PROPOSAL TO INTRODUCE A NEW PROGRAM

1. MAIN FEATURES OF PROPOSAL

- 1.1 Proposed name of program: Bachelor of Engineering in Software Engineering/Master of Biomedical Engineering
- 1.2 Proposed abbreviation of the program: BE(Software Engineering)/MBiomedE
- 1.3 Program code: 3749 Plan: SENGA13749

1.4 Staff Contact

Ken Robinson 4045/k.robinson@unsw.edu.au

1.5 Program Authority

School:School of Computer Science & EngineeringFaculty: EngineeringAOU code:E250

1.6 Reason for the proposal

There are many BE/MBiomedE combined programs in Engineering and it is appropriate for there to be such a combined program with Software Engineering. Software plays a significant role in many application areas and that is certainly true of biomedical applications. There are a number of combined programs with Software Engineering and the School of Computer Science and Engineering is keen to encourage students to undertake studies in a combined program. This broadens graduate experience and is consistent with UNSW strategies to encourage cross-disciplinary study.

There has been a small, but keen, request from current Software Engineering students for such a program.

1.7 Authorisation

Has this proposal received endorsement from the:

	yes	no
University Librarian	not yet	
Registrar s Nominee	not yet	
Dean	not yet	

1.8 Consultation Process

Yes

1.9 Planning Office

Yes, the proposed combined essentially operates as an extension of the current Software Engineering program. Students enter the program through the Software Engineering entry. Hence it largely fits within the Software Engineering enrolment profile.

1.10 Units of Credit

Yes

1.11 General Education Program

Yes

2. PROGRAM DETAILS

2.1 Conditions governing the award

2.2 Is it proposed that this program will replace an existing program?

No

2.3 CURRENT ENTRY IN THE FACULTY HANDBOOK

2.4 PROPOSED ENTRY IN THE FACULTY HANDBOOK

The BE (Software)/Master of Biomedical Engineering concurrent degree program is offered jointly through the School of Computer Science and Engineering and the Graduate School of Biomedical Engineering

Students who are enrolled in a joint program are expected to maintain a credit ($\geq 65\%$) average across courses taken from each of the composite programs. Students who fail to meet this condition will be counselled about their suitability to remain in the combined program.

Stage 1

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Course No	Course Name	$\mathbf{S1}$	$\mathbf{S2}$
SENG1010	Software Engineering Workshop 1A		3
SENG1020	Software Engineering Workshop 1B		3
MATH1131	Mathematics 1A or	G	
MATH1141	Higher Mathematics 1A	0	
MATH1081	Discrete Mathematics	6	
MATH2400	Finite Mathematics		3
COMP1011	Computing 1A or	C	
COMP1711	Higher Computing 1A	0	
COMP1021	Computing 1B or		C
COMP1721	Higher Computing 1B		0
INFS1611	Requirements Engineering		3
INFS1603	Business Data Management	6	
BIOM9010	Biomed Eng Practice		3
	General education		3
	Total	24	24

Stage 2

Course No	Course Name		$\mathbf{S1}$	$\mathbf{S2}$
SENG2010	Software Engineering Workshop 2A		3	
SENG2020	Software Engineering Workshop 2B			3
COMP2110	Software System Specification		3	
COMP2011	Data Organisation or			c
COMP2711	Data Organisation advanced			0
COMP2021	Digital Systems Structures			6
INFS2603	System Analysis & Design		6	
INFS2607	Business Data Networks			6
MATH2859	Probability, Statistics and Information			3
BIOM1001	Professional Biomedical Studies		3	
	Preferred Biomedical elective (sec ??)		6	
	General education		3	
	1	Total	24	24

Stage 3

Course No	Course Name	$\mathbf{S1}$	S2
SENG3010	Software engineering Workshop 3A	3	
SENG3020	Software Engineering Workshop 3B		3
COMP2411	Logic & Logic Programming	6	
COMP3141	Software System Design & Implementation	6	
PHPH2101	Physiology 1A	6	
PHPH2201	Physiology 1B		6
	SE Electives	3	15
	Total	24	24

Stage 4

Course No	Course Name	S 1	S2
SENG4921	Professional Issues and Ethics	6	
BIOM5001	Thesis A		6
	SE Electives	12	6
BIOM9xxx	BIOM Electives	6	12
	Total	24	24

Stage 5

Course No	Course Name		$\mathbf{S1}$	$\mathbf{S2}$
	SE Electives		6	
BIOM5904	Thesis B		12	
BIOM9xxx	BIOM Electives		6	12
BIOM9913	Masters thesis or			10
BIOM9xxx	BIOM Electives			12
		Total	24	24

Note

The above staging of the program represents one possible sequence of courses. The staging of the courses may be modified, subject to prerequisites and timetabling.

In particular, the Biomed and SE electives may be redistributed to suit.

Preferred Biomedical Electives

BIOM9420	Clinical Laboratory Science
BIOM9613	Medical Instrumentation
BIOM9321	Physiological Fluid Mechanics
BIOM9332	Biocompatibility
BIOM9440	Biomedical Practical Measurement

Other Biomedical Electives

BIOM9060 B	iomedical	Systems	Analysis	
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- BIOM9430 Electromedical Standards
- BIOM9510 Introductory Biomechanics
- BIOM9601 Biomedical Applications of Microcomputers
- BIOM9621 Biological Signal Analysis
- BIOM9701 Dynamics of the Cardiovascular System
- BIOM9027 Medical Imaging
- BIOM9050 Microprocessors and Circuit Design for Biomedical Engineers
- BIOM9450 Clinical Information Systems
- BIOM9541 Mechanics of the Human Body

2.5 Units of credit

Stage	uoc
1	48
2	48
3	48
4	48
5	48
Total	240

Full-time program load equivalence (EFTSU): ?

2.6 Admission Requirements

Entry requirements for this program are no different for entry to program 3648, the base Software Engineering program.

2.6.1 Articulation Rules

 \mathbf{No}

2.7 Program attendance mode

Will this program be available on an

Internal **Yes** External **No** basis? Combination **No**

2.7.1 Multi-mode Delivery

2.8 Program attendance type

Full-time Part-time Both

2.9 Program of study (stream) (POS) available in this program

Not applicable.

2.10 Next Program Review Date

The BE(Software Engineering) component of the program will be reviewed towards the end of 2003. The combined program will be reviewed in 2005.

What goes here?

2.11 For Undergraduate Programs only

2.11.1 Program Prerequisites

No

2.11.2 UAC Code

Entry for this program is a for program 3648 and hence is under the umbrella of UAC code 425014.

2.11.3 General Education program

i. The program contains 6 units of credit of General Education courses. An exemption of 6 units of credit is claimed on the basis of the BIOS elective content of the program.

The handbook entry for this program shows 3 units of credit of General Education in the first year. This arises because of the difficulty of placing it elsewhere in the program and meeting the Academic Board rules on units of credit in a semester. In practice, students would be able to modify their program by overloading and move the General Education out of year 1.

ii. The program contains SENG4921 *Professional Issues and Ethics* and this course contains 56 hours of instruction.

2.11.4 Honours

- i. Will Honours be awarded in this program? Yes
- ii. How will Honours be determined? Honours is determined by meritorious performance over the whole of the BE content of the program.

2.11.5 University Medal

Can the program lead to the award of the University Medal? \mathbf{Yes}

2.12 For Postgraduate Programs only

- 2.12.1 Research Degree
- 2.12.2 Inclusion of Undergraduate Courses
- 2.13 For Double, Combined or Fast
- 2.13.1 Completion requirements for the degree/degrees

The two degrees would normally be completed concurrently.

2.13.2 Transfer arrangements to either of the single degrees

Transfer is from the BE to the BE/MBiomedE, subject to a WAM of 65%. Transfer is also possible from the BE/MBiomedE to the single BE program.

2.13.3 Award of Honours in the degree/degrees

This has been specified in section ??

2.13.4 General Education program

Exemption from 6 units of credit of General Education is sought. The justification is the large amount of elective BIOM content of the program. Any 6 units of credit of that elective content would normally be eligible for exemption from General Education.

2.13.5 **Program Authority**

The program authority for this program will be the School of Computer Science & Engineering. Is this correct?

2.14 For Alternative Delivery Programs only

2.15 Information Technology (IT) Requirements for students (for all proposed programs)

 3.
 CROSS REFERRAL
 To be completed

 4.
 COURSE DETAILS
 To be completed

 5.
 RESOURCE STATEMENT
 pleted

 6.
 AUTHORISATION
 pleted

6.1 Librarian's Authorisation

I have examined the Library needs related to the above proposal and certify that existing Library holdings, staffing, services and accommodation are adequate/inadequate to cover the demands that are inherent in it.

Appropriate arrangements for the use of digitised material to support this program have been made by the Program Authority with the University Librarian.

Indicate any further comments Further comments:

Signature of University Librarian

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6.2 Dean's Authorisation

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

(Please delete whichever is <u>not</u> applicable)

6.2.1

- i. the proposal involves no additional resources (A statement from the Head of School explaining how this can be achieved must be included); 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 can be achieved must be included); 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.

6.2.2 Fees

- 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. a fee will/will not be charged for this subject. If a fee is to be charged the Dean should certify as follows:

6.2.3

the proposal conforms to the University's commitment to Equal Opportunity in Education. Statement by Head of School on Source of Additional Resources and/or Further Comments:

Signature of Dean

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