

# 7304MGT

## Business Intelligence Systems

### Semester 1 2009

Academic Organisation:	Department of Management
Faculty:	Griffith Business School
Credit point value:	10
Student Contribution Band:	Band 2
Course level:	Postgraduate
Campus/Location/Learning Mode:	Nathan / On Campus / In Person
Convenor/s:	Dr Dale Mackrell (Nathan)
Enrolment Restrictions:	Nil
This document was last updated:	15 December 2008

#### **BRIEF COURSE DESCRIPTION**

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Business intelligence (BI) is a broad term which refers to the combination of software tools, architectures, databases, models and methodologies for assisting decision makers to achieve business objectives. The course provides students with an understanding of the principles of decision making in organisations, an appreciation of the concepts of business intelligence systems (BI) including decision support systems (DSS) across various disciplinary areas, and the acquisition of basic skills in the construction of DSS/BI systems. This course is suitable for students with minimal information systems background since students are introduced to the fundamentals of decision making and BI.

Incompatible: 7304MGT Management Support Systems AND MGT3004 Management Support Systems AND ISM3002 Management Support Systems AND FF13C2G Decision Support Systems AND CIT3172 Intelligent Decision Support Systems

Advised Prerequisite: MGT7206N Information Systems Analysis OR ISM7202 Information Systems Analysis OR FF12C2G Information Systems Analysis OR An equivalent subject

This course is normally offered at:

Nathan Semester 1, NIGHT (even years), DAY (odd years)

## SECTION A – TEACHING, LEARNING AND ASSESSMENT

### COURSE AIMS

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Decision makers increasingly rely on computerised support, from stand-alone software applications on personal desktops to Web-enabled distributed systems for collaborative use at multiple locations across organisations. More and more business intelligence systems incorporate the use of the Internet to deliver high-value performance outcomes to decision makers across large geographically dispersed areas.

Business intelligence (BI) is a broad term which refers to the combination of software tools, architectures, databases, models and methodologies for assisting decision makers to achieve business objectives. Business intelligence systems incorporate computer-based applications such as decision support systems (DSS) to support the decision making of individuals or organisations, business performance management (BPM) to monitor and analyse performance across enterprises, and intelligent decision support systems (IDSS) to integrate knowledge from experts. Collectively the technologies to support decision makers are called management support systems (MSS).

This course is suitable for students with minimal information systems background since students are introduced to the fundamentals of decision making and to the tools, technologies and models which enhance decision making in a business environment. As well, the societal issues associated with the implementation of BI such as the trend towards a 'digital divide' as well as the principal ethical and legal issues are explored.

### LEARNING OUTCOMES

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Upon satisfactory completion of the course, students will be equipped with the knowledge and skills to:

1. Understand how computer-based information systems can support managerial decision making and problem solving in the contemporary business world
2. Recognise the latest technologies, collectively termed management support systems (MSS), tools and models which are available to assist in managerial decision making
3. Appreciate existing business intelligence systems (BI) and decision support systems (DSS) principles and practices
4. Acquire a working knowledge of how BI/DSS systems are constructed and how such systems are integrated into the corporate environment
5. Improve conceptual, problem solving, and decision making abilities
6. Improve interpersonal skills through teamwork as well as oral and written communication skills
7. Appreciate the societal, ethical and legal issues associated with the integration of MSS in enterprises

### CONTENT, ORGANISATION AND TEACHING STRATEGIES

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The course is organised in the following way:

**Lectures (Week 1 – 13):** Students are expected to attend all the lecture sessions during the semester. During the lecture, a presentation will be made highlighting the principles that are deemed to be important and providing instruction relevant to assessment work. Some lectures will include videos and/or student activities. Guest lecturers may also present during the semester.

**Computer Laboratories (Week 2-12):** Computer workshops will be conducted every week from week 2 and will synergise with lectures. Workshops will comprise: exercises on relevant topics; discussions using realistic case studies; review questions and other content from the textbook. Some workshops may include student activities and/or help sessions for assignments. Students will benefit from having read prescribed chapters and attempted some exercises in advance of workshops.

**Learning@Griffith Website:** The **Learning@Griffith website** provides access to course tools for lecture notes, workshop and assessment details, an electronic announcement board advising of current course activities, and communication tools for sending emails and for effective teamwork. This course is categorised as Web Dependent. That is, the use of the Web to access instructional material and to communicate with staff is mandatory in this course.

## **CONTENT SUMMARY**

The course will be delivered in the following manner. Students will be advised if the order of topics vary.

<b>Week</b>	<b>Lecture Content</b>	<b>Lecture Readings</b>	<b>Workshop/Laboratory Content</b>
1.	Introduction to Decision Support Systems (DSS) and Business Intelligence (BI)	Chapter 1	<b>No Workshop</b>
2.	Decision Making and Computer-based Support using Management Support Systems (MSS)	Chapter 2	Discussion Questions Page 39 Internet Exercises # 2, 3, 7 and 11 Page 40 Case Studies Pages 4 and 41
3.	Decision Support Systems from Concepts to Analysis	Chapter 3	Discussion Questions Pages 77 and 78 Case Studies Pages 46, 75 and 80 Use <i>VisiRule</i>
4	Decision Support Systems Models and Modelling	Chapter 4	Discussion Questions Page 126 Case Studies Pages 85 and 116 Use <i>Excel Spreadsheets</i> – Goal-Seek, Solver, Scenarios
5.	Business Intelligence Essentials	Special Section	Discussion Questions Page 177 Case Study Page 139 Use <i>Access Database</i> with Queries
6.	Data Warehousing	Chapters 5	Discussion Questions Page 247 Case Study Page 207 Use <i>Visual Prolog</i>
<b>Mid Semester Vacation No Classes</b>			
7.	Data, Text and Web Mining, and Neural Networks	Chapters 7 and 8	Discussion Questions Page 338 Case Study Page 312 Internet Exercises on Neural Networks Web Sites - Supplementary
8.	Business Analytics and Business Performance Management	Chapters 6 and 9	Discussion Questions Page 473 Case Studies Pages 284 and 419
9.	Collaborative Computer-Supported Technologies	Chapter 10	Discussion Questions Page 473 Case Study Page 446
10.	<b>No Lecture</b>		<b>Individual Project and Report Due</b>
11.	Knowledge Management	Chapter 11	Discussion Questions Page 522 Case Study Page 518
12.	Artificial Intelligence and Expert Systems	Chapters 12, 13 and 14	Discussion Questions Page 572 Case Study Page 544

Week	Lecture Content	Lecture Readings	Workshop/Laboratory Content
13.	Future Directions Societal, Ethical and Legal Impacts of Implementation Course Review	Chapter 16	<b>No Workshops</b>

## ASSESSMENT

Item	Assessment Task	Length	Weighting	Total Marks	Relevant Learning Outcomes	Due Day and Time
1.	Group Project (2-3 Members)	20 Minutes Presentation 1000 Word Report and Reflective Log	25%	25	All except 4 and 7	During Workshops from Weeks 5 to 9
2.	Individual Project	Build DSS/BI Prototype 1000 Word Report	35%	35	All except 6 and 7	Due Week 10
3.	Final Examination	1 ½ Hours	40%	40	All except groupwork	Exam Period

**The Group Project** is a group effort to demonstrate each student's organisational abilities and communication skills as an effective member of a study team. The purpose of this assignment is to develop a proposal for a computer-based DSS/BI prototype which will be constructed individually. The group project consists of a presentation to which each group member will be expected to contribute, a group report, and an individual reflective log in which each group member will reflect frankly on their experiences of team work. The group project will be an opportunity to consider the most recent academic and industry literature on DSS/BI in a selected discipline. Discipline selection is dependent on the group's knowledge of their proposed field and will be carried out by groups in consultation with the convenor of the course. The group project fulfils all the learning objectives other than learning outcomes 4 and 7.

**The Individual Project** will require each student to build a DSS/BI prototype based on the group proposal using any software package the student is familiar with. The assignment is designed to assess each student's ability to develop a DSS/BI for a set problem and to communicate the solution in a written report. The individual project and report fulfils all learning objectives except oral communication and group work.

**The Final Examination** will take place in the end of semester examination period. It will assess each student's overall knowledge of the course, in particular, critical analyses of the theoretical aspects of topics. The examination will take the form of short and long answer questions, multiple choice, true / false questions and discussions of case studies. The final examination addresses all learning outcomes other than oral communication and groupwork.

Students are required to satisfactorily complete all three items of assessment in order to pass the course.

### Return of Assessment Items

Students will be advised about the collection of submitted assessment items on the [Learning@Griffith](mailto:Learning@Griffith) website.

### Notification of Availability of Feedback on Assessment

Marks will be posted on the [Learning@Griffith](#) website. Feedback will be available in several ways: notes on the assessment item by the marker; comments at lectures and workshops; and in face-to-face consultation with teaching staff if requested.

## **GRADUATE SKILLS**

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The Griffith Graduate Statement states the characteristics that the University seeks to engender in its graduates through its degree programs. This course contributes to the development of all or some of these graduate skills as shown in the following table.

<b>Graduate Skills</b>	<b>Taught</b>	<b>Practised</b>	<b>Assessed</b>
Effective communication (written)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Effective communication (oral)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Effective communication (interpersonal)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Information literacy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Problem solving	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Critical evaluation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Work autonomously	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Work in teams	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Creativity and innovation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ethical behaviour in social / professional / work environments	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Responsible, effective citizenship	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## **TEACHING TEAM**

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<b>Convenor Details</b>	<b>Nathan</b>
Campus Convenor	Dr Dale Mackrell
Email	d.mackrell@griffith.edu.au
Office Location	N63_2.21
Phone	373 57356
Fax	373 53887
Consultation times	To be advised

## **COURSE COMMUNICATIONS**

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Members of the teaching team will be available for several hours weekly for face-to-face consultations with students. The details of time and location will be posted on Learning@Griffith early in the semester. The use of email is recommended for a timely response to student queries. All email must be from Griffith University email account with the course code in the subject heading.

If students wish to communicate with each other as a group, group accounts can be established upon request by the course convenor to enable group members to communicate through discussion forums, virtual classrooms, file exchanges, and group emails.

Issues of relevance to most or all students enrolled in the course will be dealt with using the announcements tool in Learning@Griffith. Students are advised to regularly check this noticeboard for up-to-date course information. On occasions, the course convenor may contact students by email.

## TEXTS AND SUPPORTING MATERIALS

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### Prescribed Text:

- Turban, E., Aronson, J., Liang, T. and Sharda, R. (2007) *Decision Support and Business Intelligence Systems*, 8<sup>th</sup> Edition, Prentice-Hall, Upper Saddle River, New Jersey.

### Reference Reading:

- Turban, E., Sharda, R., Aronson, J. and King, D. (2008) *Business Intelligence: A Managerial Approach*, Prentice-Hall, Upper Saddle River, New Jersey.
- McNurlin, B.C., and Sprague Jnr, R.H. (2002) *Information Systems Management in Practice*, 5<sup>th</sup> Edition, Prentice-Hall, Englewood Cliffs, New Jersey.
- Mallach, E.G. (2000) *Decision Support and Data Warehouse Systems*, McGraw-Hill, Boston MA.
- Marakas, G.M. (2003) *Decision Support Systems in the 21st Century*, Prentice-Hall, Upper Saddle River, New Jersey.

The text specified as required reading is available for purchase from the university bookshop. The required text and most other references are available for borrowing from the university library.

## SECTION B – ADDITIONAL COURSE INFORMATION

Please refer to the following web address for guidelines on Assessment Policy including late submission of assessment items:

<http://www62.gu.edu.au/policylibrary.nsf/mainsearch/65e95921348eb64c4a256bdd0062f3b0?opendocument>

## SECTION C – KEY UNIVERSITY INFORMATION

### ACADEMIC MISCONDUCT

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Students must conduct their studies at the University honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is academic misconduct and is unacceptable.

Some students engage deliberately in academic misconduct, with intent to deceive. This conscious, pre-mediated form of cheating is one of the worst forms of fraudulent academic behaviour, for which the University has zero tolerance and for which penalties, including exclusion from the University, will be applied.

However the University recognises many students commit academic misconduct without intent to deceive. These students may be required to undertake additional educational activities to remediate their behaviour.

Specifically it is academic misconduct for a student to:

- **Cheat in examinations and tests** by communicating, or attempting to communicate, with a fellow individual who is neither an invigilator or member of staff; by copying, or attempting to copy from a fellow candidate; attempting to introduce or consult during the examination, any unauthorised printed or written material, or electronic calculating or information storage device; or mobile phones or other communication device, or impersonates another.
- **Fabricate results** by claiming to have carried out tests, experiments or observations that have not taken place or by presenting results not supported by the evidence with the object of obtaining an unfair advantage.

- **Misrepresent themselves** by presenting an untrue statement or not disclosing where there is a duty to disclose in order to create a false appearance or identity.
- **Plagiarise** by representing the work of another as their own original work, without appropriate acknowledgement of the author or the source. This category of cheating includes the following:
  1. collusion, where a piece of work prepared by a group is represented as if it were the student's own;
  2. acquiring or commissioning a piece of work, which is not his/her own and representing it as if it were, by
    - purchasing a paper from a commercial service, including internet sites, whether pre-written or specially prepared for the student concerned
    - submitting a paper written by another person, either by a fellow student or a person who is not a member of the University;
  3. duplication of the same or almost identical work for more than one assessment item;
  4. copying ideas, concepts, research data, images, sounds or text;
  5. paraphrasing a paper from a source text, whether in manuscript, printed or electronic form, without appropriate acknowledgement;
  6. cutting or pasting statements from multiple sources or piecing together work of others and representing them as original work;
  7. submitting, as one own work, all or part of another student's work, even with the student's knowledge or consent.

A student who willingly assists another student to plagiarise (for example by willingly giving them their own work to copy from) is also breaching academic integrity, and may be subject to disciplinary action.

Visit the University's Institutional Framework for Promoting Academic Integrity Among Students for further details.

## **PLAGIARISM DETECTION SOFTWARE**

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The University uses plagiarism detection software. Students should be aware that your Course Convenor may use this software to check submitted assignments. If this is the case your Course Convenor will provide more detailed information about how the detection software will be used for individual assessment items.

## **HEALTH AND SAFETY**

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Griffith University is committed to providing a safe work and study environment, however all students, staff and visitors have an obligation to ensure the safety of themselves and those whose safety may be affected by their actions. Staff in control of learning activities will ensure as far as reasonably practical, that those activities are safe and that all safety obligations are being met. Students are required to comply with all safety instructions and are requested to report safety concerns to the University.

General health and safety information can be obtained from [http://www.griffith.edu.au/hrm/health\\_and\\_safety/](http://www.griffith.edu.au/hrm/health_and_safety/)

Information about Laboratory safety can be obtained from [http://www.griffith.edu.au/ots/secure/health/content\\_labsafety.html](http://www.griffith.edu.au/ots/secure/health/content_labsafety.html)

## **KEY STUDENT-RELATED POLICIES**

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All University policy documents are accessible to students via the University's Policy Library website at: [www.griffith.edu.au/policylibrary](http://www.griffith.edu.au/policylibrary). Links to key policy documents are included below for easy reference:

[Academic Calendar](#)

[Academic Standing, Progression and Exclusion Policy](#)

[Assessment Policy](#)

[Examinations Timetabling Policy and Procedures](#)

[Guideline on Student E-Mail](#)

[Health and Safety Policy](#)

[Institutional Framework for Promoting Academic Integrity Among Students](#)

[Policy on Student Grievances and Appeals](#)

[Student Administration Policy](#)

[Student Charter](#)

## **UNIVERSITY SUPPORT RESOURCES**

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The University provides many facilities and support services to assist students in their studies. Links to information about University support resources available to students are included below for easy reference:

[Learning Centres](#) - the University provides access to common use computing facilities for educational purposes. For details visit [www.griffith.edu.au/cuse](http://www.griffith.edu.au/cuse)

[Learning@Griffith](#) - there is a dedicated website for this course via the Learning@Griffith student portal.

[Student Services](#) facilitate student access to and success at their academic studies. Student Services includes: Careers and Employment Service; Chaplaincy; Counselling Service; Health Service; Student Equity Services (incorporating the Disabilities Service); and the Welfare Office.

[Learning Services](#) within the Division of Information Services provides learning support in three skill areas: computing skills; library skills; and academic skills. The study skills resources on the website include self-help tasks focusing on critical thinking, exam skills, note taking, preparing presentations, referencing, writing, proof reading, and time management.