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

1. COURSE DETAILS

1.1 Course ID

1.2 Course name – Long

Advanced Topics in Concurrency

1.3 Course name – Abbreviated

Advanced Concurrency

1.4 Course Authority A/Prof R. van der Meyden **ext/email** 4897 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 intended as a generic template for a variety of advanced courses in the theory of concurrent and distributed systems for fourth year and postgraduate research students, intended to bring students into contact with current research topics in the theory of concurrent and distributed systems. In 2003 it will be offered by a NICTA visitor, Dr Rob van Glabbeek, formerly of Standford. In subsequent years it could be offered by Ron van der Meyden, Kai Engelhardt, or NICTA staff.

1.7 Consultation Process

Associate Head of School

1.8 Units of credit (UOC) 6 Session/s offered S2 Hours Per Week 3L 1T

1.9 Pre–requisites:

COMP3151 or Permission of the Instructor

Co–requisites:
Exclusions:

1.10 Proposed Entry in the Faculty Handbook

COMP4?
Advanced Topics in Concurrency
Staff Contact: A/Prof. R. van der Meyden
UOC6 HPW4 S2

Topics chosen from: semantic models of concurrent and distributed systems (e.g. process algebra, event structures, Petri nets, Chu spaces), linear versus branching time, interleaving versus partial order semantics, true concurrency, semantic equivalences, modal and temporal logic for concurrent systems (proof theory and applications), algorithmic verification (model checking, automata on infinite structures, synthesis), reasoning about knowledge in distributed systems.

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, first offered S2 2002

1.15 Program/s in which course is be available

All CSE programs

1.16 Proposed teaching methods and assessment practices

Lectures plus tutorials and homework assignments
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)

When taught by NICTA staff, NICTA Canberra node
may wish to have the course delivered via the videoconferencing facility so as to be available to students at ANU. Details to be worked out with ANU. Video–conferencing costs will be NICTA's responsibility.

1.19 Information Technology Requirements for students

1.20 Textbooks

Will vary from year to year, depending on instructor and
topic. Textbooks indicative of potential course content include:

JCM Baeten and WC Weijland, Process Algebra, Cambridge Tracts in Theoretical Computer Science, 1990

WJ Fokkink, Introduction to Process Algebra, Texts in Theoretical Computer Science, Springer

Model Checking, EM Clarke, O Grumberg, DA Peled, MIT Press

Computer Aided Verification of Coordinating Processes, RP Kurshan,
Princeton Series in Computer Science

Reasoning about Knowledge, R Fagin J Halpern, M Vardi, MIT Press

1.21 Industrial experience component

None

2. RESOURCE STATEMENT

2.1 Enrolments

Estimated or proposed enrolments for the next three years.

2003: 10

2004: 15

2004: 15

2.2 Resource Requirements

Staffing Requirements:

Hours per week

Full−time Academic Staff

Part−time Teaching Staff

General Staff

Field Costs:

Studio/Laboratory Requirements:

Materials Requirements:

Equipment Costs:

Computing Requirements:

Library Requirements:

Capital Funds Requirements:

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:
Fees for courses are calculated on a pro–rata basis.
Proposed fee:

$ 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

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
/ /2002

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
/ /2002

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:

Dean
/ /2002