# DRAFT Learning and Teaching Plan

## 2006-2010

### School of Computer Science and Engineering
#### The University of New South Wales

## 1 Introduction

The Learning and Teaching (L&T) Plan for the School of Computer Science and Engineering follows the Faculty of Engineering Learning and Teaching Plan in adopting strategies for development, implementation, monitoring and continuous improvement of student learning outcomes, resources, and programs (undergraduate, postgraduate coursework and research training programs). These include processes related to student admission and progression, as well as induction, development and recognition for both academic and sessional staff.

The CSE Learning and Teaching Plan should be read in conjunction with the Faculty of Engineering Learning and Teaching Plan 2006-2010 (see Appendix A), the UNSW Learning and Teaching Plan (summarised in Appendix B) and the Guidelines on Learning that Inform Teaching at UNSW (summarised in Appendix C). This L&T Plan augments these plans to the specific context of the School of Computer Science and Engineering.

The objectives of the current Faculty of Engineering strategic plan (2003-2007) for undergraduate students are:

> "A New South Engineer will excel in the knowledge, skills and generic attributes expected of graduate engineers. They will be differentiated from graduates of other schools by further characteristics, which include very high levels of problem recognition, problem definition and problem solving, together with a strong capability in creativity and lateral thinking. They will have an international perspective and experience."

To support continuing achievement of these objectives, the Faculty completed a significant review and redesign of all of the Engineering programs in the Faculty (except Software Engineering and Bioinformatics) in 2005. In 2003, the Faculty developed and contextualised the UNSW graduate attributes for our Engineering undergraduate students.

For the period 2006-2010, a range of aspirations and approaches for the Faculty of Engineering, described in more detail below, have been defined. They fall into five broad categories: student processes; program processes; staff processes; sessional staff processes; and resource development processes. The School's contribution to these approaches is set out under each of the items below.

## 2 Student Admission, Transfer, Support and Recognition

### 2.1 Aspirations

The School of Computer Science and Engineering (CSE) aims to attract the best Information Technology (IT) students in Australia and South East Asia, and to produce IT professionals who can make a significant contribution either to the development of an indigenous Information Technology industry within Australia, or to the IT profession in their home countries. Having students from a range of backgrounds and countries studying IT

together is a critical component of developing a global outlook among our students. While studying in CSE, we aim to give students the opportunity to develop technically, professionally and personally through a wide range of activities from technical to social, and even theatrical. Our goal is for the School to become a community where students not only develop superior knowledge and the skills to innovative, but also enjoy their time with us.

## 2.2 Approaches

**Refine the criteria and processes for the Faculty of Engineering Admission Scheme, internal transfers and advanced standing for undergraduate students**

This is a Faculty initiative, and is being carried out at Faculty level.

**Refine the criteria and processes for the admission of postgraduate coursework and research students**

This is a Faculty initiative, and is being carried out at Faculty level.

**Support activities and mechanisms which attract talented students suited to a career in engineering from a diverse range of backgrounds and socio-economic groups**

The School runs an annual Programming Competition, open to all High Schools in Australia (and New Zealand). This attracts teams of extremely bright programmers from almost 100 schools across the country. Many of these students, especially from winning teams in the Sydney region, have subsequently come to study in CSE.

CSE also aims to attract more women to study IT by running a series of workshops aimed at Primary School girls. The students spend a day in the School involved in creative activities related to IT. This is clearly a long-term project, but we feel that it is necessary to give girls confidence with IT while young, and before unfortunate gender stereotypes become entrenched.

Another activity focussing on attracting upper primary-level and lower high-school-level students to IT, is the Robocup Junior competition, which the School hosts each year. This attracts hundreds (680 in 2006) of primary/secondary students to program robots in a range of activities: dance, rescue and soccer.

The School conducts visits to High Schools via a "Roadshow". During 2006, we visited 35 schools in throughout the Sydney region.

The School also supports the Co-op Scholarship program which is highly competitive and attractive to high-achieving students.

**Provide scholarships to support talented students from a diverse range of backgrounds and socio-economic groups**

The School is involved in the Co-op Scholarship program, through the Computer Science Co-op Program. This is highly competitive and attracts some excellent students (high-acheivers both academically and socially) to study in CSE. We currently have 24 Co-op Scholars studying Computer Science and doing Industrial Placements at a range of companies, from banks and multi-nationals to small local software companies.

The School is also involved in the Faculty Rural Scholarships program, and has a number of its won scholarships, including the Women In Computing scholarship, designed to encourage talented women to study IT.

**Support major student-led projects**

The School has supported worthwhile student projects in the past, and will continue to do so. A notable examples is the development of the PLEB Linux Handheld system.

CSE also strongly backs innovative and industry-focussed 4th-year projects, via the CISRA prize. Students are able to propose their own thesis topics, or choose from the list supplied by the School.

**Support Taste-of-Research scholarships**

Each year CSE offers a large number of Taste-of-research scholarships and attracts a significant number of students:

- 2003/2004: 51 summer scholars
- 2004/2005: 35 summer scholars
- 2005/2006: 39 summer scholars

**Strongly encourage international exchange**

The School encourages students to undertake a part of their degree program overseas, if they wish. Not many students take up this opportunity, partly because there are so many opportunities to get part-time IT work (and thus industry experience) in Sydney while they study.

On the other hand, CSE does attract significant numbers of overseas students to study here. From 2003 to 2005, we averaged 20 students/year on international exchange, primarily from Scandinavia and North America.

**Engage students in our marketing, mentoring and research activities**

A large number of students, both undergraduate and postgraduate, volunteer to be assist in CSE marketing/promotion activities:

- production of Undergrad/Postgrad Prospectuses
- setting up and supervising Robocup Junior State Finals
- participating in the IEAust & ACS Accreditation visit
- setting up and running Open Day displays (including RoboCup and High School Programming Competition)
- assisting with the set-up of displays for UTECOM 50th Anniversary
- participating in the High School ProgComp Presentation Evening
- setting up for the Sept Robocup Junior Nationals

CSE holds a Volunteer Recognition afternoon each year to award those who have participated as volunteers.

CSE has a very strong and successful mentoring program for 1st year students, with the mentors all being later-year student volunteers. Mentors provide guidance and information about CSE, and help students to become more involved in the School via a range of social activities.

Many of our 4th-year thesis projects are spin-offs from PhD research in the School, which enables the students to become involved in the School's research activity. The Taste-of-Research scholarships provide a similar opportunity.

**Improve communication with and support for students, especially in first year**

As noted above, the School runs a mentoring scheme for first year students. Later year students assist first year students to adapt to University life. Helping new students to adapt to life in Sydney is another important aim of the program, especially given our significant numbers of international students.

**Provide recognition mechanisms for high-achieving students**

The School organises a dinner before the May Graduation ceremony (our largest ceremony for the year), to award prizes for academic achievement. Most of these prizes are industry-sponsored, and the prize sponsors and other industry representatives also attend the dinner.

## 2.3 Relationship to the goals and strategies of the UNSW Learning and Teaching Plan

These aspirations and approaches for our students are related to and informed by Goal 2 (Strategy 2.6), Goal 3 (Strategy 3.1 & 3.6), Goal 8 (Strategy 8.7), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

# 3 Program Development, Implementation, Monitoring and Continuous Improvement

## 3.1 Aspirations

Drawing on our research and education expertise, our UNSW Engineering programs will provide our students with a flexible and challenging education experience that provides them not only with strong specialist technical, problem solving and design skills, but also with broader generic skills in management, team-work, innovation and creativity. We seek to produce graduates well suited to work in and adapt to a diverse range of career paths in the global market-place. We will continuously improve our programs and the student learning outcomes.

## 3.2 Approaches

**Continue development and implementation of an undergraduate curriculum that emphasises the adaptable acquisition of a unique set of attributes including a strong emphasis on design**

The Faculty completed a significant review and redesign of all of the engineering programs in the Faculty (except Software Engineering and Bioinformatics) in 2005.

The design strand commences with a new course, ENGG1000 Engineering Design and Innovation in Year 1. A Year 2 Design course (COMP2911) will commence in 2007, and later year Design courses will be added as the 2006 cohort progresses through the program.

Nearly all courses in CSE have a significant project component which aims to enhance students design and development skills.

**Further improve and enhance the flexible common first year for undergraduate students**

This is a Faculty initiative, and is being carried out at Faculty level. CSE is providing service teaching in the area of IT for the new first year curriculum.

**Develop a wider range of flexible programs including more diverse major and minor sequences at the undergraduate level**

The Computer Science program provides considerable flexibility, allowing students to either focus on all IT courses, or to combine IT with almost any other discipline in a minor sequence. The Computer Science program also now has a range of specialist IT plans.

All of our Postgraduate Coursework programs have a range of plans.

The undergraduate Engineering programs have fewer elective slots than the other program, but still allow students to focus on specific sub-disciplines as they proceed through the program. Bioinformatics already provides students with the capability to combine studies in the biological sciences with IT.

All undergraduate programs are available in combined degrees with faculties such as Law, Commerce and Science.

**Review and revise the postgraduate coursework programs to provide a common technical management core with flexible a range of specialised technical options focussed around the Faculty research strengths**

CSE has always had a strong presence in the Postgraduate Coursework arena, with two distinct kinds of program. An advanced technical coursework program (MEngSc and then MIT) and a re-training stream, for students from other technical disciplines to develop professional IT knowledge and skills (MCompSc and then MCIT). The Postgraduate coursework degrees were significantly revised in 2005 and have continued to attract strong interest from both local and international students.

CSE will also be participating in the Faculty's new MEngSc program, specifically so that our students have access to the technical management courses offered under that scheme.

**Continue development and implementation of the research and career-development programs for post-graduate research students**

New postgraduate students are required to enrol in the Faculty-based research induction course.

UNSW offers other postgraduate courses (in topics such as research program management ad entrepreneurial skill), and postgraduate students are encouraged to enrol in these; some count towards UoC requirements.

**Improve the ability of our programs to cater for students with different aptitudes, backgrounds and ambitions**

Many CSE courses are offered in two flavours: the standard version, and an extended version which involves an extra lecture/tutorial each week covering more advanced material, and more challenging project work. * MCIT vs MIT

Students who have difficulty coping with the expected workload are advised to undertake a reduce program, and their progress is monitored.

**Develop and expand engineering-related integrating activities in each session in our programs**

The first-year course ENGG1811, run by CSE, incorporates project work suggested by other Engineering schools.

CSE participates in the Engineering Week program.

**Enhance the exchange of student and staff views about program and course design and implementation**

CSE has a strong body of Student Representatives (stureps) who collect feedback from students, attend Teaching Committee meetings, interact with the Associate Head of School, and have a meeting each semester with the Head of School and Program Directors. In particular, Student Representatives are forthright in their opinions on curriculum and teaching matters in the TC meetings.

CSE also runs its own CEQ-style questionnaires, to complement the CATEI process, and to extract more specific feedback from students. All CSE students are encouraged to provide feedback on all of their courses via this anonymous on-line instrument.

**Improve monitoring of and advice on student progression and study paths**

Program Directors meet with students who are experiencing difficulty in progression, to determine the cause of the problems and to propose methods for overcoming them (e.g. referral to University services such as the Phoenix Rising Workshop, or reduction in program load).

### 3.3   Relationship to the goals and strategies of the UNSW Learning and Teaching Plan

These aspirations and approaches for our programs are related to and informed by Goal 2 (Strategy 2.1 & 2.6), Goal 3 (Strategy 3.1 & 3.3), Goal 4 (Strategy 4.3), Goal 5 (Strategy 5.3, 5.4 & 5.7), Goal 6 (Strategy 6.1, 6.2, 6.3, 6.4, 6.5 & 6.6), Goal 8 (Strategy 8.7), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

# 4 Staff Induction, Development, Support and Recognition

## 4.1 Aspirations

Our Engineering programs will be developed and implemented by a diverse, qualified, experienced and dedicated cohort of academic staff. We will encourage and assist our staff to use and develop a variety of educational techniques and tools appropriate to modern Engineering practice, and student needs and learning styles. We will integrate our learning and teaching practice with our research culture.

## 4.2 Approaches

**Facilitate staff completion of formal and informal training in learning and teaching and research supervision practices**

New staff in the School are required to attend one of the FULT workshops in learning and teaching which are run by the UNSW Learning and Teaching Centre.

All staff are encouraged to participate in courses run by UNSW (via the Learning and Teaching Centre and EdTeC) which can improve their teaching.

**Develop and sponsor seminars and workshops focussed on Engineering education and research supervision practice**

This is a Faculty initiative, and is being carried out at Faculty level.

All academic staff are encouraged to attend the research supervision workshops offered by the Graduate Research School.

**Develop a learning and teaching section of the Faculty website to support staff needs and development**

This is a Faculty initiative, and is being carried out at Faculty level.

**Provide support for development and implementation of eLearning and other innovations suited to the delivery of Engineering programs for a diverse student body**

CSE (not surprisingly) has a strong track-record of using computing technology as a core component of learning and teaching. Our courses have used blended learning since the mid-1990's. The School has developed its own course management and course evaluation systems and uses these extensively. There is also a strong spirit of innovation, and a range of course management platforms is used, with the most effective being adopted in an evolutionary style.

**Encourage the development of a culture of scholarship in Engineering learning and teaching alongside an Engineering Education community of practice through a range of initiatives including mentoring and grants**

CSE academics are involved in a number of Computing Education projects (e.g. Carrick Awards) and this year CSE will host the Sydney Region IT Education Conventicle.

**Recognise staff achievements in learning and teaching by provision of Faculty awards in addition to encouraging and assisting staff in applying for external awards**

The Faculty presents a number of awards for staff achievement each year. CSE has been successful in gaining a number of these awards in 2004 and 2005, for both academic and general staff.

Several members of the CSE teaching staff have received Vice-chancellor's teaching Awards, and other have received older Faculty Awards (Noel Svensson).

## 4.3 Relationship to the goals and strategies of the UNSW Learning and Teaching Plan

These goals and approaches for our academic staff are related to and informed by Goal 1 (Strategy 1.2, 1.3, 1.4, 1.5 & 1.8), Goal 2 (Strategy 2.2), Goal 3 (Strategy 3.7), Goal 5 (Strategy 5.2, 5.3 & 5.4), Goal 7 (Strategy 7.1 & 7.3), Goal 8 (Strategy 8.1, 8.2, 8.3, 8.5, 8.6 & 8.8), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

# 5 Sessional Staff Induction, Development, Support and Recognition

## 5.1 Aspirations

Our academic staff will be supported in the development and implementation of our Engineering programs by qualified, enthusiastic and dedicated sessional staff. We will provide for the development needs of our sessional staff and their involvement in the learning and teaching community in our Faculty.

## 5.2 Approaches

**Expand the certified induction and training program for postgraduate research students who assist as sessional staff.**

This is a Faculty initiative, and is being carried out at Faculty level.

The School has a package for new postgraduate research students who assist as sessional staff, welcoming them and setting out the expectations of their contribution to tutorials and laboratories.

**Encourage the involvement of postgraduate research students in courses related to learning and teaching as part of their Career Development Scheme**

Postgraduate research students are encouraged to enrol in courses related to learning and teaching which are offered by UNSW. Also, many postgraduate research students are involved in the running of CSE courses, in a range of roles, from tutoring to assignment development to mentoring project groups. Where appropriate, they are provided with the opportunity to prepare and present material. All of the above activities are carried out under the guidance of CSE academic staff, with opportunity for the research students to reflect their work with academic staff members.

**Encourage the involvement of sessional staff in learning and teaching developments in the Faculty**

New sessional staff in the School are encouraged to attend one of the FULT workshops in learning and teaching which are run by the UNSW Learning and Teaching Centre. Also, CSE runs its own "tutor induction" session at the start of each year, where new sessional staff are briefed on what is expected of them and on techniques for effective tutoring in the IT domain. Experienced sessional staff typically attend this briefing to pass on their experiences from previous semesters. Most courses have weekly meetings to discuss the up-coming week's material and approaches to presenting it, or carry out this activity via an on-line forum.

**Evaluate the induction, training and support needs of sessional staff other than postgraduate research students**

Evaluation is currently done on a case-by-case basis, and recommendations or resources supplied as required.

**Evaluate the support needs of staff who supervise sessional staff**

Evaluation is currently done on a case-by-case basis, and recommendations or resources supplied as required.

**Evaluate the recognition and reward systems for sessional staff**

Individual lecturers-in-charge take initiatives to recognise outstanding work by sessional staff. However, there

is no School-wide system for official recognition of, or reward for, outstanding teaching by sessional staff; this will be considered for implementation in 2007.

### 5.3   Relationship to the goals and strategies of the UNSW Learning and Teaching Plan

These aspirations and approaches for our sessional staff are related to and informed by Goal 1 (Strategy 1.2), Goal 2 (Strategy 2.2), Goal 8 (Strategy 8.1, 8.2, 8.3, 8.4 & 8.8), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

## 6   Learning and Teaching Resource Development

### 6.1   Aspirations

We believe that practical and hands-on experiences along with collaborative and integrated learning activities are essential to achieving the desired UNSW Engineering graduate attributes. We endeavour to provide resources best suited to our teaching and learning processes. We will continuously improve our facilities.

### 6.2   Approaches

**Create design studio and collaborative learning spaces that encourage horizontal and vertical sharing around engineering educational experiences**

CSE has an extensive collection of general computer laboratories, containing more than 100 workstations, as well a several specialised labs (e.g. for Human-Computer Interaction and networks).

**Develop and improve passive learning spaces that support and enhance individual learning opportunities**

It also provides a more casual workspace in the "Basement" of K17, which is heavily utilised by students. This workspace provides wireless network connectivity.

**Ensure all students have access to a minimum standard of resources to support completion of their programs in a timely manner**

CSE commits a considerable proportion of its annual budget to upgrading its laboratory facilities. Lab machines are typically turned over on a three-year cycle (i.e. students are never working on machines that are more than three years old).

**Encourage continual improvement of Engineering facilities for learning and teaching**

See above point.

### 6.3   Relationship to the goals and strategies of the UNSW Learning and Teaching Plan

These aspirations and approaches for our resources are related to and informed by Goal 4 (Strategy 4.4) of the UNSW Learning and Teaching Plan 2005-2007.

# Appendix A

# UNSW Engineering Learning and Teaching Plan 2006-2010

The Faculty Learning and Teaching Plan encompasses strategies related to development, implementation, monitoring and continuous improvement of undergraduate, postgraduate coursework and research training programs, resources and student learning outcomes. Included are processes related to student admission and progression as well as academic and sessional staff induction, development and recognition. The Plan should be read within the context of the Faculty of Engineering Strategic Plan, the UNSW Learning and Teaching Plan (see the summary in appendix ULTP1) and the 'Guidelines on Learning that Inform Teaching at UNSW' (see the summary in appendix ULTP2). This Plan is both informed by and informs the other plans. It is not anticipated that the Faculty Plan will mirror every goal and strategy of the University Learning and Teaching Plan.

The objectives of the current Faculty of Engineering strategic plan (2003-2007) for our undergraduate students are that

> "A New South Engineer will excel in the knowledge, skills and generic attributes expected of graduate engineers. They will be differentiated from graduates of other schools by further characteristics, which include very high levels of problem recognition, problem definition and problem solving, together with a strong capability in creativity and lateral thinking. They will have an international perspective and experience."

To support continuing achievement of these objectives, the Faculty completed a significant review and redesign of all of the Engineering programs in the Faculty (except Software Engineering and Bioinformatics) in 2005. In 2003, the Faculty developed and contextualised the UNSW graduate attributes for our Engineering undergraduate students.

For the period 2006-2010, a range of aspirations and approaches, described in more detail below, have been defined. They fall into five broad categories: student processes; program processes; staff processes; sessional staff processes; and resource development processes.

## Student Admission, Transfer, Support and Recognition

*Aspirations*

UNSW Engineering aims to admit students with the best aptitude, interest and motivation for the Engineering profession. While they are at UNSW, we will value and support the diversity in backgrounds, aptitudes, interests, study paths and achievements of our students. We appreciate the contribution that our students make to the life of our Faculty.

*Approaches*

Refine the criteria and processes for the Faculty of Engineering Admission Scheme, internal transfers and advanced standing for undergraduate students

Refine the criteria and processes for the admission of postgraduate coursework and research students

Support activities and mechanisms which attract talented students suited to a career in engineering from a diverse range of backgrounds and socio-economic groups

Provide scholarships to support talented students from a diverse range of backgrounds and socio-economic groups

Support major student-led projects

Support Taste-of-Research scholarships

Strongly encourage international exchange

Engage students in our marketing, mentoring and research activities

Improve communication with and support for students, especially in first year

Provide recognition mechanisms for high achieving students

**Relationship to the goals and strategies of the UNSW Learning and Teaching Plan**

These aspirations and approaches for our students are related to and informed by Goal 2 (Strategy 2.6), Goal 3 (Strategy 3.1 & 3.6), Goal 8 (Strategy 8.7), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

## Program Development, Implementation, Monitoring and Continuous Improvement

*Aspirations*

Drawing on our research and education expertise, our UNSW Engineering programs will provide our students with a flexible and challenging education experience that provides them not only with strong specialist technical, problem solving and design skills, but also with broader generic skills in management, team-work, innovation and creativity. We seek to produce graduates well suited to work in and adapt to a diverse range of career paths in the global market-place. We will continuously improve our programs and the student learning outcomes.

*Approaches*

Continue development and implementation of an undergraduate curriculum that emphasises the adaptable acquisition of a unique set of attributes including a strong emphasis on design

Further improve and enhance the flexible common first year for undergraduate students

Develop a wider range of flexible programs including more diverse major and minor sequences at the undergraduate level

Review and revise the postgraduate coursework programs to provide a common technical management core with flexible a range of specialised technical options focussed around the Faculty research strengths

Continue development and implementation of the research and career -development programs for postgraduate research students

Improve the ability of our programs to cater for students with different aptitudes, backgrounds and ambitions

Develop and expand engineering related integrating activities in each session in our programs

Enhance the exchange of student and staff views about program and course design and implementation

Improve monitoring of and advice on student progression and study paths

**Relationship to the goals and strategies of the UNSW Learning and Teaching Plan**

These aspirations and approaches for our programs are related to and informed by Goal 2 (Strategy 2.1 & 2.6), Goal 3 (Strategy 3.1 & 3.3), Goal 4 (Strategy 4.3), Goal 5 (Strategy 5.3, 5.4 & 5.7), Goal 6 (Strategy 6.1, 6.2, 6.3, 6.4, 6.5 & 6.6), Goal 8 (Strategy 8.7), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

## Staff Induction, Development, Support and Recognition

*Aspirations*

Our Engineering programs will be developed and implemented by a diverse, qualified, experienced and dedicated cohort of academic staff. We will encourage and assist our staff to use and develop a variety of educational techniques and tools appropriate to modern Engineering practice, and student needs and learning styles. We will integrate our learning and teaching practice with our research culture.

*Approaches*

Facilitate staff completion of formal and informal training in learning and teaching and research supervision practices

Develop and sponsor seminars and workshops focussed on Engineering education and research supervision practice

Develop a learning and teaching section of the Faculty website to support staff needs and development

Provide support for development and implementation of eLearning and other innovations suited to the delivery of Engineering programs for a diverse student body

Encourage the development of a culture of scholarship in Engineering learning and teaching alongside an Engineering Education community of practice through a range of initiatives including mentoring and grants

Recognise staff achievements in learning and teaching by provision of Faculty awards in addition to encouraging and assisting staff in applying for external awards

**Relationship to the goals and strategies of the UNSW Learning and Teaching Plan**

These aspirations and approaches for our academic staff are related to and informed by Goal 1 (Strategy 1.2, 1.3, 1.4, 1.5 & 1.8), Goal 2 (Strategy 2.2), Goal 3 (Strategy 3.7), Goal 5 (Strategy 5.2, 5.3 & 5.4), Goal 7 (Strategy 7.1 & 7.3), Goal 8 (Strategy 8.1, 8.2, 8.3, 8.5, 8.6 & 8.8), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

## Sessional Staff Induction, Development, Support and Recognition

*Aspirations*

Our academic staff will be supported in the development and implementation of our Engineering programs by qualified, enthusiastic and dedicated sessional staff. We will provide for the development needs of our sessional staff and their involvement in the learning and teaching community in our Faculty.

*Approaches*

Expand the certified induction and training program for postgraduate research students who assist as sessional staff

Encourage the involvement of postgraduate research students in courses related to learning and teaching as part of their Career Development Scheme

Encourage the involvement of sessional staff in learning and teaching developments in the Faculty

Evaluate the induction, training and support needs of sessional staff other than postgraduate research students

Evaluate the support needs of staff who supervise sessional staff

Evaluate the recognition and reward systems for sessional staff

**Relationship to the goals and strategies of the UNSW Learning and Teaching Plan**

These aspirations and approaches for our sessional staff are related to and informed by Goal 1 (Strategy 1.2), Goal 2 (Strategy 2.2), Goal 8 (Strategy 8.1, 8.2, 8.3, 8.4 & 8.8), Goal 9 (Strategy 9.2 & 9.3) of the UNSW Learning and Teaching Plan 2005-2007.

## Learning and Teaching Resource Development

*Aspirations*

We believe that practical and hands-on experiences along with collaborative and integrated learning activities are

essential to achieving the desired UNSW Engineering graduate attributes. We endeavour to provide resources best suited to our teaching and learning processes. We will continuously improve our facilities.

*Approaches*

Create design studio and collaborative learning spaces that encourage horizontal and vertical sharing around engineering educational experiences

Develop and improve passive learning spaces that support and enhance individual learning opportunities

Ensure all students have access to a minimum standard of resources to support completion of their programs in a timely manner

Encourage continual improvement of Engineering facilities for learning and teaching

**Relationship to the goals and strategies of the UNSW Learning and Teaching Plan**

These aspirations and approaches for our resources are related to and informed by Goal 4 (Strategy 4.4) of the UNSW Learning and Teaching Plan 2005-2007.

# Appendix B

# Summary of UNSW Learning and Teaching Plan 2005-2007

### Goal No. 1 Research-Teaching Nexus

All learning and teaching practices at UNSW will be integrated with a research culture

*Strategies*

1.1 Ensure the development of policy in relation to learning and teaching will be informed by current research and practice.

1.2 Ensure that all staff development in learning and teaching explicitly encourages, models and supports the linking of teaching and research.

1.3 Further develop resources to assist academic staff in designing curricula to promote student experience of research-linked approaches to teaching and learning.

1.4 Develop and support the research initiatives of the UNSW Network of Scholarship in Learning and Teaching.

1.5 Strengthen the scholarship of learning and teaching through contributions to the UNSW Compendium of Good Practice in Learning and Teaching.

1.6 Formalise the annual learning and teaching forum at UNSW as a focus for the sharing and recognition of good practice in learning and teaching at UNSW.

1.7 Review the merits of, and the research literature on, criterion based versus norm based assessment strategies.

1.8 Include in promotion criteria for lecturer and above, evidence that the applicant ensures that their students experience the links between research and teaching.

### Goal No. 2 Graduate Attributes

All students will be given opportunities to develop the UNSW graduate attributes contextualised to their field of study as a result of their programs and experiences whilst at the University.

*Strategies*

2.1 In a staged process, gradually embed UNSW graduate attributes in the undergraduate, postgraduate course-work, and research student learning and teaching experience. Utilise curriculum mapping where possible to identify gaps, support greater integration and coherence within programs, and to increase collaboration and sharing of practice.

2.2 Share good practice about the ways of linking assessment to graduate attributes.

2.3 Revise program and course approval documentation to require explicit linking between graduate attributes and course and program curriculum.

2.4 Evaluate the use of the postgraduate research student log that addresses research graduate attributes.

2.5 Pilot the use of an electronic student portfolio to encourage our students to take responsibility for their development of graduate attributes.

2.6 Increase opportunities for all students to learn in real world and multidisciplinary contexts.

### Goal No. 3 Support for Transitions

All students and staff will be supported during the transitional phases of their studies and employment respectively.

*Strategies*

3.1 Develop and expand the initiatives designed to improve the transition experience of students from high school and other backgrounds to their first year at UNSW as well as at the commencement of postgraduate studies.

3.2 Develop additional pages for the Learning Centre Transition web site to include other groups such as mature age, coursework postgraduate students and tips for academics.

3.3 In relation to the Enabling Skills Policy, evaluate a school-based pilot of the implementation of the academic literacy program and the implementation of the University-wide new online information literacy program that will be mandatory for all commencing coursework students from 2005.

3.4 Evaluate ICT Assist service in terms of its effectiveness in supporting staff and students in developing foundation skills in information technology.

3.5 Establish a first year coordinators network and develop a program and resources based on the literature to support the needs of this group.

3.6 Continue the provision of student peer mentoring programs to further facilitate and embed the academic and social adjustment of first-year students.

3.7 Provide for new academic staff needs in learning and teaching, particularly for staff on probation, through the Career Development Scheme, the Foundations in Learning and Teaching Program and through support for peer mentoring schemes.

3.8 Ensure that all students and staff are aware of the University's revised policy on academic integrity, that all students are directed to the new "how not to plagiarise" web site and that the web site contains discipline specific instances of plagiarism and how it can be avoided.

## Goal No. 4 A Diverse and Flexible Learning Experience

Curricula, teaching modes and levels of support will reflect our changing student profile.

*Strategies*

4.1 Develop an annual UNSW student experience survey that is informed by the previous UNSW student survey, the UNSW National Survey of Student Engagement (NSSE) questionnaire, the e-learning project survey and the national and international literature.

4.2 Evaluate the international and intercultural experience of our students using the UNSW NSSE to identify strengths, gaps and to identify where further strategies are needed to ensure an inclusive experience for staff and an inclusive learning experience for our students.

4.3 Promote practices that integrate cross-cultural dimensions into learning and teaching.

4.4 Review teaching and learning spaces and the use of technology, including the e-learning platform, in terms of their alignment with the Guidelines on Learning that Inform Teaching at UNSW and their responsiveness to the varied nature of the student cohort.

4.5 Collate concrete examples of what currently is being done at UNSW in programs and courses to engage students from diverse backgrounds and to acknowledge and draw upon that diversity to enrich the student experience.

4.6 Make recommendations regarding the forms of institutional practices, resources and support that would enable UNSW staff and students to ensure the diversity of the student and staff experiences enriches learning and teaching at the University.

## Goal No. 5 Integrated Online Learning

We will be a leader in the provision of integrated online learning opportunities for students on and off campus.

*Strategies*

5.1 Implement a Learning Management System (through the e-Learning Program) that is integrated with other key University technologies such as the library, staff and student portals, and administrative systems.

5.2 Provide staff development opportunities for school communities in the use of the pedagogical and technological dimensions of flexible learning and support staff in the application of scholarship and innovative teaching practices.

5.3 Evaluate student and staff experiences and practices with educational technologies to inform quality improvements in learning and teaching.

5.4 Promote efficient use of educational technologies to support activities that enhance student learning and allow staff to make effective use of their time by enabling participation from diverse locations.

5.5 Promote the utilisation of the UNSW Learning Resource Catalogue (LRC) as both a community tool and means of identifying, reusing and sharing learning resources to help raise quality and make efficiency gains.

5.6 Expand the capabilities for recording of lectures and other classroom or off-campus activities thereby enabling a diverse population of students to access the events by convenient web-accessible streaming technologies.

5.7 Research and apply Assistive Technologies to enable students and staff with disabilities to partake in the UNSW learning experience.

## Goal No. 6 Learning and Teaching Feedback Loop

Continual improvement of our students' learning and teaching experience will follow evaluation of programs, courses and teaching.

*Strategies*

6.1 Drawing on user feedback, complete the implementation of the Course and Teaching Evaluation and Improvement (CATEI) Process.

6.2 Support staff in interpreting and responding to feedback from the CATEI Process using the Guidelines on Learning that Inform Teaching as a resource.

6.3 Use the systematic analysis of evaluation feedback from student and other stakeholder sources to inform the improvement of learning and teaching policy and practice.

6.4 Evaluate student and staff experiences and practices with educational technologies to inform quality improvements in learning and teaching.

6.5 Ensure that relevant data on the student experience are readily accessible to staff and that support is provided in interpreting and using these data.

6.6 Require that program and course review processes include statements as to how they are informed by the Guidelines on Learning that Inform Teaching at UNSW.

## Goal No. 7 Recognition of Effective Teaching

Effective teaching will be acknowledged and rewarded.

*Strategies*

7.1 Implement an improved promotion process and documentation that recognises and rewards quality teaching including:

\* the introduction of internal discipline based peer-review panels to evaluate evidence in relation to teaching

\* the investigation and introduction of an external peer evaluation of teaching process in collaboration with other Australian universities for applicants claiming outstanding teaching to Associate Professor and Professor

\* the provision of support for members of promotion panels and related committees in making judgements in relation to teaching

\* the recognition and reward of those who demonstrate evidence of the scholarship of learning and teaching in promotion applications.

7.2 Develop programs to enhance academic leadership in learning and teaching for Heads of Schools and other academic leaders.

7.3 Increase the scope of Faculty and University teaching awards, enhance staff awareness of the schemes and align them with the criteria for the Carrick Institute Teaching awards.

## Goal No. 8 Support for Staff

Support will be available to all staff in their learning and teaching practice

*Strategies*

8.1 Ensure that all professional-development programs in learning and teaching support commitment to the Guidelines.

8.2 Embed a 'communities of practice' approach in all staff development in learning and teaching initiatives, as appropriate.

8.3 Ensure that professional staff development programs are designed and implemented taking into account student and peer feedback on learning and teaching issues.

8.4 Support, value, acknowledge and reward the work of sessional teachers by providing opportunities for their professional development, by ensuring their full integration into the university's communities in learning and teaching and by responding to their varying needs and the unique requirements of Faculties, Schools and disciplines.

8.5 Provide systemic support in learning and teaching for continuing staff through the University Network in Learning and Teaching (UNILT) workshops, the Graduate Certificate in Higher Education, Educational Development and Technology Centre (EDTeC) workshops and services provided by the Learning and Teaching Unit, EDTeC, the Learning Centre and faculty based support units.

8.6 Develop professional development strategies that respond to the needs identified through a 2005 staff organisational climate survey.

8.7 Support staff in the development of strategies to increase participation, retention and graduation of indigenous students at UNSW.

8.8 Provide staff development opportunities for school communities in the use of the pedagogical and technological dimensions of flexible learning and support staff in demonstrating the application of scholarship and innovative teaching practices.

## Goal No. 9 Policy Development and Implementation

Policy development and implementation informed by the insights, experience and knowledge of our University community as well as research in the area

*Strategies*

9.1 Provide mechanisms for effective consultation and communication between policy making bodies and rele-

vant stakeholders in learning and teaching.

9.2 Support Faculties in contextualising the implementation of UNSW learning and teaching policies in ways that are relevant to their students and staff.

9.3 Provide mechanisms for Faculty contribution and ownership of UNSW Learning and Teaching policies.

9.4 All new learning and teaching policies will include a policy impact statement that will state how the policy is informed by and impacts on existing learning and teaching policy.

# Appendix C

# Summary of Guidelines on Learning that Inform Teaching at UNSW

### Engaging students in learning

1. Effective learning is supported when students are actively engaged in the learning process.

2. Effective learning is supported by a climate of inquiry where students feel appropriately challenged and activities are linked to research and scholarship.

3. Activities that are interesting and challenging, but which also create opportunities for students to have fun, can enhance the learning experience.

4. Structured occasions for reflection allow students to explore their experiences, challenge current beliefs, and develop new practices and understandings.

### Contextualising students' learning experiences

5. Learning is more effective when students' prior experience and knowledge are recognised and built on.

6. Students become more engaged in the learning process if they can see the relevance of their studies to professional, disciplinary and/or personal contexts.

7. If dialogue is encouraged between students and teachers and among students (in and out of class), thus creating a community of learners, student motivation and engagement can be increased.

### Creating an inclusive learning and teaching experience

8. The educational experiences of all students are enhanced when the diversity of their experiences are acknowledged, valued, and drawn on in learning and teaching approaches and activities.

9. Students learn in different ways and their learning can be better supported by the use of multiple teaching methods and modes of instruction (visual, auditory, kinaesthetic, and read/write).

### Designing an engaging, contextualised, and inclusive curriculum

10. Clearly articulated expectations, goals, learning outcomes, and course requirements increase student motivation and improve learning.

11. When students are encouraged to take responsibility for their own learning, they are more likely to develop higher order thinking skills such as analysis, synthesis, and evaluation.

12. Graduate attributes - the qualities and skills the university hopes its students will develop as a result of their university studies - are most effectively acquired in a disciplinary context.

### Teaching an engaging, contextualised, and inclusive curriculum

13. Learning can be enhanced and independent learning skills developed through appropriate use of information and communication technologies.

14. Learning cooperatively with peers - rather than in an individualistic or competitive way - may help students to develop interpersonal, professional, and cognitive skills to a higher level.

15. Effective learning is facilitated by assessment practices and other student learning activities that are designed to support the achievement of desired learning outcomes.

16. Meaningful and timely feedback to students improves learning.