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

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For assistance in completing the Form in the first instance contact:

Your Registrar’s Nominee OR members of the Secretariat team:

Lynda Ho ext 2792 or email l.ho@unsw.edu.au Medicine and Arts & Social Sciences.

Peter King ext 3073 or email p.king@unsw.edu.au Science, Commerce & Economics and Engineering.

Sandra Basir ext 3289 or email s.basir@unsw.edu.au Australian Graduate School of Management, Built Environment, College of Fine Arts and Law.

If further assistance is required, contact:

Jane Gatwood, Acting Deputy Registrar, Student Office, ext 3099 or email j.gatwood@unsw.edu.au.

Kathy Keane, Assistant Registrar, Student Progression & Graduation, ext 3154 or email k.keane@unsw.edu.au.

Mr Richard Sanchez, ext.3362 or email richard.sanchez@unsw.edu.au.

1. COURSE DETAILS

1.1 Course ID

COMP4418

1.2 Course name - Long

Knowledge Representation and Reasoning

1.3 Course name - Abbreviated

Knowledge Representation and Reasoning

1.4 Course Authority Prof. Norman Foo ext/email 56921; norman@cse.unsw.edu.au

1.5 Organisational Unit responsible for course

The academic unit responsible for controlling the program.

School: Computer Science and Engineering Faculty: Engineering

Academic Group Code (Faculty): ENG

Academic Organisation Code (Owner): COMPSC

1.6 Justification of Proposal

Knowledge Representation and Reasoning (KRR) is at the core of Artificial Intelligence. All facets
of AI make use of KRR to some extent or other. With the presence of NICTA and its Knowledge Representation and Reasoning Program we have a large body of expertise in this area. Further NICTA Level E appointments in the area of constraint programming will further bolster our expertise and resources. Existing courses on AI cover KRR on a very basic level, by mainly introducing propositional and first-order logic and by presenting some historical KRR concepts like rules, semantic nets and frames. We want to give students an advanced and more up-to-date introduction to KRR. This covers mainly recent trends and current research issues with which our group has expertise.

1.7 Consultation Process

The main consultation was held with the Artificial Intelligence researchers within the School of Computer Science and Engineering: Mike Bain, Alan Blair, Paul Compton, Achim Hoffman, Eric Martin, Bill Wilson, Claude Sammut, Arcot Sowmya, Ron van der Meyden.

1.8 Units of credit (UOC) Session/s offered Hours Per Week

6 UoC Offered S1 3 Hours per week

1.9 Pre-requisites: At least 12CP in COMP3xxx courses or above including one of the introductory AI courses COMP3411, COMP4415, COMP9414.

1.10 Proposed Entry in the Faculty Handbook (including course description)

UC 6 HPW 3
Pre-requisites: At least 12CP in COMP3xxx courses or above including one of the introductory AI courses COMP3411, COMP4415, COMP9414.

Knowledge Representation and Reasoning (KRR) is at the core of Artificial Intelligence. It is concerned with the representation of knowledge in symbolic form and the use of this knowledge for reasoning. This course presents current trends and research issues in Knowledge Representation and Reasoning (KRR). It enables students interested in Artificial Intelligence to deepen their knowledge in this important area and gives them a solid background for doing their own work/research in this area. The topics covered in more detail are AI Logics, Probabilistic Reasoning, Constraints, and Game Theory.

1.11 Is this course replacing an existing course? NO

1.12 Undergraduate / Postgraduate

1.13 Elective

1.14 Program stage

Program Stage 4. First introduced 2005s1 if possible otherwise 2005s2.

1.15 Program/s in which course is be available

3645 BE Computer Engineering, 3647 BE Bioinformatics, 3648 BE Software Engineering, 3978 BSc Computer Science, plus combined courses that includee on of these, and 5432 GradDip CompIT, 8682 MCompIT, 7344 GradCert IT, 8684 MIT, 2665 ME, 2765 MSc, and 1650 PhD

1.16 Proposed teaching methods and assessment practices

3 hours per week of lectures.
4 assignments (15% each)
1 project, can be done in pairs (40%)
no exam
1.17 **Assessment grades to be used**

Full range of grades ie. HD, DN, CR, PS, FL

1.18 **Mode of delivery** Internal

1.19 **Information Technology Requirements for students**

Standard resources available in the school.

1.20 **Textbooks**

1. Logic / 2. AI Logics:


3. Probabilistic reasoning:


4. Constraints:


5. Game theory:

(a) Selected lecture slides from the site http://gametheory.net/html/lectures.html.

(b) Luce and Raiffa: Games and Decisions. Dover Publications.
1.21 **Industrial experience component** not applicable

2. **RESOURCE STATEMENT**

2.1 **Enrolments**
Estimated or proposed enrolments for the next three years.

2005: 15
2006: 15
2007: 15

2.2 **Resource Requirements**

**Staffing Requirements:**

Hours per week
- Full-time Academic Staff: 3
- Part-time Teaching Staff: 0
- General Staff: 0

**Field Costs:** N/A

**Studio/Laboratory Requirements:** N/A

**Materials Requirements:** N/A

**Equipment Costs:** N/A

**Computing Requirements:** Standard for CSE courses, and already available

**Library Requirements:** Standard textbook requirements for a course of this size

**Capital Funds Requirements:** N/A

2.3 **Servicing Implications:** Not applicable

2.4 **Teaching Arrangements:**

(i) Will other units contribute on a regular basis to the teaching of this course? **NO**

**Alternative Delivery Arrangements:** Not applicable

2.6 **Details of Tuition Fees:** Proposed fee: standard for an Engineering course of this type
3. AUTHORISATION

3.1 University 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 University Librarian.

Further Comments:

University Librarian
/ /2004

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
/ /2004

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:

(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
/ /2004