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

1. COURSE DETAILS

1.1 Course ID   COMP3xxx

1.2 Course name - Long

XML and Databases

1.3 Course name - Abbreviated

XML and Databases

1.4 Course Authority Sen.Lect Dr. Sebastian Maneth   **ext/email** 83060481 / smaneth@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

XML has become the lingua franca for data on the web. Practically all programming languages offer XML support and an increasing number of jobs in industry require proficiency with XML technologies. This course gives an introduction to semi-structured data, and XML in particular. It explains tools and languages for XML processing and gives the student a hands-on experience with them. The main focus, however, will be on understanding the fundamental new aspects of dealing with XML data, which are not present in the relational data world. In this way, the student will gain some industrial relevant skills as well as an exposure to fundamental topics (such as tree automata) of significant intellectual depth.

1.7 Consultation Process

Associate Head of School,
Database group (Xuemin Lin, John Shepherd, Raymond Wong)

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

1.9 **Pre-requisites:** none
         Co-requisites: none
        Exclusions: none

1.10 Proposed Entry in the Faculty Handbook

COMP4151
Advanced Topics in Concurrency
Staff Contact: Sen. Lect. Dr. Sebastian Maneth
UOC6 HPW4 S2

Topics: XML Parsing (Event-Driven vs. DOM). Memory models (trees, DAGs, pointer-less). Types: DTD/XML Schema/RELAX NG. Implementation: Tree Automata (top-down vs. bottom-up, nondet. vs det., complexity, succinctness). Selecting Nodes: XPath and Pattern Matching (automata vs. structural/twig joins). XML Transformations and Type Checking. Data Binding (to a DB/PL and back). Query Languages: XQuery. Access Control for XML. Optimization issues: Statistics, Indexes and Keys for XML.

1.11 Is this course replacing an existing course?

YES

NO   X

1.12 Undergraduate & Postgraduate

1.13 Elective

1.14 Program stage

Stage 3+ or Masters/PhD, first offered S2 2006

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 may wish to have the course delivered via the videoconferencing facility so as to be available to students at other NICTA nodes. Details to be worked out with NICTA. Video-conferencing costs will be NICTA's responsibility.

1.19 Information Technology Requirements for students

Standard requirements for School of Computer Science and Engineering

1.20 Textbooks

Will vary from year to year. The lecturer intends to publish lecture notes which will be available to students. Supplementary material such as research papers will be distributed in the course.

Textbooks indicative of potential course content include:

S. Abiteboul, P. Buneman, and Dan Suciu, Data on the Web: From Relations to Semistructured Data and XML, Morgan Kaufmannm 1999.

Beginning XML, 3rd Edition by David Hunter, Andrew Watt, Jeff Rafter, Jon Duckett, Danny Ayers, Nicholas Chase, Joe Fawcett, Tom Gaven, Bill Patterson, ISBN: 0-7645-7077-3, 2004.

1.21 Industrial experience component

None

2. RESOURCE STATEMENT

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

2006: 50 (??)

2.2 Resource Requirements

Staffing Requirements:

This course will be taught by NICTA/CSE staff. Thus no significant resources are required. There will be general staff support from the Computer Support Group.

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 Funds Requirements: 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

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
    /   /2006

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
    /   /2006

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

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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
    /   /2006