PROPOSAL TO INTRODUCE A NEW COURSE
(formerly known as subject)

1. COURSE DETAILS

1.1 Course ID COMP9318

1.2 Course name – Long
Data Mining and Data Streams: Applications, Systems, and Techniques.

1.3 Course name – Abbreviated
Data Mining and Data Streams

1.4 Course Authority **ext/email**
Xuemin Lin **6493/lxue@cse.unsw.edu.au**

1.5 Organisational Unit responsible for course

School: Computer Science and Engineering **Faculty: Engineering**

Academic Group Code (Faculty): ENG
Academic Organisation Code (Owner): COMPSC

1.6 Justification of Proposal

The database group aims to develop a complete set of courses, which may cover all the important topics in modern database systems and applications, and are comparable to those offered in the leading universities worldwide. The proposed course is one component of such a set.

Currently, there are 5 courses in the area of database systems and applications: COMP3311, COMP9311, COMP9314, COMP9315, and COMP9316. COMP3311/9311 are introductory courses in database systems and focus on the database design techniques and database languages. COMP9315 focuses on the internals of database management systems. COMP9316 concentrates on system fundamentals in E−Commerce applications, while COMP9314 introduces the web database technology.

The proposed course will focus on an important database application area – data mining and data streams. Data mining and data streams is a highly inter−disciplinary area representing a confluence of several disciplines, such as database systems, data warehouse, data streams, machine learning, statistics, algorithms, and data visualization. It is in great demand in many applications, including financial market analysis, network traffic monitoring, Internet management and analysis, etc. This course will provide the foundations of effective data analysis in those applications, and the students are expected to gain the basic skills to process those modern business analyses. This course will cover the *principles*, *algorithms*, *implementations*, and *applications* of data mining and data streams.

Currently, there are no courses in the campus covering the topics listed above.

1.7 Consultation Process
The Head of School, AI and Database groups.

1.8 Units of credit (UOC)	**Session/s offered**	**Hours Per Week**
6	S2	3

1.9 Pre-requisites: COMP3311/9311, COMP9417
Co-requisites: N/A
Exclusions: N/A

1.10 Proposed Entry in the Faculty Handbook

Data Mining: (a) *Fundamentals*– data mining process and system architecture, data warehouse and OLAP, data pre-processing. (b) *Mining Techniques* and *Application:* association rules, mining spatial databases, mining multimedia databases, web applications, time-series, text mining, etc. **Data Streams:** (a*) Stream Processing Models.* (b) *Techniques for Summarizing and Mining Streams*: samples, sketches, histograms, wavelets, and randomised algorithms. The lecture materials will be complemented by projects /assignments.

1.11 Is this course replacing an existing course?

NO X

1.12 Undergraduate / Postgraduate

1.13 Elective

1.14 Program stage
Usually taken in Stage IV (first offered in S2, 2003)

1.15 Program/s in which course is be available
BE (CE 3645; SE 3648; BioInf 3647), BSc (CS 3978), plus combined degrees involving any of these, and the following postgraduate programs: MEngSc 8685; McompSc 8680; MInfSc 8508; MSc 2665; ME 2765; PhD 1650;

1.16 Proposed teaching methods and assessment practices
Examinable (formal) and assignments

1.17 Assessment grades to be used
Full range of grades (HD, DN, CR, PS, FL)

1.18 Mode of delivery

Internal	X
External	
Other (specify)	

1.19 Information Technology Requirements for students
Standard for Computer Science and Engineering

1.20 Textbooks

Set textbooks: none
Recommended References:
- Jiawei Han and Micheline Kamber, *Data Mining: Concepts and Techniques*, Morgan Kaufman,

2001.

- M. Garofalakis, J. Gehrke, and R. Rastogi, *Query and Mining Data Streams: You only get one look*, Tutorial Notes in VLDB2002.
- U. Fayyad, G. Grinstein, and A. Wiese, *Information Visualization in Data Mining and Knowledge Discovery*, Morgan Kaufman, 2001.
- D. J. Hand, H. Mannila, and P. Smyth, *Principles of Data Mining*, MIT press, 2001.
- R. Motwani and P. Raghavan, *Randomized Algorithms*, Cambridge, 1995.
- Selected papers from the conference proceedings of SIGMOD, VLDB, FOCS, SODA,ICALP, ICDE, etc.

1.21 Industrial experience component

N/A

2. RESOURCE STATEMENT

2.1 Enrolments

Estimated or proposed enrolments for the next three years.

2003: 70

2004: 80

2005: 80

2.2 Resource Requirements

Staffing Requirements:

Hours per week

Full−time Academic Staff: 5 hours/week (one semester only)
Part−time Teaching Staff: 6 hours/week.
General Staff: Covered by standard support of the Computer Support Group

Field Costs:	N/A
Studio/Laboratory Requirements:	N/A
Materials Requirements:	N/A
Equipment Costs:	N/A
Computing Requirements:	Use of existing facilities in the school
Library Requirements:	Standard textbooks for reference, journal articles and conference proceedings
Capital Funds Requirements:	N/A

2.3 Servicing Implications:

N/A

2.4 Teaching Arrangements:

YES	
NO	X

2.5 Alternative Delivery Arrangements:

N/A

2.6 Details of Tuition Fees:
Proposed fee: standard for Engineering courses of this type.

$ for non–award enrolment (local)

$ for non–award enrolment (international)

$ for course which forms part of full fee–paying program (for local students)

$ for course which forms part of full fee–paying program (for international students)

3. AUTHORISATION

3.1 Principal Librarian's Endorsement

I have examined the Library needs related to the above proposal and certify that existing Library holdings, staffing, services and accommodation are adequate / inadequate (delete one) to cover the demands that are inherent in it.

Appropriate arrangements for the use of digitised material to support this course have been made by the Course Authority with the Principal Librarian.

Further Comments:

Principal Librarian
/ /2001

3.2 Head of School's Approval

I have examined the resource implications of the above proposal in regard to staff, space, materials, equipment, capital funds, and computing, and certify that the School can cover the demands that are inherent in it.

Further Comments:

Head of School
/ /2001

3.3 Dean's Approval

I have examined the resource implications of the above proposal in regard to staff, space, materials, equipment, capital funds, and computing, and certify that:

3.3.1 (i) the proposal involves no additional resources. (A statement from the Head of School explaining how this can be achieved must be provided); or

(ii) the proposal involves additional resources and it is proposed to redeploy existing resources within the faculty. (A statement from the Head of School explaining how this will be achieved must be provided); or

(iii) the proposal involves additional resources to be obtained as set out below; or

(iv) the additional resources essential to bring the proposal into effect cannot be found within resources available to the faculty.

3.3.2 a fee will / will not (delete one) be charged for this course. If a fee is to be charged the Dean certifies as follows:

I have ensured that the Vice−Chancellor has been advised of the proposed fee arrangements, and note that approval of fee arrangements is needed before a new course can be implemented.

3.3.3 the proposal conforms to the University's commitment to Equal Opportunity in Education.

Statement from Head of School on Source of Additional Resources and/or Further Comments:

Dean
/ /2001