provide you with guidanceto understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and whenyou are unsure about appropriate academic conduct.

In the case of an allegation of a breach of academic integrity being made against a student he or she mayrequest the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the Griffith College Academic Integrity Policy; this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penaltiesand processes involved when a breach is identified.

For further information please refer to the Griffith College website - Policy Library > Academic Integrity Policy

Reasonable Adjustments for Evidence of Learning Tasks –

The Disability Services Policy (accessed within the Policy Library) outlines the principles and processes that guide the College in making reasonable adjustments to Evidence of Learning Tasks for students with disabilitieswhile maintaining academic robustness of its programs.

Risk Assessment Statement

There are no out of the ordinary risks associated with this course.