

PROPOSAL TO INTRODUCE A NEW COURSE

(formerly known as subject)

1. COURSE DETAILS

1.1 Course ID COMP4152

1.2 Course name - Long

Reasoning about Knowledge in Distributed Systems

1.3 Course name - Abbreviated

Knowledge in Distributed Systems

1.4 Course Authority A/Prof R. van der Meyden **ext/email**
meyden@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

This course is targeted to fourth year and postgraduate research students, intended to bring them into contact with current research topics in the theory of concurrent and distributed systems being pursued in current research at UNSW.

1.7 Consultation Process

CSE Teaching Committee

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

1.9 Pre-requisites:

Permission of the Instructor. The course will assume a sound working grasp of basic concepts of discrete mathematics. Prior exposure to an area of logic in computer science is desirable, and familiarity with concurrent and distributed computing beneficial.

Co-requisites:
Exclusions:

1.10 Proposed Entry in the Faculty Handbook

COMP4152 Reasoning about Knowledge in Distributed Systems Staff Contact: A/Prof. R. van der Meyden
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UOC6 HPW3 S2

Topics from: Modal Logics of Knowledge, Common Knowledge and Time. Distributed Knowledge.

Semantics in concurrent and distributed systems. Applications to reasoning about distributed algorithms (e.g. Byzantine agreement, reliable message passing across unreliable channels).

Applications to computer security (information flow security, cryptographic protocols), and multi-agent systems. Completeness results, verification techniques. Logics of Knowledge and Probability. Connections to game theory.

1.11 Is this course replacing an existing course?

YES

NO X

1.12 Undergraduate & Postgraduate

1.13 Elective

1.14 Program stage

Stage 4 or Masters/PhD

1.15 Program/s in which course is be available

All CSE programs

1.16 Proposed teaching methods and assessment practices

Lectures. Assessment by assignments and final exam.

1.17 Assessment grades to be used

full range of grades ie. HD, DN, CR, PS, FL;

1.18 Mode of delivery

Internal X

External

Other (specify)

1.19 Information Technology Requirements for students

Standard requirements for School of Computer Science and Engineering

1.20 Textbooks

Reasoning about Knowledge, R Fagin J Halpern, Y Moses, M Vardi, MIT Press
(available in UNSW Library S153.43/52)

Selected papers from the literature.

1.21 Industrial experience component

None

2. RESOURCE STATEMENT

2.1 Enrolments

Estimated or proposed enrolments for the next three years.

2008: 10

2009: 15

2010: 15

2.2 Resource Requirements

Staffing Requirements:

Lecturer only.

Field Costs: N/A

Studio/Laboratory Requirements: N/A

Materials Requirements: N/A

Equipment Costs: N/A

Computing Requirements: Current CSE facilities will suffice

Library Requirements: Standard text requirements for a small course

Capital Requirements: Funds N/A

2.3 Servicing Implications:

N/A

2.4 Teaching Arrangements:

(i) Will other units contribute on a regular basis to the teaching of this course?

YES

NO X

(ii) If so, which units are involved and what proportion of the course will they teach?

2.5 Alternative Delivery Arrangements:

N/A

2.6 Details of Tuition Fees:

Standard fee structure for Faculty of Engineering courses of 6uoc.

3. AUTHORISATION

3.1 Principal Librarian's Endorsement

Note: *this section of the Proposal must be signed by a Library representative, stating:*

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
/ /2007

3.2 Head of School's Approval

Note: *this section of the Proposal must be signed by the Head of School, stating:*

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
/ /2007

3.3 Dean's Approval

Note: *this section of the Proposal must be signed by the Dean, stating:*

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

(Tick whichever is applicable)

- 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 **Fees** (delete if not applicable):

- a fee will not be charged for this program (other than HECS)
- a fee will be charged for this program for local fee-paying students
- a fee will be charged for international students

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 the new program 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:
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Dean
/ /2007