Developing a distinctive undergraduate education
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Strategic Planning for 2016–20, Discussion Paper no. 1
June 2015

Foreword

We are coming to the end of our 2011–15 Strategic Plan. Much has been achieved. We are a stronger institution academically, financially, in our relations with government and the community, and also in terms of our physical infrastructure. But much remains to be done to restore us to our historic position as indisputably the best university in our nation, and arguably in the region.

The themes of our strategy for 2016–20 focus on our undergraduate educational offerings and research training, on strategic investment in research strengths, on shifting our institutional culture to release the talents of all our staff and students, and on reforming our governance and organisational design. A series of discussion papers addressing these four themes will be released in June – August 2015.

This first paper focuses on our undergraduate educational offerings. The ideas in this paper are intended to provoke a discussion about our educational values, our desired graduate attributes, and the curriculum framework and course architecture designed to deliver a distinctive Sydney education. I would encourage you to engage with them and to contribute to this important University planning process. This is a really exciting opportunity to build a truly world-class education here in Sydney.

Dr Michael Spence
Vice-Chancellor and Principal
1 Introduction

This is the first of two discussion papers about the future of education at the University of Sydney. This paper focuses on what we should offer educationally, and why: specifically, the qualities of our graduates, the characteristics of our curriculum, and the architecture of our degrees. The focus is intentionally undergraduate, as it is the undergraduate years that are critical in shaping our students’ intellectual and personal development and their preparation and aspirations for the future. Selective attention to the undergraduate curriculum is also appropriate given the just-completed University-wide review of all master’s degrees by the Academic Board as well as the recent design, from first principles, of a number of flagship professional graduate programs.

The next paper, planned for August, will focus on undergraduate and postgraduate education. It will consider the broad educational approaches we should prioritise to achieve our educational ambitions, as well as the best educational environment in which to achieve them.

In framing the discussion of this first paper, it is worth reflecting on the University’s core values as an educational institution and its proud history that began with a commitment to a liberal education and expanded to incorporate education in the professions and, later, in music and the arts. The current broad suite of academic programs is now offered within a comprehensive research-intensive setting. Nonetheless, the University’s core values – serving community through societal transformation, the selection of students on merit, and a liberal education intended to create ‘active, virtuous and enterprising citizens’ – remain as relevant today as they were at the University’s foundation in 1850. Although our academic activities now touch almost every field of intellectual endeavour and our communities reach around the globe, the University continues to aspire to provide an education that equips graduates with the knowledge, skills, values and purpose to serve society at every level and to lead the way in improving people’s lives.

A more contemporary expression of the University’s core values is found in the 2011-15 Strategic Plan: ‘engaged enquiry’ and ‘mutual accountability’ characterise, respectively, what the University aspires to achieve and how. ‘Engaged enquiry’ acknowledges and embraces the rich interdependencies that connect the University’s educational and research endeavours to each other and to the many communities the University serves. These interdependencies reflect: the seamlessness of learning that links the process of research discovery to the acquisition by each student of the methods for enquiry; the bringing together of fields of study to acquire new knowledge and solve complex problems; and the linkages to community that serve to identify and inform the more pressing societal questions we seek to address. ‘Mutual accountability’ recognises the interdependence of our many decisions and activities, hence the entailed commitment to excellence and integrity, relations of collaboration and respect, and shared governance models.

As we contemplate future educational directions, we see merit in affirming our commitment to these values and in ensuring that we give them expression in our educational programs, seeking a form that prepares our graduates for life and work in the contemporary world. As all levels of society confront increasingly pressing as well as emerging challenges, we need to equip graduates to participate in a more dynamic and uncertain world of work and in increasingly globalised communities.¹ We need to ensure that our graduates can respond wisely and fruitfully to uncertainty, difference and change.

¹ See, for example, Frey, C. B., & Osborne, M. A. (2013). The future of employment: how susceptible are jobs to computerisation? Oxford Martin School, University of Oxford. In Australia, the Committee for Economic Development of Australia is due to release a major report in June 2015 focussed on the future of Australia’s workforce. In both the UK and Australia, it is predicted that over 40% of the current national workforce could be replaced by automation within 10-20 years, with significant ramifications for future skills needs.
Our first task is therefore to identify the qualities that will best prepare graduates to succeed in the contemporary world in a manner that remains true to the University’s core values. The second is to design a framework for the curriculum that ensures graduates develop these qualities. The third is then to review the architecture of the University’s undergraduate degrees to ensure they incorporate this curriculum framework while also offering access to the richness and breadth of the University’s intellectual expertise.

Together, these three tasks are intended to lead to an agreed and coherent vision for undergraduate education at the University of Sydney. As we think about them, therefore, we should also reflect on what is and should be distinctive about this vision. Establishing such educational ‘common ground’ will ensure that everyone already working at the University, as well as anyone contemplating coming here to study or teach, has a very clear understanding of what we offer and why we offer it and what sets us apart.

The paper begins by providing some context to the discussion, drawing on international and national trends as well as the views and aspirations of our own staff and students. It then offers a discussion of proposals in three parts:

- **The Sydney graduate: contemporary qualities**
  This sets out the qualities proposed to characterise every Sydney graduate.

- **The Sydney curriculum: a common framework**
  This outlines a proposed Sydney curriculum, a broad framework intended to ensure that all students acquire the qualities of the Sydney graduate. It also describes the outstanding enrichment opportunities we intend to create at the University of Sydney and the advanced outcomes they will put within reach of every student.

- **Sydney undergraduate degrees: a coherent architecture**
  This third part lays out some options for the profile and structure of Sydney undergraduate degrees, each guided by the Sydney curriculum framework and delivering the qualities of the Sydney graduate.

The final section of the paper presents important next steps, inviting feedback and setting out some important further investigations to inform careful consideration of these proposals.
2 Context

This section briefly reviews international and national trends in curriculum as well as staff and student views relevant to graduate qualities, our curriculum, and our degree architecture.

2.1 Trends in higher education

As we begin to shape our educational aspirations for coming years, it is helpful to understand some of the significant debates on curriculum and student outcomes occurring in higher education more broadly. These debates signal some important challenges already confronting us, or on the horizon.

One of the most important of these debates concerns the overall level of student learning, particularly the development of broad capabilities such as critical thinking, problem solving and communication. An influential US study, 2 for example, demonstrated that contemporary US university students are making relatively small gains in skills for critical thinking and writing, smaller than those of students assessed in prior decades. This measured decline in learning outcomes was attributed to the combination of students spending less time on academic work and having fewer demands placed on them by universities. A follow-up of the same study demonstrated that low gains in skills during university translated into poor employment outcomes thereafter. 3 This finding, together with earlier evidence that the trajectory of learning established during university continues on a similar course after university, underlines the vital importance of ensuring substantial gains in capabilities over the course of a degree. 4

With such issues in mind, many higher education systems have developed a new focus on quality of outcomes. In Australia, the demand-driven system has been coupled with the creation of the Tertiary Education Quality and Standards Agency, a commitment to greater transparency in reporting indicators of the student experience and graduate outcomes, and a revised set of Higher Education Standards 5 with a clear focus on learning outcomes. As the adoption of outcomes-oriented accreditation processes in many of the professions has demonstrated, a focus on degree-level learning outcomes has encouraged more coherent degree-level curricula and greater attention to the assurance of learning outcomes.

To lift educational outcomes, some universities have targeted so-called ‘high-impact’ educational activities that have been demonstrated to have a substantial impact on broad learning outcomes. 6 These include ‘freshmen seminars’, writing-intensive courses, mobility experiences, research projects, and ‘capstone’ industry or community-based projects and placements. These experiences arguably encourage the integration of knowledge and skills acquired across various components of a degree, and hence contribute to development of the broader capabilities required for employment or further study experiences.

Indeed, some universities are beginning to make a commitment to a particular type of high-impact ‘experiential’ learning opportunity: for example, to an undergraduate research experience (for example, University of Texas at Austin), to a mobility requirement (for example, Fudan University, University of Minnesota), or to community-based service learning of some form (for example, Macquarie University). Research experiences deepen disciplinary knowledge and build broader skills; mobility experiences can build intercultural and global civic awareness while also fostering independence; service learning can likewise make an important contribution to the development of civic awareness and social responsibility.

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5 See education.gov.au/final-proposed-higher-education-standards-framework
In the UK, many universities are now offering four-year versions of their three-year bachelor’s degrees which incorporate either the study of a language and a substantial mobility experience, or an extended workplace or community placement or project. At the same time, many universities overseas are also increasing their co-curricular support for transitioning to a career, with enhanced support for career preparation and career management.7

Curriculum debates have also focused on the development of interdisciplinary learning experiences. These are seen as an important means by which students can learn to:
− address complex and authentic issues and problems
− recognise the role of different forms of disciplinary expertise
− communicate across disciplinary boundaries
− work productively in interdisciplinary teams
− understand the important role of social, political and cultural factors
− deal with complexity and uncertainty
− develop integrative solutions that are ethically and socially responsible.8

Another subject of debate has been the balance between depth of disciplinary knowledge and skills, on the one hand, and breadth of knowledge and skills, on the other. For example, core undergraduate degree requirements ensuring that every student undertakes some study across a combination of science, humanities, social science and design disciplines have long been common in US universities. Other universities have formulated ‘breadth’ requirements, ensuring a proportion of study outside the primary discipline grouping of a student’s degree.9

Some university leaders have taken the arguments for integration further, proposing that students should have opportunities within their undergraduate degree to integrate growth in intellectual capacity with growth in more personal qualities.10 These arguments have focused variously on:
− the important neurocognitive and psychosocial developmental trajectories in late adolescence and early adulthood and the need for educational experiences that foster the attainment of advanced developmental outcomes
− more solid foundations for civic contribution, including capacities for ethical reasoning and broader intellectual perspectives, both of which are seen as necessary for addressing significant contemporary societal challenges and opportunities
− recognition of the ongoing value and relevance of an education in the liberal arts and sciences and on curricula that provoke discussion of purpose and values and encourage the integration of values and knowledge
− the need to counterbalance the compartmentalisation or, as some would argue, fragmentation of academic programs that has resulted from the dominance of ‘discipline’ as a powerful organising principle for academic activity within contemporary research-intensive universities.

While these and other debates continue, a number of universities are taking the time to subject the purpose and nature of their curriculum to intensive review, and to be willing to entertain significant change in order to ensure that their educational programs meet the needs of contemporary graduates in a changing world.11

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7 An impressive recent example is the initiative at Rice University in Texas, funded by a US$50 million gift, to create a Leadership Institute focused on developing skills through a variety of personalised, course-based and experiential learning opportunities; see insidehighered.com/news/2015/05/14/rice-university-creates-new-leadership-institute.


9 For example, the University of Melbourne and the University of Western Australia.


11 See, for example, MIT’s 2014 review at web.mit.edu/future-report/TaskForcefinal_July28.pdf. In Australia, both the University of Melbourne and the University of Western Australia have undertaken whole-of-university curriculum reviews in recent years.
2.2 Staff and student views on education and curriculum

Outcomes of the recent University-wide survey of staff and students\(^\text{12}\) as well as data from national student surveys are also helpful in informing the discussion about graduate qualities, curriculum, and degree architecture. The recent survey, in particular, delivered some clear messages about staff and student priorities and aspirations for education at Sydney.

First, it was evident that Sydney’s reputation remains the paramount consideration as to why staff and students choose to work and study here. Students’ perceptions of what it means to be at Sydney focused on receiving a high-quality education at a prestigious institution with a strong reputation.\(^\text{13}\) For staff too, working at Sydney was primarily associated with a strong sense of pride in being part of a well-known and respected institution.\(^\text{14}\) As such, there continue to be high expectations of the university as a whole and, for students, of the education it will provide.

Second, staff and students overwhelmingly supported the continuation of the current core strategy to Develop our capacity to identify and promulgate excellence in teaching.\(^\text{15}\) Consistent with this, students ranked Fostering of teaching excellence first out of eight proposed core components of the University’s strategic focus, and staff ranked it a very close second to Fostering of research excellence.\(^\text{16}\) However, when asked to rate the university’s performance against the same eight core components, students placed Fostering of teaching excellence second last, and staff placed it equal last.

Students also nominated Poor teaching as the second most significant barrier to achieving their educational goals.\(^\text{17}\) These findings are consistent with the results of national surveys, which rank the University of Sydney in the lowest quartile of the distribution within the Go8 and nationally for quality of teaching, even though ratings for learner engagement are much more positive and in the upper part of the distribution.\(^\text{18}\) Furthermore, one quarter of students and nearly half of staff felt that the university does not value education/teaching as much as research.\(^\text{19}\)

The clear message is that excellence in teaching remains a top priority endorsed by the whole university community, but one that we must work harder in practice to achieve, not least in terms of achieving a better balance between the values (real or perceived) placed on research and education. How to achieve this will be the subject of proposals in the second discussion paper in August.

Third, a sizeable proportion of staff and students acknowledged challenges in navigating our educational programs. While more students were positive than negative about the navigability of degree pathways, up to a third reported some difficulty in understanding or choosing degree options and in accessing support for decision making.\(^\text{20}\) More staff saw merit in refining the University’s degree profile than not, though up to half reserved judgment on the question.\(^\text{21}\)

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12 sydney.edu.au/news/staff/2576.html?newscategoryid=221&newsstoryid=14979

13 What does it mean to you to be a student at the University of Sydney? Top three responses were: Receive a high-quality education (17%), Strong reputation, prestige (20%), and Privileged, respected and proud (14%).

14 What does it mean to you to be a staff member at the University of Sydney? Top three responses were: Respect and pride (18%), Prestige, privilege, well-known (13%), and Experience, development, opportunity (15%).

15 In considering which of the 17 current core strategies we should seek to build upon, Developing our capacity to identify and promulgate excellence in teaching was ranked first by students and third by staff.

16 To what extent do you believe each of the following should be a core component of the University’s strategic focus? Staff prioritised Fostering of research excellence (91%) followed by Fostering of teaching excellence (90%).

17 Almost 1 in 2 students (48%) noted aspects of their experience at the University that make it difficult for them to achieve their educational goals. The top three barriers were: Limited subjects and content (15%), Poor teaching (12%), Financial hardship, limited support and Limited resources (both 10%).

18 2014 Course Experience Questionnaire (CEQ) for 2013 graduates four months post-graduation; Good Teaching scale – Sydney 65%, Go8 average 65%, national average 67%. 2014 University Experience Survey (UES) of first and later year undergraduates: Overall Quality of Teaching – Sydney 78%, Go8 average 80%, national average 81%; Teaching Quality – Sydney 81%, Go8 average 81%, national average 82%; Learner Engagement – Sydney 65%, Go8 average 64%, national average 61%.

19 Do you feel education/teaching is as valued as research at the University? 43% of students said Yes, 26% said No, and 31% were Unsure. Of those who said No, by far the main reasons given (48%) were Research emphasised above quality of teaching, lack of teaching resources, lack of emphasis on students. 33% of staff said Yes, 43% said No, with 24% Unsure. Of those who said No, by far the main reason given (53%) was Research or penalising based on research, with Research emphasised above quality of teaching, lack of teaching resources, lack of emphasis on students in second place (18%).

20 It is/was difficult to decide which degree to study at the University due to the wide range of degrees on offer: 33% agreed or strongly agreed and 38% disagreed or strongly disagreed. I am aware of the degree pathways available to me at the University of Sydney: 57% agreed or strongly agreed and 20% disagreed or strongly disagreed. The University provides support and input into my decision making process around what degree pathways I can pursue: 42% agreed or strongly agreed and 24% disagreed or strongly disagreed.

21 The University should refine and simplify the profile of its degree offerings: 42% agreed or strongly agreed, 14% disagreed or strongly disagreed, and the rest neither agreed nor disagreed.
Fourth, students registered a strong desire for a richer and broader educational experience while at university. Of the 17 current core strategies we should seek to build upon, students ranked *Enrich the experience of University life for all our students* third and *Expand and diversify opportunities for students to develop as global citizens* fourth. Staff also were highly supportive of the aspiration, with three-quarters (as well as three-quarters of students) thinking *Promotion of optimal student experience* should be a core component of the University’s strategic focus. However, fewer than half our students and staff were enthusiastic about the University’s performance on this score. Furthermore, nearly half of all students nominated *Limited subjects and content* as the principal barrier to achieving their educational goals. Again, there is a clear message that students – and, we might argue, deserve – a richer and less constraining experience from the university.

What might this experience look like? Several themes emerge from the survey and, while not exhaustive, they indicate some of the improvements and extensions to our curricular and co-curricular activities that we might aspire to.

- **Linking studies to the ‘real world’**. At least three-quarters of students expressed interest in being given the opportunity to link their studies to ‘real world’ settings and skills. Mirroring this, most staff thought the University’s curriculum should provide strong intellectual foundations and skills for the contemporary world. Furthermore, around three-quarters of both staff and students were in favour of *Commitment to external engagement with industry, society and government* as a core component of the University’s strategic focus.

- **Opportunities for interdisciplinary and inter-professional studies**. Three-quarters of students were interested in being given the opportunity to take units of study offered by faculties/schools other than the one which I am enrolled in, and nearly three-quarters of staff felt that *Undergraduate students would benefit from undertaking interdisciplinary units of study that contextualise their disciplinary understanding*. A similar proportion of staff also agreed that *Students enrolled in professional degrees would benefit from being provided interprofessional learning opportunities*.

- **Developing an understanding of ethical issues**. More than half the student respondents said they would value an opportunity to *discuss ethical questions in the context of my degree program*, with one in five expressing strong agreement. This is a remarkable result for a non-instrumental and arguably altruistic area of knowledge.

- **Embracing social and cultural diversity**. Of the 17 current core strategies we should seek to build upon, *Attract and support promising students from a diversity of social and cultural backgrounds* was ranked first by staff and second by students. Nearly two-thirds of staff also felt it important that there be an understanding of and responsiveness to social and cultural diversity in our learning and teaching.

- **Acquiring skills in research**. Although there was no explicit question in the survey about this, students agreed that the University’s *education/teaching and research should be more closely aligned* and ranked *Fostering of research excellence* second only to *Fostering of teaching excellence* in terms of the proposed core components of the University’s strategic focus. But perhaps more importantly there is a natural correlation between students’ interest in studying ‘real world’ issues and the need for research capabilities with which to tackle them. Real world problems are typically complex, often interdisciplinary and sometimes novel, demanding skills in identifying the right questions as well as trenchantly pursuing the answers.

Importantly, all of these preferences are aligned with the very clear aspiration of our staff for an education that gives graduates strong intellectual foundations and skills for whatever their future holds.

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22 Promotion of optimal student experience was supported by 75% of students and 78% of staff.

23 How do you rate the University’s performance across each of the following? Performance on Promotion of optimal student experience was rated good or excellent by 49% of students and 42% of staff, and poor or terrible by 15% of students and 16% of staff.

24 See footnote 17.

25 78% of students said they would value an opportunity to undertake a course-related project in a workplace or community setting during my course.

26 45% of staff strongly agreed with this statement, and 42% agreed.

27 54% of students agreed that the University’s education/teaching and research should be more closely aligned and only 5% disagreed.
3 Undergraduate education at the University of Sydney

3.1 Introduction

The educational concerns and aspirations of staff and students just reviewed confirm feedback received on ‘Towards a distinctive Sydney education: a discussion paper’, released by the Deputy Vice-Chancellor (Education) in October 2014.28 They also affirm the centrality of the three core educational issues identified at the outset of this paper: the qualities that should distinguish a University of Sydney graduate; the curriculum framework that might be adopted to yield those qualities; and a degree architecture encompassing this framework that retains our outstanding intellectual breadth across a rich constellation of fields of study, while also rendering coherent, attractive and navigable the study pathways they afford.

3.2 The Sydney graduate: contemporary qualities

3.2.1 Background

What qualities do our graduates need for the contemporary world? To contribute effectively in today’s rapidly changing world, graduates not only need deep knowledge of their field or disciplines of study and well-developed skills for critical thinking, problem solving, communication and teamwork. They also need the capabilities for continuous learning, for updating their knowledge and skills in information literacy, and for the flexibility and breadth of perspective to interact productively and creatively across cultural, disciplinary and professional boundaries. They need, too, the personal resilience to deal with uncertainty and failure, and the sureness of personal values and clarity of social purpose to lead ethical responses to whatever challenges confront them and their communities. The importance of such contemporary qualities was powerfully confirmed by staff and students in the recent survey.

Many of these qualities will be shared with graduates of research-intensive universities around the world, yet the specific constellation of qualities we propose and the curriculum framework for assuring it are distinctive. These graduate qualities will be demonstrably reflected in the learning outcomes for each of our degrees. Our graduates will take these qualities into their future workplaces, communities and learning experiences; and, as such, every graduate will in some sense embody the values of the University.

3.2.2 Proposed qualities

The qualities proposed for the Sydney graduate have been informed by feedback to the discussion paper, ‘Towards a distinctive Sydney education’ of October 2014. They are summarised in Table 1 and discussed in detail thereafter. We see these qualities as providing the foundations for informed, well-judged and positive contributions to society, both in the workplace and the community at large, and indeed as the foundations for longer-term intellectual and professional leadership. In combination, these qualities should enable the University’s graduates to envision – and lead in bringing about – ways of doing things that are more effective, more humane, more just, more productive and more sustainable.

28 The paper itself as well as a brief summary are available at intranet. sydney.edu.au/news-initiatives/education.html. In addition to the issues addressed here, feedback affirmed the importance of enhancing teaching and learning and of broadening the educational outcomes of the PhD. These issues will be addressed in the subsequent discussion paper, planned for August 2015.
Table 1. Proposed qualities of the Sydney graduate: foundations for leadership

<table>
<thead>
<tr>
<th>Graduate qualities</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td>Depth of disciplinary expertise</td>
<td>To excel at applying and continuing to develop disciplinary expertise</td>
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<tr>
<td>Broader skills:</td>
<td></td>
</tr>
<tr>
<td>- critical thinking and problem solving</td>
<td>To increase the impact of expertise, and to learn and respond effectively and creatively to novel problems</td>
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<tr>
<td>- communication</td>
<td></td>
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<tr>
<td>(oral and written)</td>
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<tr>
<td>- information/digital literacy</td>
<td></td>
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<tr>
<td>- inventiveness</td>
<td></td>
</tr>
<tr>
<td>Cultural competence</td>
<td>To work productively, collaboratively and openly in diverse groups and across cultural boundaries</td>
</tr>
<tr>
<td>Interdisciplinary29 effectiveness</td>
<td>To work effectively in interdisciplinary (including interprofessional settings and to build broader perspective, innovative vision, and more contextualised and systemic forms of understanding</td>
</tr>
<tr>
<td>An integrated professional, ethical and personal identity</td>
<td>To build integrity, confidence and personal resilience, and the capacities to manage challenges and uncertainty</td>
</tr>
<tr>
<td>Influence</td>
<td>To be effective in exercising professional and social responsibility and making a positive contribution to society</td>
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</table>

Depth of disciplinary expertise

Foremost among the qualities of Sydney graduates should be, as it has always been, deep knowledge of one or more disciplines or fields of study (including professional fields) together with well-developed skills for critical analysis, problem solving and further learning and enquiry in that discipline. Deep disciplinary knowledge is a necessary substrate for high-level disciplinary skills and for the intellectual capability to apply knowledge in practice and to solve problems successfully. Given our commitment to the seamlessness of education and research – the constructive process of learning being related to the process of discovery – we should continue also to place a high priority on developing graduates’ research skills in their discipline: all graduates should be able to respond to problems and issues of the moment by asking and recognising fruitful questions and by seeking answers informed by evidence.

Broader skills

The deep disciplinary knowledge and skills of a Sydney graduate should be accompanied by additional qualities that enable disciplinary and professional expertise to be utilised for broader purposes. These additional qualities include communication, critical thinking and problem-solving skills. They include a capacity for inventiveness and responding effectively to novelty. And, given the rapidly changing nature and modes of access to information, as well as rapidly emerging digital technologies and forms of automation, they include the skills and understanding to work effectively, critically and creatively with a burgeoning smorgasbord of technology-enabled information, data and tools.

Cultural competence

Wingara Mura – Bunga Barrabugu (‘thinking path to make tomorrow’), the University’s Aboriginal and Torres Strait Islander Integrated Strategy, has already committed the University to embedding cultural competence in pedagogy and curriculum and lifting the profile of Aboriginal and Torres Strait Islander cultures, experiences and issues in the teaching and learning environment. This distinctive commitment to cultural learning should extend to the many other cultures that contribute to an evolving Australian society and that share our region and beyond. Our graduate qualities should therefore include understanding and respect for cultural and social differences and the skills to participate effectively in diverse interpersonal and professional settings.

Interdisciplinary effectiveness

Graduates are increasingly required to work in interdisciplinary and interprofessional teams, accommodating, respecting and drawing upon other disciplinary and professional knowledge, skills and modes of enquiry. To do so effectively, they need capabilities and forms of understanding that contextualise and provide perspective on their own disciplinary skills and knowledge and that lay the foundations for a more systemic understanding of the environments and systems in which they will live and work.

29 We use the term ‘interdisciplinary’ in a broad sense noting the distinctions often made among the terms ‘multidisciplinary’, ‘interdisciplinary’ and ‘transdisciplinary’ (e.g. Frodeman, R., Thompson Klein, J., & Mitcham, C. (Eds) (2010), The Oxford Handbook of Interdisciplinarity. Oxford: OUP). We see all of these forms as potentially important to future educational and research activity.
An integrated personal, ethical and professional identity

To engage successfully with challenge and uncertainty, novel problems, and new and unfamiliar settings, cultures and disciplines, graduates will need to draw on and continue to develop a system of cultural and personal values. Personal and professional integrity is built on the capacities to recognise and reflect on personal and cultural value systems and to understand the role of values and ethics in the reasoning and actions of self and others. It entails the ability to identify shared values, to recognise, acknowledge and reflect on differences, and to develop approaches for responding constructively to difference. It also requires the integration of intellectual or professional values with more personal values, and analysis and resolution of tensions within an emergent broader identity, characterised here as ‘an integrated identity’. 30

Influence

Finally, University of Sydney graduates should make a positive contribution by variously serving and leading their communities. They should have the capacity to contribute through their workplaces and through civic and community organisations. They may also find themselves in situations in which they need to take the first step, guide others to adopt a new practice, or set a new direction. We should therefore provide graduates with the capabilities and confidence to exercise agency and exert influence in such circumstances.

Together, this constellation of qualities is sympathetic to arguments for more integrative approaches to higher education canvassed earlier. It reframes in contemporary terms the purpose of an undergraduate education at the University of Sydney while still reflecting the University’s foundational values.

3.2.3 Proposal for consideration

Proposition 1

That the University adopt the Graduate Qualities set out in Table 1 and reflect them in the learning outcomes of each of its bachelor’s degrees. 31

30 The term is taken from Thompson, R. J. Jr (2014). Beyond reason and tolerance: The purpose and practice of higher education. New York: Oxford University Press
31 We focus on undergraduate education in this paper but there is clearly value in also discussing the adoption of these Graduate Qualities for all entry-to-profession degrees at the master’s level. It is recognised that the Graduate Qualities will be reflected in degree learning outcomes in a way that takes account of the educational context of the degree.

3.3 The Sydney curriculum: a common framework

How will we ensure that Sydney graduates acquire the qualities described above? The mechanism we propose is a curriculum framework: a broad structure for the constituent educational experiences offered by each bachelor’s degree. The framework is based on the best evidence available concerning these educational experiences 32 and is intended to maintain an appropriate balance between, on the one hand, depth of disciplinary expertise and, on the other, broader capabilities, an understanding of broader intellectual landscapes, more authentic educational challenges, and the integration of knowledge with professional and personal ethics and values. This is a rare opportunity to review and redesign our academic programs around a consistent and distinctive approach that will equip our graduates to make productive, adaptive and ethical contributions to society and to take on positions of intellectual and professional leadership in their lives ahead.

The proposed curriculum framework comprises Core components that are essential for every student plus Enrichment opportunities that are intended to be available but not required for every student. These components are introduced in the following sections but will of course require more detailed discussion across the University, especially of how they could be implemented. Potential challenges for implementation are noted for a number of the components. A more complete ‘mapping’ of the components to the proposed Graduate Qualities is provided at 3.3.4. We begin with the core components.

3.3.1 Curriculum framework: core components

Seven core components are proposed. They vary in form, complexity and current state of implementation and are summarised in Table 2, with detailed discussion following.

Table 2. The Sydney curriculum framework: core components to produce the graduate qualities

<table>
<thead>
<tr>
<th>Core component</th>
<th>Graduate qualities</th>
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<tr>
<td>A major or specialisation in at least one field of study</td>
<td>- Depth of disciplinary expertise</td>
</tr>
<tr>
<td>- Depth of disciplinary expertise</td>
<td></td>
</tr>
<tr>
<td>- Broader skills</td>
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<td>- Cultural competence</td>
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<td>- Integrated identity</td>
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<tr>
<td>A structured approach to the development of knowledge and skills</td>
<td>- Depth of disciplinary expertise</td>
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<td>- Broader skills</td>
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<tr>
<td>- Cultural competence</td>
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<td>- Integrated identity</td>
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<td>- Influence</td>
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<tr>
<td>Collaborative and group-based learning activities and assessments</td>
<td>- Broader skills</td>
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<td>- Cultural competence</td>
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<td>- Integrated identity</td>
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<td>- Influence</td>
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<tr>
<td>Interdisciplinary and interprofessional learning experiences</td>
<td>- Broader skills</td>
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<td>- Interdisciplinary effectiveness</td>
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<tr>
<td>- Influence</td>
<td></td>
</tr>
<tr>
<td>Authentic problems and assessments</td>
<td>- Depth of disciplinary expertise</td>
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<tr>
<td>- Broader skills</td>
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<td>- Interdisciplinary effectiveness</td>
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<td>- Integrated identity</td>
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<td>- Influence</td>
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<tr>
<td>An open learning environment for extension of knowledge and skills</td>
<td>- Broader skills</td>
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<tr>
<td>- Interdisciplinary effectiveness</td>
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<td>- Integrated identity</td>
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<td>- Influence</td>
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<tr>
<td>Project-based learning</td>
<td>- Depth of disciplinary expertise</td>
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<tr>
<td>- Broader skills</td>
<td></td>
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<tr>
<td>- Integrated identity</td>
<td></td>
</tr>
<tr>
<td>- Influence</td>
<td></td>
</tr>
</tbody>
</table>

1. A major or specialisation in at least one field of study
   Disciplinary expertise requires a sustained and coherent program of study in the discipline or broader field. Such a structure is already well established in Sydney degrees, taking the form of a major, specialisation or professional field (respectively, for example, history, chemical engineering, and physiotherapy).

2. A structured approach to the development of knowledge and skills
   The curriculum should offer a coherent set of learning experiences that systematically builds disciplinary knowledge, skills and methods for enquiry, as well as broader skills for communication, analysis, critical thinking, problem solving, ethical reasoning and cultural competence. These structured experiences should begin in Semester 1 of the first year and culminate in a final year project that requires students to integrate knowledge and skills acquired over multiple units of study throughout their degree. In the intervening semesters, learning experiences should include opportunities for students to generate questions and analyse and address novel problems, building skills for the final-year project. Ideally, the final project would allow the assessment of a number of course-level learning outcomes including broader skills. This would yield evidence often sought by prospective employers, increasingly required for professional accreditation, and now necessary to demonstrate attainment of Higher Education Standards.33

Implementation challenges

Implementing this structured approach would require careful design at the level of the major or specialisation. It will also require more coordination of curriculum and assessment design at the level of major or specialisation, especially in core units of study. Particular attention to the design of the first and final years is likely to be necessary, and to the way in which skills development is balanced across core and elective units of study. While we know that this work has been initiated successfully through recent curriculum renewal projects, we now need to ensure appropriate coverage of knowledge and skills development for every undergraduate student.

33 There may be value in developing a common University-wide rubric, derived from the qualities of the Sydney graduate, for the assessment of course learning outcomes.
3. Collaborative and group-based learning activities and assessments
Collaborative learning activities and assessments provide vital opportunities for the development of skills to work with others. These activities should take advantage of the diversity of the University's student community and should contribute to the development of cross-cultural understanding and effective intercultural communication. Carefully designed, group-based learning activities and assessments build on smaller-scale, collaborative learning activities to ensure that students can fulfil the expectations of others in team contexts, lead a designated part of a group project and, on occasion, lead the project itself and resolve difficulties that can arise in group contexts.

Implementation challenges
A more extensive discussion of the use of peer, group and network-based learning designs is intended for the second Education paper, due in August. But noted here is the importance of designing with care the extent and form of, and support for, collaborative and group-based learning activities to ensure that students can fulfil the intended learning outcomes for collaboration, teamwork and leadership. Students often report difficulties with group work and sometimes see it as overused, so we need to be clear about the importance of these vital skills for interaction, as well as effective in ensuring that key learning outcomes are attained.

4. Interdisciplinary and interprofessional learning experiences
Opportunities to engage in interdisciplinary and interprofessional learning build the capacity for interdisciplinary effectiveness and have the added benefit of further developing critical thinking skills. A variety of forms of interdisciplinary engagement within the curriculum are possible and include: units of study built around interdisciplinary problems, themes or issues, such as seminars connecting undergraduate students to passionate research leaders and to the University’s strategic research priorities; interprofessional learning experiences and/or units of study that require students to solve problems in realistic interprofessional settings; interdisciplinary projects that require a team of students with different disciplinary backgrounds to work together on complex problems.

Implementation challenges
Implementing these learning experiences is likely to require careful discussion within and across disciplines and professional domains. A primary question will be: should such experiences be embedded in existing or new disciplinary or professional units of study, ensuring rich consideration of interdisciplinary content in what is nonetheless a discipline-grounded perspective, or should a small number of new, interdisciplinary or interprofessional units be developed by collaborating disciplinary/professional experts? Both approaches have their advantages and implementation challenges, though the latter is likely to be more efficient and effective when done well.
5. Authentic problems and assessments
Authentic problems challenge students to integrate knowledge and skills in unfamiliar but realistic contexts. Authentic problems are those that arise in external or research contexts, for example, in organisational or broader commercial and community settings, and the solutions to which are of genuine and potentially pressing interest. They are important because they reflect circumstances that students are likely to encounter in the future, they are frequently multidisciplinary in form, they typically require that the context be taken into account, and they are often genuinely novel. They therefore require students to work through the uncertainties that these various forms of novelty present, encouraging more inventive, entrepreneurial and contextualised approaches to problem solving. If offered as a group-based activity – and where problems are multidisciplinary in form, this may be most effective – authentic problems also draw on collaboration skills in order to develop novel approaches, further developing students’ abilities to work across cultural, disciplinary or professional boundaries.

Implementation challenges
Implementing this curriculum component is likely to entail modest redesign of learning activities and assessment in the early years of each degree, and may require more substantial changes in later years, for example, the inclusion of a group or individual project addressing a research or practice problem. A vital implementation issue is that of scaling, particularly in the later years: how can we deliver authentic, integrative and challenging experiences at the scale required to make them available to every student? While the answer to this question is likely to differ across degrees, there are some promising prospects, a number of which have already proven effective in different settings. For example, simulation is increasingly used to prepare students and maximise learning in later placements in external settings. Bringing authentic problems into the classroom, to be addressed by multiple student groups, sometimes in multidisciplinary teams, has also been used successfully. In some cases, the outcomes of such group projects can be ‘pitched’ to the industry or community organisation that provided the problem and may lead, in turn, to further project work and to research opportunities.\(^4\)

Competitions are also a valuable way of bringing authentic challenges to students individually or in disciplinary or multidisciplinary teams. Good contemporary examples at the University of Sydney include the Interprofessional Learning Challenge and the Analytics competition. International examples include the Emory Global Health Challenge and the iGEM competition in synthetic biology.

6. An open learning environment for extension of knowledge and skills
The curriculum should give students opportunities to build novel skill combinations and extend their knowledge by exploring other fields of study. This could be done by providing access to short, modular courses or resources that allow students to acquire, in flexible ways tailored to their specific learning needs, foundational concepts and methods of other disciplines, including basic skills in programming, data analysis, research techniques, systems thinking, team leadership, and project management, as well as understandings of cultural or broader contextual backgrounds.

Implementation challenges
An open learning environment could be implemented over a period of time and, ideally, would be synchronised with the creation of resources for units of study being offered in our regular academic programs, open online courses and/or co-curricular academic enrichment activities.

7. Project-based learning
Experiential learning activities have a demonstrably significant impact on course learning outcomes, particularly where they take the form of substantial projects. Projects provide challenge, novelty, and the opportunity to build and integrate knowledge and skills to solve authentic problems (discussed above). If projects are offered as group-based activities, learning outcomes can include skills in collaboration and in working across cultural, disciplinary or professional boundaries.

Implementation challenges
The challenges for implementing project-based learning are similar to those for implementing ‘authentic problems’ (above): modest redesign of learning activities and assessment in the early years of each degree; more substantial changes in the later years; and the issue of scaling.

\(^4\) The Vice-Chancellor’s Industry Engagement and Commercialisation Working Group has recently recommended the development of ongoing relationships with specific community and industry organisations. This would support our efforts to provide authentic challenges to students and could in time lead to sustained multi-stranded research and education relationships that offer mutual benefit to the University and the external organisation.
3.3.2 Curriculum framework: enrichment opportunities

As well as delivering core educational experiences that nurture the proposed Sydney graduate qualities, we should provide an educational setting that enables students to deepen and extend these qualities. Students should take the lead in this process, choosing from the opportunities available those that serve their individual interests, aspirations and emerging capabilities and that are aligned with their evolving personal and intellectual identities. Some of the most important opportunities are summarised in Table 3 and discussed in detail thereafter.

Table 3. The Sydney curriculum framework: enrichment opportunities to extend the graduate qualities

<table>
<thead>
<tr>
<th>Enrichment opportunities</th>
<th>Graduate qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities to develop expertise across multiple fields of study</td>
<td>- Broader skills</td>
</tr>
<tr>
<td></td>
<td>- Interdisciplinary effectiveness</td>
</tr>
<tr>
<td></td>
<td>- Cultural competence</td>
</tr>
<tr>
<td></td>
<td>- Integrated identity</td>
</tr>
<tr>
<td></td>
<td>- Influence</td>
</tr>
<tr>
<td>Opportunities for research</td>
<td>- Depth of disciplinary expertise</td>
</tr>
<tr>
<td></td>
<td>- Broader skills</td>
</tr>
<tr>
<td></td>
<td>- Interdisciplinary effectiveness</td>
</tr>
<tr>
<td></td>
<td>- Influence</td>
</tr>
<tr>
<td>An open and connected learning environment and an academically rich co-curriculum</td>
<td>- Broader skills</td>
</tr>
<tr>
<td></td>
<td>- Cultural competence</td>
</tr>
<tr>
<td></td>
<td>- Interdisciplinary effectiveness</td>
</tr>
<tr>
<td></td>
<td>- Integrated identity</td>
</tr>
<tr>
<td></td>
<td>- Influence</td>
</tr>
<tr>
<td>Opportunities to broaden cultural horizons</td>
<td>- Broader skills</td>
</tr>
<tr>
<td></td>
<td>- Cultural competence</td>
</tr>
<tr>
<td></td>
<td>- Integrated identity</td>
</tr>
<tr>
<td></td>
<td>- Influence</td>
</tr>
<tr>
<td>Opportunities for contribution and leadership</td>
<td>- Integrated identity</td>
</tr>
<tr>
<td></td>
<td>- Influence</td>
</tr>
</tbody>
</table>

1. Opportunities to develop expertise across multiple fields of study

A commitment to disciplinary expertise and interdisciplinary effectiveness points naturally to the value of offering students opportunities to develop deep expertise in more than one field of study. Graduates with expertise in multiple fields of study are well-placed to be creative and influential at the boundaries of their disciplines and to envision novel approaches and solutions. To provide these opportunities, we need to ensure that course rules and structures afford access to multiple fields.

2. Opportunities for research

A commitment to disciplinary expertise and broader skills development entails the value of providing opportunities for students to develop research skills from early in their undergraduate years. Such opportunities enable students to challenge existing approaches and pose new questions, creating an environment that stimulates inventiveness and self-directed learning. The greater level of intellectual challenge also requires students to integrate diverse forms of knowledge and diverse disciplinary approaches.

3. An open and connected learning environment and an academically rich co-curriculum

A commitment to the qualities of the Sydney graduate entails a commitment to encouraging curiosity, exploration and self-direction, to giving students opportunities to pursue broader interests beyond the requirements of core curriculum and, in some cases, beyond the curriculum itself. It also points to the importance of affording richer opportunities for discovery through peer interaction, creating within the University an open, engaged and interdisciplinary learning community. To encourage self-directed learning, we can offer elective units of study (as at present) as well as smaller modules on specific topics and skills (in addition to those proposed for the core curriculum components), ideally in a manner that is openly accessible at any time. The co-curriculum has an important part to play too, and we should ensure a rich ecosystem of academically oriented co-curricular opportunities to extend and deepen students’ knowledge and capabilities.
4. Opportunities to broaden cultural horizons
The University has a breadth of expertise in Aboriginal and Torres Strait Islander cultures and a commitment to working in partnership for mutual benefit with contemporary Aboriginal and Torres Strait Islander communities. We also have expertise in cultures of the region and beyond, and offers an outstanding range of language and culture majors. Located in Australia’s most internationally connected city, the University of Sydney is well-positioned for a broad range of inbound and outbound mobility experiences. It is therefore the ideal setting in which to offer enrichment opportunities for cultural competence. Priorities should be the study of other languages and cultures, including through the Diploma of Languages; opportunities to participate in a range of cultural immersion and/or mobility opportunities, including in winter and summer semesters; and the exploration of cultural difference and its implications so as to support students in developing productive ways of responding to differences in cultural values.

5. Opportunities for contribution and leadership
While we seek to build the skills to influence and contribute positively in all of our graduates, we should also strive to offer early opportunities to those students wishing to develop their emerging capabilities and interests in community contribution and leadership. Opportunities for debate, for volunteering, for contributing to community projects, and for leading and participating in student-initiated projects and activities are some of the many ways in which we can support the development of influence and leadership.

Broader implementation challenge
In addition to the challenges already identified in implementing each of these specific curriculum components, there is also a broader curriculum challenge: how can we fit these components into our degrees without compromising their academic rigour or, in the case of professionally accredited degrees, their professional accreditation status? For the bachelor’s-level professional degrees, our answer must be that we will work within the requirements for accreditation, recognising that we may need to be creative in designing new ways to achieve both the Graduate Qualities and the relevant professional accreditation standards. We pick up the question for other undergraduate degrees in the following section.

3.3.3 Proposals for consideration

**Proposition 2**
That the University endorse, in principle, the proposed curriculum framework for bachelor’s degrees.

3.3.4 Mapping curriculum framework to graduate qualities
Table 4 illustrates how the proposed graduate qualities would be served by the core components and enrichment opportunities of the proposed curriculum framework.
<table>
<thead>
<tr>
<th>Qualities</th>
<th>Curriculum components</th>
<th>Enrichment opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth of disciplinary expertise</strong></td>
<td>- Ensure that every student completes a major or stream in at least one field of study</td>
<td>- Offer elective units of study involving research projects</td>
</tr>
<tr>
<td></td>
<td>- Embed within every major or stream a coherent set of core learning experiences that build knowledge, skills and methods of enquiry in relevant fields of knowledge</td>
<td>- Offer Undergraduate Research Opportunity (UROP) schemes over the summer</td>
</tr>
<tr>
<td></td>
<td>- Ensure that each major or stream includes authentic problems and assessments</td>
<td>- Offer interdisciplinary group projects in which students utilise disciplinary expertise within an interdisciplinary context</td>
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<tr>
<td></td>
<td>- Ensure that every student has the opportunity for a group or individual project (research, entrepreneurship, or community or workplace-based) drawing on disciplinary skills and knowledge</td>
<td></td>
</tr>
<tr>
<td><strong>Broader skills:</strong></td>
<td>- Embed structured opportunities for development of each skill at key points in the curriculum, beginning in first year and culminating in a formal assessment of skills and their integration in a final year project. Requisite skills should include integrity and ethics in the practice of scholarship and skills to work effectively and critically with new media, tools and resources</td>
<td>- Provide access through an open learning community to short, modular courses that allow students to acquire (and have recognised on their transcript) foundational concepts and methods in other disciplines, e.g. basic skills in programming, data analysis, ‘big data’ methods, research techniques, systems thinking, team leadership, project management, pre-briefings for cultural experiences</td>
</tr>
<tr>
<td>- critical thinking and problem solving</td>
<td>- Ensure that every student has the opportunity for a group or individual project (research, entrepreneurship, or community or workplace-based)</td>
<td>- Offer interdisciplinary, design activities</td>
</tr>
<tr>
<td>- communication (oral and written)</td>
<td>- Offer interdisciplinary learning experiences that contextualise disciplinary knowledge and skills</td>
<td>- Offer elective research units of study and co-curricular UROP</td>
</tr>
<tr>
<td>- information/digital literacy</td>
<td>- Ensure that each major or stream includes authentic problems and assessments</td>
<td>- Offer access to multiple disciplines</td>
</tr>
<tr>
<td>- inventiveness</td>
<td>- Utilise collaborative learning activities to foster interpersonal and communication skills</td>
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<tr>
<td></td>
<td>- Provide access to short, modular courses or resources that allow students to acquire foundational concepts and methods in other disciplines</td>
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</tr>
<tr>
<td><strong>Cultural competence</strong></td>
<td>- Embed cultural competence as a course learning outcome in every degree, and ensure supporting development within every major, stream or degree as appropriate</td>
<td>- Ensure access to study of culture and languages, and intercultural communication</td>
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<tr>
<td></td>
<td>- Provide meaningful learning activities that take advantage of the cultural diversity within the University community, including group projects requiring collaboration skills;</td>
<td>- Grow mobility programs and international educational collaborations, including those enabled by the new Colombo Plan, Study Abroad and exchange</td>
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<tr>
<td></td>
<td>- Ensure that professional programs develop cultural understanding and intercultural capabilities relevant to likely practice</td>
<td>- Offer community-based projects</td>
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<tr>
<td></td>
<td>- Ensure access to short, modular courses or resources that allow students to acquire foundational concepts and methods in other disciplines</td>
<td>- Provide access to short, modular courses building cultural competence</td>
</tr>
<tr>
<td><strong>Interdisciplinary effectiveness</strong></td>
<td>- Offer interdisciplinary or interprofessional learning experiences that provide experience of interdisciplinary challenges and opportunities in realistic settings</td>
<td>- Ensure access to multiple disciplines</td>
</tr>
<tr>
<td></td>
<td>- Ensure that each major or stream includes authentic problems and assessments</td>
<td>- Offer interdisciplinary competitions on complex problems</td>
</tr>
<tr>
<td></td>
<td>- Provide access to short, modular courses or resources that allow students to acquire foundational concepts and methods in other disciplines</td>
<td>- Offer recognised interdisciplinary programs, majors or minors relevant to salient societal issues</td>
</tr>
<tr>
<td><strong>An integrated professional, ethical and personal identity</strong></td>
<td>- Embed ethical reasoning into all majors, streams, degrees</td>
<td>- Encourage structured co-curricular reflection of educational goals, developmental opportunities and longer-term aspirations</td>
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<td></td>
<td>- Ensure systematic experience of authentic problems that raise broader questions of values and ethics and incorporate opportunities for structured reflection and integration</td>
<td>- Offer community-based projects</td>
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<td></td>
<td>- Encourage self-direction in learning through access to short, modular courses</td>
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<tr>
<td></td>
<td>- Ensure that every student has the opportunity to undertake a group or individual project (research, entrepreneurship, community or workplace-based)</td>
<td>- Offer opportunities for debate and engagement on contemporary issues</td>
</tr>
<tr>
<td><strong>Influence</strong></td>
<td>- Provide access to short, modular courses or resources relevant to influence e.g. effective teamwork, team leadership, project management, interpersonal effectiveness, systems thinking</td>
<td>- Offer community project opportunities</td>
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<tr>
<td></td>
<td>- Ensure systematic development of individual expectations within group learning settings, including for leader role</td>
<td>- Ensure access to units of study devoted to critical thinking, ethical reasoning, moral philosophy, contemporary debates, etc</td>
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<tr>
<td></td>
<td>- Ensure that every student has the opportunity for a group or individual project (research, entrepreneurship, or community or workplace-based)</td>
<td>- Offer co-curricular service and leadership opportunities</td>
</tr>
<tr>
<td></td>
<td>- Offer interdisciplinary or interprofessional learning experiences that provide experience of interdisciplinary challenges and opportunities in realistic settings</td>
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</tbody>
</table>
3.4 Sydney degrees: a coherent architecture

3.4.1 Background
The University of Sydney’s current undergraduate degrees offer exceptional choice across the breadth of our academic activity, including general and more tailored degree programs in the arts and sciences, entry-to-profession qualifications at undergraduate level, and more specialist undergraduate degrees. This broad profile is consistent with the University’s overarching objective, to promote “scholarship, research, free inquiry, the interaction of research and teaching, and academic excellence” and provide “courses of study ... across a range of fields ... to meet the needs of the community”.  

This discussion is therefore not about the broad kinds of undergraduate education offered by the University but rather about how best to configure the structure and profile of our undergraduate degrees to accommodate the proposed curriculum framework and to ensure that degrees and degree pathways are of outstanding academic quality, are coherent and attractive to prospective students, and yield outcomes of value to graduates and the community.

The recent survey confirmed students’ desires for broader skills and knowledge, more authentic learning experiences, opportunities for workplace and community-based projects, and a more global outlook – priorities that reflect growing concerns about graduate employment outcomes. Significantly, the experiences that students seek are well aligned with the enhanced learning experiences mooted under the proposed curriculum framework. But we need to address the question just raised: how do we fit these additional learning experiences into an already crowded curriculum without compromising the intellectual rigour our University community so deeply values?

A related issue arising from the survey is student and staff concerns about the coherence of courses and the complexity of degree pathways. These concerns mirror national survey results indicating that Sydney students see their degrees as less coherent and well-structured compared to students from other institutions.  

Here, therefore, we consider options for creating greater coherence while embedding the curriculum framework. These options are intended to facilitate strategic discussion; proposals based on them, or modified versions of them, will then be formally considered through the customary University channels. We begin with ‘liberal studies’ degrees offering broad choice in the humanities, social sciences and sciences. We then consider double undergraduate degrees and professional pathways, and vertical degree structures. To summarise the scale of the University’s educational activity in these various types of degree, current undergraduate enrolments by degree type are shown in Table 5.

Table 5. Undergraduate enrolments by degree type (2014)

<table>
<thead>
<tr>
<th>Undergraduate degree type</th>
<th>2014 Enrolments (EFTSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal studies (single UG degree)</td>
<td>12280.7</td>
</tr>
<tr>
<td>Professional (single UG degree)</td>
<td>8399.4</td>
</tr>
<tr>
<td>Specialist (single UG degree)</td>
<td>3173.9</td>
</tr>
<tr>
<td>Liberal studies/liberal studies (double UG degree)</td>
<td>1081.4</td>
</tr>
<tr>
<td>Liberal studies/professional (double UG degree)</td>
<td>2643.0</td>
</tr>
<tr>
<td>Liberal studies/specialist (double UG degree)</td>
<td>116.3</td>
</tr>
<tr>
<td>Professional/specialist (double UG degree)</td>
<td>258.1</td>
</tr>
<tr>
<td>Professional/professional (double UG degree)</td>
<td>86.4</td>
</tr>
<tr>
<td>Vertical double (UG/PG degree)</td>
<td>538.4</td>
</tr>
</tbody>
</table>

Source: Strategic Information and Business Intelligence

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35 University of Sydney Act 1989.

36 In the survey, 83% of students would value an opportunity for a course-related project in a workplace or community setting and 77% would welcome the opportunity to take units of study from other faculties/schools. ‘Being prepared for working life’ also rated as a key concern amongst students. 87% of staff agreed that the curriculum should provide strong intellectual foundations and skills for the contemporary world. According to the 2014 Graduate Destination Survey (of 2013 graduates), fewer than 50% of BA and BSc graduates from the University of Sydney seeking full-time work were in full-time employment 4 months after graduation.

37 For example, 68% of later year University of Sydney students agreed that their study was well structured and focused compared to 64% nationally (2014 University Experience Survey).
3.4.2 Undergraduate liberal studies degrees

The University of Sydney’s liberal studies degrees provide a rich and diverse intellectual landscape for the development of disciplinary expertise and the acquisition of broader skills and forms of understanding. Importantly, they span many fields in which the University has demonstrated world-class research strength and thereby promise a rigorous undergraduate education in a milieu of active scholarship and discovery. These degrees, which offer approximately 100 majors between them, are tentatively identified in Box 1.

Box 1. Undergraduate liberal studies degrees at the University of Sydney: a tentative classification

- Bachelor of Arts
- Bachelor of Arts (Languages)
- Bachelor of Arts (Media and Communications)
- Bachelor of Commerce
- Bachelor of Commerce (Liberal Studies)
- Bachelor of Economics
- Bachelor of Health Sciences
- Bachelor of International and Global Studies
- Bachelor of Liberal Arts and Science
- Bachelor of Medical Science
- Bachelor of Science
- Bachelor of Science (Advanced)
- Bachelor of Science (Advanced Mathematics)
- Bachelor of Political, Economic and Social Sciences

In considering how to render these diverse offerings more coherent to students, employers and others and how to embed the proposed curriculum framework throughout, we propose for consideration three non-exclusive options for the form and structure of undergraduate liberal studies degrees. These options are set out in turn below, together with some of the opportunities and potential risks they might bring – and which we must assess carefully – as well as the likely challenges for implementation.

Option 1

Status quo with streamlined design

The first option is to maintain the fundamental structure of existing liberal studies degrees, but to enhance their coherence by embedding the proposed curriculum framework and by carefully streamlining their constituent structures and rules, including for various forms of combination. This streamlining should maximise choice, render study pathways visible and coherent, and optimise the acquisition of the proposed graduate qualities within the confines of a three-year bachelor degree.

The streamlining step would involve the development of a common course structure across all the degrees, with:

- a common definition of course components such as:
  - core block of units – a required set of degree-level units of study
  - major – a sequence of units of study that develops depth of expertise in a field of study
  - minor – a sequence of units of study that develops coherent knowledge and skills in a field of study
  - program – a combination of units of study that develops expertise in a multi-disciplinary domain and includes a recognised major in a field of study
- common course rules, including for degree requirements, requisite structures, and honours
- common approaches for constructing degree combinations, such as double undergraduate and vertical degrees and the combinations of degrees and diplomas.

The advantage of common definitions and structures is predictable interchangeability of components across degrees (for example, of second majors, minors) and common rules supported by common processes. To stimulate discussion, the hypothetical definitions and rules set out in Box 2 below illustrate one possible way of incorporating the curriculum framework within a three-year degree.
Box 2. Hypothetical common course definitions and rules for a 3-year liberal studies degree - incorporating the curriculum framework

<table>
<thead>
<tr>
<th>Course requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every student should complete a total of 144 credit points including:</td>
</tr>
<tr>
<td>- the degree’s core units</td>
</tr>
<tr>
<td>- a major (from the degree’s list of available first majors)</td>
</tr>
<tr>
<td>- elective modules from the proposed open learning environment (12 credit points)</td>
</tr>
</tbody>
</table>

Every degree should offer the opportunity for students to complete:
- a second major from a shared pool of majors across liberal studies degrees
- a multidisciplinary program from a pool of the degree’s list of available programs
- one or more designated minors from a shared pool of minors across liberal studies degrees
- elective subjects from a shared pool available across all liberal studies degrees
- elective modules from a shared on-demand pool (0-2 credit points, recognised on transcript)

<table>
<thead>
<tr>
<th>Core block of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4 x 1000-level core units on foundational knowledge and skills (≤ 24 credit points)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 1000-level + 2 x 2000-level + 4 x 3000-level units (12+12+24 credit points)</td>
</tr>
<tr>
<td>Includes:</td>
</tr>
<tr>
<td>- 1 x project-based unit at 3000-level requiring the integration and application of disciplinary knowledge and skills</td>
</tr>
<tr>
<td>- 1 x interdisciplinary unit at 3000-level requiring the development and application of disciplinary skills and knowledge in an interdisciplinary context</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4 x 1000-level + 4 x 2000-level + 6 x 3000-level units (≤ 24+24+36 credit points)</td>
</tr>
<tr>
<td>Includes embedded major, 2 x 1000-level core degree units</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 1000-level + 2 x 2000-level + 2 x 3000-level units (12+12+12 credit points)</td>
</tr>
</tbody>
</table>

Notes
- This structure would allow for the completion of two majors within the degree.
- Core units may be contained within majors and programs.
- Majors currently requiring more than 48 credit points could be treated as ‘programs’.
- 1000- and 2000-level units may contribute to more than one major, minor and program.
- Additional flexibility is gained where course requirements are below the maximum credit points and where majors and/or the core units share units, especially at 1000-level.

Implementation challenges
A key challenge is one of academic design: we would need to ensure that the proposed steps of streamlining course structures and rules and implementing the curriculum framework yield coherent degrees that are both intellectually rigorous and offer the broader capabilities required of future graduates. To address this challenge, it would be helpful to take the step of developing some initial course designs. Other important issues raised by this option include: where in the curriculum we could most effectively build interdisciplinary learning experiences, and in what forms; and what forms the project-based unit of study should take. We would also need to develop funding models that recognise variations in cost as a function of form. Different forms include, for example, a group research project, authentic community and industry-based projects addressed by disciplinary or interdisciplinary teams at the University, similar projects conducted in settings outside the University including overseas, and internships and placements of various types.

Incorporating specialist degrees
There may also be value in reconceptualising several of the University’s existing specialist degrees (see Box 3) as programs within a liberal studies degree. This would enable students to move more easily into and out of the program, accommodating those who make a later choice to seek entry into the program, as well as those whose interests broaden or change while enrolled in the program. This would be particularly beneficial if the choice to enter the program could be made later in the first year or even in the second year. It would also mean future-proofing the program against changing perceptions externally, by giving it an internationally recognised degree title (for example, BA or BSc), while retaining the advantage of recognising the program as a bracketed specialisation in the degree title (for example, BA (program)). This too would enable students to move between the components of the program and the full breadth of the liberal studies offerings, enriching the experience for all students while maintaining the coherence of each individual student’s study plan through their specific choice of program, majors or minors.

More generally in relation to degree nomenclature, there is value in broad discussion of the appeal of degree titles with wider international recognition.
Box 3. Undergraduate specialist degrees at the University of Sydney: a tentative classification

Bachelor of Applied Science (Exercise and Sport Science)
Bachelor of Applied Science (Exercise Physiology)
Bachelor of Animal and Veterinary Bioscience
Bachelor of Architecture and Environments
Bachelor of Computer Science and Technology
Bachelor of Computer Science & Technology (Adv)
Bachelor of Design Computing
Bachelor of Environmental Systems
Bachelor of Food and Agribusiness
Bachelor of Information Technology
Bachelor of Music (Composition)
Bachelor of Music (Music Education)
Bachelor of Music (Musicology)
Bachelor of Music (Performance)
Bachelor of Music Studies
Bachelor of Psychology
Bachelor of Science in Agriculture
Bachelor of Visual Arts

Limitations of Option 1

Although Option 1 seeks to embed the core components of the proposed curriculum framework into a three-year degree, it is a minimal and tightly designed instantiation of what is proposed. For example, it would rely on a single unit of study within the major to yield an interdisciplinary perspective and on another single unit of study to achieve the benefits of undertaking a substantial project. Perhaps most importantly, it would allow very little opportunity for students to explore disciplinary domains before committing to majors, minors and programs. It is therefore worth considering other options.

Option 2

A four-year liberal studies degree

A four-year degree option would most effectively embed the curriculum framework and thereby best deliver the proposed graduate qualities. It would permit both depth of intellectual foundations and breadth of skills and experience, in the interests of longer-term learning and career adaptability as well as near-term effectiveness in work and further study. This option would renew the University’s founding commitment to a liberal undergraduate education and adapt it to the contemporary world, ensuring an experience of the highest quality as well as advanced skills and learning outcomes.

Precedents

Many other universities and higher education systems have already settled on four-year liberal studies degrees. They are common, for example, in North America and parts of East Asia and South America38, and four-year degrees offering breadth through languages or industry experience are common in the UK.

Understanding the patterns of international enrolments in countries where three or four-year bachelor’s degrees are dominant provides an indication of the role that degree length plays in the attractiveness of the degree. In Figure 1 we present data for non-European Union international enrolments in UK countries. The data suggests that Scotland, where the four-year degree model is dominant, attracts very slightly lower but nonetheless broadly similar levels of international enrolment as other UK countries, where the three-year model predominates.

38 For example, four-year degrees are the norm in Canada, United States, Scotland, Argentina, Brazil, Nicaragua, Uruguay, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Taiwan, Thailand, Vietnam and Botswana.
Another interesting case is Hong Kong, which moved from three-year to four-year degrees in September 2012, while also introducing some attractive visa and scholarship options. As the enrolment data in Figure 2 indicates, there is no evidence that the change had a negative impact on international enrolments.

We can also make some comparisons in our own setting. The University offers the BCom (Liberal Studies) and BA (Languages) four-year degrees with a high ATAR cut-off alongside the three-year BCom and BA. As shown below in Table 6, graduates of the four-year options are substantially more satisfied with their level of engagement in the degree and slightly more satisfied with the quality of teaching. While it is difficult to draw firm conclusions given the elite nature of the four-year programs, the proportion of BCom (Liberal Studies) graduates in full-time employment four months after graduating is notable.
Table 6. Comparison of four-year versus three-year degrees at the University of Sydney

<table>
<thead>
<tr>
<th>Degree</th>
<th>University Experience Survey</th>
<th>Australian Graduate Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learner engagement (% satisfied)</td>
<td>Teaching quality (% satisfied)</td>
</tr>
<tr>
<td>Bachelor of Commerce (Liberal Studies) 4-year</td>
<td>69</td>
<td>78</td>
</tr>
<tr>
<td>Bachelor of Commerce 3-year</td>
<td>55</td>
<td>73</td>
</tr>
<tr>
<td>Bachelor of Arts (Languages) 4-year</td>
<td>66</td>
<td>86</td>
</tr>
<tr>
<td>Bachelor of Arts 3-year</td>
<td>53</td>
<td>86</td>
</tr>
</tbody>
</table>

Sources: University Experience Survey 2014 (national data files provided by Social Research Centre) and Australian Graduate Survey 2014 (national data files provided by Graduate Careers Australia).

Advantages of Option 2
Hypothetical components and rules for a four-year liberal studies degree are shown in Box 4 below; the definitions of major, minor and program are the same as for Option 1. The key advantages are:

- the opportunity to complete two majors and either an honours or professional track in one degree
- advanced-level study in the field of the major, with the associated further development of broad skills for critical thinking, problem solving, communication, digital literacy, inventiveness and collaboration
- achievement of AQF level 8 learning outcomes
- sustained development of skills for project work and the broader learning outcomes that such experience brings, including from the project component of a 3000-level unit of study and a substantial project in the fourth year either in a research setting or tied to a community or workplace setting
- greater opportunity to explore fields of study prior to deciding on programs, majors and/or minors, particularly if majors are structured to draw on common units of study at 1000- and even 2000-level
- substantial opportunity to undertake minor or major studies in other disciplines and/or in a multidisciplinary program, deepening the capacity for breadth of knowledge and perspective
- broad opportunity to build skills and foundational knowledge in other fields of study through substantial access (24 credit points) to elective modules in skills and foundational knowledge
- greater preparedness for the workplace through extended project work and a pool of core professional units (for example, business, government or not-for-profit sector fundamentals; team work and team leadership).

39 Existing three-year liberal studies bachelor’s degrees achieve level 7 outcomes.
40 The project could be tailored to the interests and proposed next steps of each student, substantially enhancing their readiness for those next steps.
Box 4. Hypothetical course components and rules for a 4-year liberal studies degree

Course requirements
Every student should complete a total of 192 credit points including:
- the degree’s core units
- a major (from the degree’s Table A list)
- elective ‘skills’ modules from a shared pool, including 4000-level professional skills (24 credit points)
- 36 credit points at 4000-level, including 12 points of project work

Every degree should offer the opportunity for students to complete:
- A second major from a shared pool
- A program from a shared pool
- One or more designated minors from a shared pool
- Elective subjects from a shared pool
- Additional on-demand elective modules from a shared pool (0 credit points, recognised on transcript)

Core block of units
- Up to 4 x 1000-level + 1 x 2000-level + 1 x 3000-level core degree units (≤ 24+6+6 credit points)
- 1000-level core degree units may be contained within majors and programs
- Includes 1 x interdisciplinary unit at 3000-level

Major
2 x 1000-level + 2 x 2000-level + 4 x 3000-level units (12+12+24 credit points)
Includes 1 x 3000-level unit with a project component

Program
Up to 4 x 1000-level + 4 x 2000-level + 6 x 3000-level units (≤ 24+24+36 credit points)
Includes embedded major and a 3000-level program capstone

Minor
2 x 1000-level + 2 x 2000-level + 2 x 3000-level units (12+12+12 credit points)

Fourth year
Honours track: 8 units including 6 x 4000-level units incorporating a research project of ≥ 12 credit points
OR
Professional track: 8 units, including 2 x 4000-level (coursework) + 2 x 4000-level (workplace, community project/internship) + 2 x 4000-level professional units

Notes
- Core degree units may be contained within majors and programs
- Majors currently requiring more than 48 credit points could be treated as programs
- Units may be included in more than one major, minor and program
- The 3000-level multidisciplinary unit in the core degree block requires the development and application of disciplinary skills and knowledge in an interdisciplinary context

Implications of Option 2
The addition of a year’s study to a significant suite of the University’s undergraduate degrees may seem like a major change in time to graduation and load, but a number of factors would mitigate this:

- Honours would be embedded within the four-year degree, making the time required to undertake honours (and qualify for higher degrees by research) unchanged.
- For students proceeding to a coursework or research master’s degree of 72 credit points or more, the master’s degree could be structured to allow 48 credit points to be cross-credited to the bachelor’s degree. This would permit transition to master’s level study at the end of the third year of the bachelor’s degree, leading to what would become a vertical bachelor’s/master’s degree structure. This too would ensure no increase in course length for a bachelor’s/master’s combination for liberal studies bachelor’s degrees.
- By virtue of the advanced study in the four-year degree, students would be likely to receive credit for later master’s enrolments in cognate disciplines, ensuring faster later attainment of AQF level 9 qualifications.
- For students undertaking double undergraduate degrees – and subject to the precise definitions of course components and course rules – the length of the double degree need not be increased provided that cross-crediting for advanced (4000-level) learning outcomes is possible for at least one of the degrees.
- The breadth of study offered by the four-year degree may lead some students to opt for the four-year liberal studies degree rather than a five-year double-degree comprising two liberal studies degrees.
- Intakes would be reduced to maintain overall load.

To understand the size of reduction in intake required to maintain overall equivalent full-time student load (EFTSL), it is worth noting that, if the level of commencing enrolments were maintained at current levels, the overall increase in load would be of the order of 2200-2300 EFTSL. It would be important to develop a careful approach to load tapering should Option 2 be adopted.
Implementation challenges
The curriculum design challenge is more easily met for option 2. The key challenge resides in determining its attractiveness to prospective students and employers. We would need to be very sure that the rationale for the additional year – deeper intellectual and personal foundations for adapting flexibly, creatively and successfully to future challenges, and broader and immediately applicable skills for work and community settings – is clear and of recognised value to prospective students and their families and to employers. We would need to be sure too that the community values this contemporary form of liberal education. There is also a question of scope: which of the ‘liberal studies’ degrees in Box 1 should be included, and should some three-year degrees with evidently successful outcomes also be retained?

Further, considerations for international students differ from those for domestic students, so we would need to make a specific assessment of this option for our prospective international student cohorts, including the value of offering it in an accelerated format using the summer and winter periods. These considerations would need to include the possible impact for students who typically undertake foundation or English language courses prior to a bachelor’s degree, and exploration of possible models for minimising the length of study required abroad.

Encouragingly, global movements of students suggest that students are making decisions on the basis of institutional reputation and broad indicators of program quality. Nonetheless, despite the arguments for better student outcomes and favourable indicators of student interest, it is paramount that we conduct intensive market research amongst all these stakeholder groups to gauge the appeal of the four-year degree before committing to this option.

Option 3
A four-year degree for high-achieving students
The third option is a variant of the second: a four-year degree for high-achieving students with an ATAR of 98.00 or more, with a to-be-determined lower cut-off for each of the University’s Pathway and Access programs.

The purpose of the degree would be to offer very broad choice to talented students seeking to develop expertise in several distinct disciplines, explore a broad intellectual landscape in the humanities, sciences and social sciences, and build foundations for a global career. The longer degree would also permit an emphasis on the development of vision, adaptability, a broad perspective, and a high level of capability in operating across disciplinary and cultural boundaries. Hypothetically, the degree might include:

- at least one major and minor (available in Table A for BA, BCom or BSc)
- specified core units
- a language requirement (of, say, 18 credit points)
- elective modules from a shared pool of on-demand learning modules (24 credit points)
- a regular (24 credit points) or winter or summer (6-12 credit points) semester abroad
- a sequence across three years of cohort-specific interdisciplinary seminars designed to take advantage of the intellectual depth and breadth of the cohort (18 credit points)
- access to mentoring and professional skills development, with a focus on future leadership
- an interdisciplinary unit of study in the third year with a group project component (6 credit points)
- the requirement to complete an honours project and some 4000-level coursework (at least 24 credit points in total) in the field of a major as well as at least 36 credit points in total at 4000-level
- a total of 192 credit points.

A key question for this option is whether it is best constructed as a four-year version of existing liberal studies degrees – leading to, say, BA (Liberal Studies), BCom (Liberal Studies), BEd (Liberal Studies) and BSc (Liberal Studies) – or as a single new degree, such as a Bachelor of Philosophy (Honours), that incorporates and extends existing elite degrees.
Implementation challenges
The risks for this option are probably low, since we know that the BCom (Liberal Studies) and the BA (Languages) are successful and attractive degrees. Nonetheless, if we were to adopt option 3 without also adopting option 2, the benefits of a four-year degree would be restricted to a narrow segment of the entire undergraduate student cohort.

Academic governance for Options 1–3
For all these options, we should consider how best to provide academic governance for a more coordinated and open suite of liberal studies degrees and degree components. It will be important to ensure ongoing coordination, and there may be value therefore in a broader, shared (or even university-level) oversight of degrees, with the strong involvement of the participating faculties.

3.4.3 Double undergraduate degrees and professional pathways

Background
In addition to its foundational commitment to liberal education, the University is recognised as a leader in professional education and now provides an exceptional choice of educational pathways to the professions. Most of the University’s 16 faculties offer professional pathways of some form, while others offer specialised forms of education with a strong career or vocational focus (for example, in agriculture, music, the arts). To maintain leadership in these forms of education, it is important to keep asking ourselves whether what we offer continues to be most fit for purpose and to meet the needs of the profession and the community. Professional degrees are, of course, subject to external accreditation standards, and the educational challenge is often to anticipate and build in capabilities for future professionals which exceed – and lead the way in reconceiving – the current standards.

We therefore now turn to undergraduate (Box 5) and graduate degrees that provide entry-to-profession qualifications. We consider these together both because of their shared purpose and because it is important to be clear about the reasons for offering pathways at undergraduate or graduate level or both. In some cases, the University has determined to restrict entry-to-profession degrees to the graduate level (for example, architecture, dental medicine, medicine, veterinary medicine); in others, to retain a focus on undergraduate preparation for the profession (for example, engineering, oral health, social work); in still others, to develop professional pathways at both undergraduate and graduate levels (for example, law, teaching, many allied health professions, nursing, project management). Importantly, many of our current students undertake an entry-to-profession qualification as well as another degree, and combinations with liberal studies degrees are common (see Table 5). The undergraduate degree in law, for example, is now only offered in a combined form.

41 We have not enumerated the University’s many graduate professional degrees, but they are included among the degree listings at sydney.edu.au/courses/a-z/postgrad-coursework/A.
Box 5. Undergraduate entry-to-profession degrees 2015: a tentative classification

Bachelor of Applied Science (Diagnostic Radiography)*
Bachelor of Applied Science (Occupational Therapy)*
Bachelor of Applied Science (Physiotherapy)*
Bachelor of Applied Science (Speech Pathology)*
Bachelor of Education (Early Childhood)*
Bachelor of Education (Primary)*
Bachelor of Education (Sec: Aboriginal Studies)
Bachelor of Education (Sec: Human Movement & Health Ed.)
Bachelor of Engineering Honours (Aeronautical)
Bachelor of Engineering Honours (Aeronautical) (Space)
Bachelor of Engineering Honours (Biomedical)
Bachelor of Engineering Honours (Chemical and Biomolecular)
Bachelor of Engineering Honours (Civil) (Constr Mgmt)
Bachelor of Engineering Honours (Civil) (Environmental)
Bachelor of Engineering Honours (Civil) (Geotechnical)
Bachelor of Engineering Honours (Civil) (Structures)
Bachelor of Engineering Honours (Electrical)
Bachelor of Engineering Honours (Electrical) (Computer)
Bachelor of Engineering Honours (Electrical) (Power)
Bachelor of Engineering Honours (Electrical) (Telecomms)
Bachelor of Engineering Honours (Flexible First Year)
Bachelor of Engineering Honours ( Mechanical)
Bachelor of Engineering Honours ( Mechanical) (Space)
Bachelor of Engineering Honours (Mechatronic)
Bachelor of Engineering Honours (Mechatronic) (Space)
Bachelor of Engineering Honours (Software)
Bachelor of Laws*
Bachelor of Nursing (Advanced Studies)*
Bachelor of Nursing Post Registration (Singapore)
Bachelor of Oral Health
Bachelor of Pharmacy*
Bachelor of Social Work
Bachelor of Design in Architecture
Bachelor of Project Management (Built Environment)
Bachelor of Project Management (Civil Eng Science)
Bachelor of Project Management (Software Eng Science)

*The University also offers a graduate entry-to-profession program

There is a complex set of considerations also relevant to the choice to offer professional education at undergraduate or graduate level. These include:
- student access to Commonwealth funding
- capacity to attract talented students
- student demand from school leavers and graduates
- possible fee mixes and fee income affecting degree quality and sustainability
- timing of a student’s decision to undertake a professional degree
- the value to the profession of multiple points of entry to the profession
- the advanced knowledge and skills associated with graduate training
- the years of study required for entry to the profession
- the potential long-term value to the profession and to individual graduates of master’s-level professional training following undergraduate education in enabling disciplines
- typical salaries in the profession and the extent to which they can offset the higher cost of graduate training
- trends in professional degree career outcomes, including the broader career outcomes now characteristic of many professional degrees such as law and engineering
- access to high-demand professional degrees for students who have experienced educational disadvantage
- international recognition of degrees, and global mobility of graduates
- retention within the profession, career pathways and career flexibility as a function of educational pathways into the profession.
Evidence and arguments about these considerations vary across professions. Broadly, though, the undergraduate model provides the fastest, least costly path to the profession for school leavers who are sure of their preferred professional career. The graduate model, on the other hand, has the advantage of attaining advanced professional learning outcomes and of affording access pathways for those who have experienced educational disadvantage or who have chosen the pathway later than at the point of first entry to University. It also, arguably, provides better preparation for career advancement through the broader foundations and skills it offers. While the preferred level(s) of professional training need to be considered carefully, profession by profession, we argue in Option 4 below that vertical degree structures involving professional qualifications are preferable to double undergraduate degrees and should be enabled where possible.

Option 4

Increased focus on vertical degree structures

The University already offers a substantial number of double degrees, and many include an entry-to-profession qualification in either an undergraduate double degree or a vertical double degree (see Box 6). In many cases, the combination involves an undergraduate liberal studies degree (see Box 1), though there are several important exceptions involving law, engineering, IT, project management, and design in architecture.

The double undergraduate degrees listed in Box 6 take a minimum of five years to complete. If, as expected, students’ broad capabilities are increasing each year, do these double-degree courses ensure an increasing level of challenge year-by-year? In particular, does the design of the professional degree build on the advanced knowledge and skills attained through the liberal studies degree? A vertical structure for the double degree, with the professional degree offered at master’s level, would achieve these outcomes, optimising the educational value of double degrees to students and the community.

Box 6. Double degree combinations involving entry-to-profession degrees

<table>
<thead>
<tr>
<th>Double undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Arts &amp; Bachelor of Social Work</td>
</tr>
<tr>
<td>Bachelor of Arts (Media &amp; Communications) &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Commerce &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Design in Architecture &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Economics &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Education (Sec: Mathematics) &amp; Bachelor of Science</td>
</tr>
<tr>
<td>Bachelor of Education (Sec: Science) &amp; Bachelor of Science</td>
</tr>
<tr>
<td>Bachelor of Education (Sec: Hum &amp; Soc Sci) &amp; Bachelor of Arts</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons &amp; Bachelor of Arts</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons &amp; Bachelor of Commerce</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons &amp; Bachelor of Medical Science</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons &amp; Bachelor of Project Mgmt</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons &amp; Bachelor of Science</td>
</tr>
<tr>
<td>Bachelor of Engineering Hons (Civil) &amp; B Design in Architecture</td>
</tr>
<tr>
<td>Bachelor of Information Technology &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Int &amp; Global Studies &amp; Bachelor of Laws</td>
</tr>
<tr>
<td>Bachelor of Science &amp; Bachelor of Laws</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vertical double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Appl Sci (Ex &amp; Sport Sci) &amp; Master Nutrition &amp; Dietetics</td>
</tr>
<tr>
<td>Bachelor of Arts &amp; Master of Nursing</td>
</tr>
<tr>
<td>Bachelor of Commerce &amp; Doctor of Medicine</td>
</tr>
<tr>
<td>Bachelor of Economics &amp; Doctor of Medicine</td>
</tr>
<tr>
<td>Bachelor of Health Sciences &amp; Master of Nursing</td>
</tr>
<tr>
<td>Bachelor of Medical Science &amp; Doctor of Medicine</td>
</tr>
<tr>
<td>Bachelor of Music Studies &amp; Doctor of Medicine</td>
</tr>
<tr>
<td>Bachelor of Science (Advanced) &amp; Doctor of Medicine</td>
</tr>
<tr>
<td>Bachelor of Science &amp; Master of Nursing</td>
</tr>
<tr>
<td>Bachelor of Science &amp; Master of Nutrition &amp; Dietetics</td>
</tr>
<tr>
<td>Bachelor of Veterinary Biology &amp; Doctor of Veterinary Medicine</td>
</tr>
</tbody>
</table>

Not all of the entry-to-profession bachelor’s qualifications in the upper panel of Box 6 have graduate counterparts, of course. The proposal to replace double undergraduate degrees with vertical bachelor’s/master’s degree combinations would therefore apply to combinations involving law, education, social work, project management, and those health professions for which we offer graduate-level, entry-to-profession qualifications.

Of course, any shift of a double undergraduate degree to a double-vertical form would need to be made in ways that ensure the accreditation status of the professional component of the double degree.
Implementation challenges

There are three important questions to be resolved before it would be wise to commit to an increased use of vertical degrees. First, would the University have Commonwealth support for a significant growth in vertical degree enrolments? While many students taking vertical double degrees at the University of Sydney and other institutions enjoy access to Commonwealth Supported Places (CSP) while enrolled at the undergraduate level, we should seek confirmation that the Commonwealth remains committed to this arrangement. This is, of course, a critical question for students.

Second, do prospective students and employers accept the argument that vertical degrees achieve more advanced educational outcomes? This is an issue we will test through market research.

Third, can we skilfully balance, on the one hand, access to professional graduate degrees for well-qualified students commencing their bachelor’s degree who have clear professional pathways in mind and, on the other hand, access to those same professional graduate degrees for students who make a later choice and demonstrate their preparedness through excellent performance at University? This is particularly important given how difficult it is to adjust for educational disadvantage for entry into high-demand undergraduate entry-to-profession degrees at the point of university admission. It will therefore be important to articulate very clearly the entry pathways to graduate entry-to-profession degrees, whether through demonstration of excellence prior to entry to a vertical bachelor’s/master’s degree, or demonstration of excellence in a bachelor’s or other tertiary degree.

3.4.4 Proposals for consideration

Proposition 3
That the University develop a common set of definitions for course components and course rules for liberal studies degrees.

Proposition 4
That the University develop a detailed case for moving to four-year liberal studies degrees, including the option of an elite program for high-achieving students.

Proposition 5
That the University undertake a detailed review of potential options for vertical double degrees (bachelor’s/entry-to-profession master’s) to ensure there are effective and visible pathways to graduate entry-to-profession degrees, including optimal approaches to balancing enrolments in the vertical program and direct enrolments in the graduate degree.
4 Conclusion

4.1 Our goals for undergraduate education at the University of Sydney

This paper has canvassed propositions for an undergraduate education at the University of Sydney that gives contemporary form to the University’s enduring ambition to equip graduates with the knowledge, skills, values and purpose to serve society at every level and to lead the way in improving people’s lives.

We have put forward for consideration a set of proposed graduate qualities and a shared curriculum framework for undergraduate degrees intended to develop them. We have also proposed three options for undergraduate degree architecture and suggest that consideration be given to adopting all three. These options are:

- adopt common definitions, common components and common course rules for all of our liberal studies degrees
- explore a four-year model for liberal studies degrees that can properly accommodate the curriculum components we believe necessary to equipping every student with the proposed Graduate Qualities
- replace double undergraduate degrees where appropriate with vertical bachelor’s/master’s double degrees.

We have also signalled a number of issues that require further detailed exploration and research before we consider formally the adoption of these propositions.

The ideas proposed here will benefit from this further work as well as from discussion and debate within the University community. While implementation of final propositions will also require collective resource and will, there are strong grounds for believing that we are poised to re-invigorate undergraduate education and strengthen its educational impact in the ways proposed. Recently, for example, we have seen strong improvement in the key indicator of Learner Engagement in the University Experience Survey undertaken in September 2014, suggesting that our efforts during the current Strategic Plan to engage students through enquiry-based educational approaches are beginning to bear fruit.

Even more importantly, perhaps, the recent survey shows that we are a community that values excellence in teaching as highly as excellence in research, and that we aspire to the highest standards in both. We recognise that our current performance in teaching falls short of our aspirations, and that we are yet to give full institutional expression to the value we place on an educational experience and educational outcomes of the highest quality. And, crucially, the imperative to provide our students with the intellectual foundations that will equip them to thrive and have a positive impact on society in their future lives is one around which we are most strongly aligned.

If we can translate our individual aspirations for educational excellence into a collective effort framed by an educational vision of the broad form proposed here, we will indeed create a distinctive and future-oriented undergraduate education at the University of Sydney of the highest quality.

In doing so, we will also create a much clearer sense of exactly what it means for a student to be educated at Sydney. Finding something distinctive in our educational offering is not simply a matter of market differentiation or brand viability; it is about how we perceive ourselves – our own internal identity – and how we foster a stronger sense of belonging to a university community charged with the responsibility of educating future generations.

4.2 Your contribution

The purpose of this discussion paper is to elicit your responses to the ideas and proposals laid out within its pages. We encourage you to take the time to share your thoughts.

If you would like to respond to the propositions set out in this discussion paper, please do so by July 6 via the online form available through sydney.edu.au/strategy. Should you require further time to submit feedback, please inform us via university.strategy@sydney.edu.au. In addition to a written submission there are many other ways to contribute your thoughts and ideas on these proposals. Over the next month the University will be conducting focus groups with staff and students, and we welcome volunteer participants. Beyond the University, we will invite supporters, industry partners and other stakeholders to consider our ideas for education at Sydney.
4.3 Complete list of proposals for discussion

Graduate qualities

**Proposition 1**
That the University adopt the graduate qualities set out in Table 1 and reflect them in the learning outcomes of each of its bachelor’s and entry-to-profession master’s degrees.

Curriculum framework

**Proposition 2**
That the University endorse, in principle, the proposed curriculum framework for bachelor’s degrees.

Degree architecture

**Proposition 3**
That the University develop a common set of definitions for course components and course rules for liberal studies degrees.

**Proposition 4**
That the University develop a detailed case for moving to four-year liberal studies degrees, including the option of an elite program for high-achieving students.

**Proposition 5**
That the University undertake a detailed review of potential options for vertical double degrees (bachelor’s/entry-to-profession master’s) to ensure there are effective and visible pathways to graduate entry-to-profession degrees, including optimal approaches to balancing enrolments in the vertical program and direct enrolments in the graduate degree.

4.4 What happens next?

This is the first in a series of discussion papers scheduled for release between June and September this year. You will be invited to respond to all of these, as well as to contribute to the planning process in other ways.

At the same time, detailed work will be initiated to better understand the benefits and opportunities and, very importantly, the resource requirements and the risks associated with each of the propositions set out here.

The kind of work required is foreshadowed by the implementation challenges that have been identified through the paper, and includes: the views of students, parents employers and community on the proposed graduate qualities, curriculum framework and options for degree architecture; the cost and form of each component of the proposed curriculum framework; detailed consideration of common definitions and course rules for ‘liberal studies’ undergraduate degrees; detailed exploration of double-vertical degree options; and governance arrangements for each of the options for degree architecture.

Your contribution to the form of this additional work is also welcomed.

Together, this paper, the papers to follow and the discussion they generate will form the foundation of our strategy for the next five years.
Notes