PROPOSAL TO INTRODUCE A NEW COURSE

(formerly known as subject)

1. COURSE DETAILS

1.1 Course ID BINF9010

1.2 Course name - Long
Bioinformatics methods and applications

1.3 Course name - Abbreviated
Bioinformatics methods and applications

1.4 Course Authority **ext/email**
School of Computer Science and Engineering

1.5 Organisational Unit responsible for course

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

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

1.6 Justification of Proposal
Bioinformatics techniques are used increasingly in biology, biotechnology and drug design and constitute a growing application area in computer science. Informed use of these techniques requires an understanding of their underlying algorithms and assumptions. The proposed course is designed for Masters-level students seeking professional training or re-training in the use of bioinformatics techniques as part of postgraduate coursework programs in biotechnology and drug design, and for computer science/biomedical engineering/health informatics postgraduate students seeking an introduction to bioinformatics as an application area. The course would start with a choice of optional modules (computer science for biologists and biology for computer scientists) and is therefore suitable for students with different backgrounds.

1.7 Consultation Process
The following parties were consulted in the design of this course:
School of Biotechnology and Biomolecular Sciences (BABS). A letter of support from Chris Marquis (chairman of the postgraduate coursework committee) is attached to this proposal
Centre for Health Informatics: a letter of support from Tatjana Zrimec is attached to this proposal
Graduate School of Biomedical Engineering: (in progress)

1.8 Units of credit (UOC) 6 **Session/s offered** S1 **Hours Per Week** 5

1.9 Pre-requisites: None
Co-requisites: None
Exclusions: BINF2001, BINF3001

1.10 Proposed Entry in the Faculty Handbook

BINF9010
Bioinformatics methods and applications
School of Computer Science and Engineering
UOC6 HPW5 S1

Bioinformatics methods and data generated or analysed by these methods are of increasing importance in the biological sciences. This course explores the algorithms, assumptions, applications and limitations of a number of bioinformatics methods used for DNA and protein sequence analysis, biomolecular structure prediction and analysis, and functional genomics including microarray data analysis. Practical work emphasises the use and applications of standard bioinformatics tools and databases. The course starts with a choice of modules (biology for engineers, computer science for biologists) and is therefore suitable for students with a range of backgrounds.

Assumed knowledge: introductory statistics and probability. Computer programming skills not necessary.

1.11 Is this course replacing an existing course?

YES

NO X

1.12 Postgraduate

1.13 Elective

1.14 Program stage
Master by coursework programs, first offered S1 2005

1.15 Program/s in which course is be available
8048 Master of Science in Biotechnology, 8049 Master of Science in BioPharmaceuticals, 8680 Master of Computer Science, 8685 Master of Engineering Science in Computer Science and Engineering, 1650 PhD (Computer Science and Engineering),

1.16 Proposed teaching methods and assessment practices
Lectures, tutorials, computer laboratory practicals and homework assignments

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

1.18 Mode of delivery

Internal X

External

Other (specify)

1.18.1 Multi-mode Delivery Guidelines
The following issues should be addressed in proposals for Multi-mode delivery:

- parity in admission requirements to ensure that the integrity of programs at UNSW was not compromised;
- administrative processes relating to enrolments and dealing with students overseas;
- content and standard of courses and assuring comparability with on-campus courses;
- by whom and how courses were to be delivered;
- assessment procedures; and
- availability of library resources.

Note: The business components of off-shore proposals are considered by the International

Strategies Committee (ISC) chaired by Professor Wainwright, Deputy Vice-Chancellor (Research) whilst the Academic Board approves the academic aspects of proposals for offshore delivery of existing programs. The ISC considers (i) partnership arrangements; (ii) whether the impact on the faculty of staff going overseas has been considered; and (iii) whether appropriate steps have been taken to register the program in the country concerned.

The Postgraduate Coursework Committee has wished to ensure that the following issues have been addressed in proposals for offshore delivery: parity in admission requirements to ensure that the integrity of programs at UNSW is not compromised; administrative processes relating to enrolments and dealing with students overseas; content and standard of courses and assuring comparability with on-campus courses; by whom and how courses are to be delivered; assessment procedures and availability of library resources.

Proponents should contact the Office of the Deputy Vice-Chancellor (Research and International) regarding this committee.

1.19 Information Technology Requirements for students

Use of computer laboratories in the schools of Computer Science and Engineering and Biotechnology and Biomolecular Sciences for computer practicals

1.20 Textbooks
None

1.21 Industrial experience component
N/A

2. RESOURCE STATEMENT

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

2005: 15

2006: 18

2007: 20

2.2 Resource Requirements

Staffing Requirements:

Hours per week

10 Full-time Academic Staff

0 Part-time Teaching Staff

2 General Staff

Field Costs: None

Studio/Laboratory Requirements:	None
Materials Requirements:	Minimal
Equipment Costs:	Minimal
Computing Requirements:	Computing laboratories in CSE and BABS
Library Requirements:	Minimal
Capital Funds Requirements:	None

2.3 Servicing Implications:

This course does not replace any existing course, including courses taught by other faculties. It is targeted at students from a range of faculties and schools including BABS (Science), CSE (Engineering), GSBmE (Engineering) and CHI (Medicine), and will be taught jointly by BABS and CSE. The attached letters of support confirm the agreement of BABS, CHI and GSBmE(?) to allow this course as an elective in their postgraduate coursework programs.

2.4 Teaching Arrangements:

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

YES X

NO

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

50% of the teaching will be delivered by the School of Biotechnology and Biomolecular Sciences (Faculty of Science)

2.5 Alternative Delivery Arrangements:

None at this time. Online delivery is considered for subsequent years once the curriculum is established and evaluated through face-to-face teaching.

2.6 Details of Tuition Fees:

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 University 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 University Librarian.

Further Comments:

University Librarian
/ /2003

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
/ /2003

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
/ /2003

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DISABILITY GUIDELINES FOR ACADEMIC STAFF PREPARING COURSES