

Stage 1 Analysis and Planning Report 21st Century Curriculum Project

Executive summary

Project Context: The 21st Century Curriculum (21CC) Project is one element of the University's response to three significant challenges:

1. a more competitive higher education market in which the Western Sydney Brand is not yet a challenger to more prestigious NSW universities that are perceived to offer prospective students a higher value educational proposition;
2. a disrupted future of work that offers graduates new opportunities, and demands that universities equip our students with new knowledge and abilities for their future success; and
3. the University's commitment to anchor the growing cities of Western Sydney to ensure the social benefits of projected economic growth address the significant social disadvantage in the region.

The University Executive endorsed the 21CC project brief in March 2017 (See <https://www.westernsydney.edu.au/21c>). The project provides an opportunity for the University community to co-create our future curriculum and encompasses **four strands** of synergistic work:

1. Protect and enhance our established core educational degree offerings.
2. Complement those core offerings with new future-facing degrees and new curriculum elements.
3. Reduce our reliance on those core offerings with new alternative curriculum credentials.
4. Build institutional capacity to future proof curriculum renewal.

The first stage of the Project (March – June 2017) focussed on **Analysis and Planning** to lay the foundations for future initiatives in the three-year project and commenced work on the first strand - to **protect and enhance our established core educational offerings**.

The Course and Load Planning Group developed an 'Index for Course Performance' to support review and management of our future Course Profile. The project team consulted with the university community to identify available institutional capacities to leverage to deliver a distinctive curriculum.

To build the rationale and evidence base for this first stage of the project activities, a Stage 1 Working Party of key university experts was established to analyse available evidence on current curriculum structures. This included:

- Current course records, approvals and enrolment data (Course Data Management team & Chair Senate).
- Current curriculum mapping and Course structures (Office of Quality and Planning);
- Financial viability (Finance Office).
- Prospective student market research (Student Experience Office, Marketing).
- Competitor course structure benchmarking and higher education curriculum research (Learning Futures Portfolio).

The key findings of the working party were:

- Our current degrees reflect a proliferation of over 401 courses listed in the handbook with different rules around majors, key programs and multiple versions of similar degrees.

- The idiosyncratic nature of our degree structures makes the work of innovating at scale difficult and limits opportunities for student mobility and exchange between degrees.
- Currently our course profile includes differently named degrees that are, educationally potentially indistinguishable to students.
- Current descriptions of curricula in non-professionally accredited degrees do not consistently communicate the range of potential employment destinations to students.
- The intention of offering students the opportunity to study outside their core disciplines as part of their degree, through choosing 80 credit points of free electives, is being realised in less than 20% of our degrees.
- Prospective students making decisions about universities and courses are confused by the multiplicity of options and are also concerned about the inability to change if they find a course is not what they wanted.
- Current course structures do not align with the more 'thematic' course decision making process of many prospective students.
- Current undergraduate degree structures are often complex and confusing both for potential students and for continuing students and staff in other Schools.
- New courses introduced to attract students have often been over-optimistic in their load forecasts, and have been ad hoc additions rather than planned as part of a coherent institutional course profile strategy.
- Our competitor Universities present explicit institutional signature pedagogies that convey educational 'value' and explicitly realise this value in visible curriculum structures.

The key findings are summarised in the following sections and additional information is provided in the appendices:

- Current curriculum structures
- Successful Curriculum structures at other universities
- Partnerships: Our distinctive Institutional Strength
- Prospective students' curriculum aspirations

The 21CC project seeks to make the University more efficient with a simpler curriculum architecture, but also more competitive. The first strand of the project has two elements: (i) the development of simpler shared architectures for our degrees to capitalise on synergies between degrees enabling agile innovation at scale, and improving 'visibility' to students; (ii) the reinvigoration of our existing degrees under those shared architectures, through the inclusion of new signature learning experiences and opportunities to enhance our students' career success.

To protect and enhance our existing offerings we will embed these distinctive 'signature' learning opportunities across the new simplified curriculum architecture of our degrees. Those curriculum and co-curriculum signature experiences will be designed to deliver a distinctive competitive edge to our graduates in the future world of work and society. They will leverage our unique Partnerships and Pathways (see Project Brief) to build both aspiration and participation. We will also seek to better align our simplified curriculum architectures with the ways we understand students make decisions about their study-to-career pathways.

The next step in the 21CC project is a series of School-based Curriculum Pilots, building on School specific evidence of the type compiled in this report, to review and where necessary simplify existing curriculum structures and develop strategies to embed signature learning experiences that build the relevance and value proposition of our current degrees. Information on the School Pilots is available on the 21CC website. The School pilots and other university wide 21CC initiatives this year also lay the foundation for the work of creating new degrees and alternative offerings which is the focus of the next stage of the 21CC project.

For more information about the 21CC project please visit the Project website or contact the Project team.

1. Background

This document is a report from the Stage 1 Working Group of the University's 21st Century Curriculum (21CC) Project. The document brings together the range of currently available information about our courses and curriculum in a way which supports the ambitions of the first stage of the 21CC project, in particular, the desire to develop a simpler and more coherent set of degree curriculum architectures.

The 21st Century Curriculum Project seeks to make the University more efficient with a simpler curriculum architecture, but also more competitive. As well as providing greater efficiency, a simpler set of shared curriculum structures will ensure our offerings are more transparent and accessible to students. Both are necessary if we are to innovate at scale and implement agile and proactive curriculum renewal. With more attractive, accessible course offerings we can increase market share and build student load and revenue.

Current market research on how students choose universities and courses is indicating that many are overwhelmed by the range of choice and are anxious about what will happen if they choose badly. This Stage 1 report on curriculum renewal focuses on what we know about current Western Sydney University curriculum structures. From this there are some key messages on how curriculum structures may be affecting both the experience of current students and the perceptions of prospective students. Through the School Pilots, Schools will be supported to apply relevant school data sets (qualitative and quantitative) identified in this report to support curriculum renewal.

2. Current curriculum structures

Free electives

Our current curriculum structure nominally has a 160-point key program for a Bachelor degree, with an 80-credit point elective structure (totally 240 credit points). Students can also choose from (80 point) majors and (40 point) sub-majors, to add specialisation and/or cross-discipline study. However, over the years since 2001, this has evolved into a much more complex and varied picture. Elective options are limited and the number of variations and pathways has proliferated, often driven by marketing considerations.

There is less cross-discipline choice than intended with the elective structure. We also lack capacity to let students know what elective options are available. Specifically:

- 29% of the Bachelor courses have no electives and many more have fewer than the recommended 80 credit points.
- While professionally accredited courses tend to have fewer electives, there are some non-accredited courses with no electives.
- Majors and sub-majors, selection from pools of approved units or 'recommended electives' also constrain elective options.
- There is no central database of elective options for students to refer to. Nor is there a web-based tool to support students' selection of courses and units.

Coherence and distinctiveness

There are over 400 courses listed in the current handbook, not counting those that are planned or suspended. As well as the standard Bachelor and Masters degrees, the courses database includes assorted pathway, sub-degree, diploma and graduate certificate levels offered as nested options within a discipline, with some offered only as 'exit' options. Table 1 lists the types of qualification offered. Appendix 1 has more detail.

Some disciplines have many pathways/variants, not counting double degrees and others have only one qualification. There are also wide variations between Schools in how a 'course' is defined. Whereas Science

has specialisations as separate degree courses, Business and Arts have these as variations (majors and sub-majors) within one course.

Undergraduate qualifications	Postgraduate qualifications
Diploma	Qualifying
Diploma Extended	Graduate Certificate
Diploma full time	Graduate Diploma
Associate Degree	Masters
First Year Program (FYP)	Advanced/Executive
FYP Fast	Exit only
FYP Extended	Double degrees
	Masters/research degrees (HDR preparation)

Table 1. Varying types of qualification available within different discipline streams

Particular named degree courses have been created to attract students. However, a review of the new courses introduced over the last three years shows that two-thirds have not yet met their target for student load (see Appendix 1). Each point in Figure 1 represents the enrolments for a course in 2017, showing a majority of low-enrolment courses.

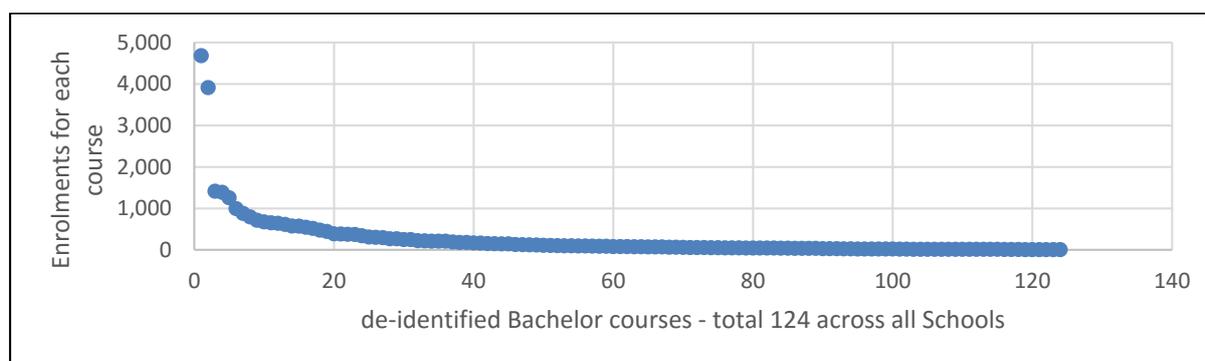


Figure 1. Plot of 2017 enrolments for 124 Bachelor courses

The Course Load and Planning Group (CLPG) is conducting a review of our current course profile and developing a data-driven Index for Course Performance. The Stage 1 Working Party reviewed course financial data provided by the Finance Office and while noting the importance of this information recognised that this would be integrated in the Index for Course Performance. The group concluded there was no consistent relationship apparent between curriculum structure and profitability. The work of the CLPG in developing the Index for Course Performance to support the ongoing management of a more coherent degree profile for the University will directly support and complement the first stage of the 21CC project and the School Pilots.

The 21CC Stage 1 Working Party focused on how the curriculum structures may be influencing student recruitment, and on the data available to inform curriculum renewal. The [Curriculum Mapping Tool](#) (CMT) was developed by the University and made available as a web based tool in 2017 to provide consistent data on the content of units of study and their relationship to degree outcomes. This tool is now being rolled out across the University with support for Schools in data entry to the new tool provided by the 21CC project and support for School staff in using the tool provided by Curriculum Advisors and Course Quality Officers.

A new [Course Profiling Tool](#) (CPT) was developed by the Office of Quality and Performance to support Schools in reviewing their current curriculum structures. This tool provides a visual mapping of the contributions of shared unit sets to different degrees indicating the overlap and redundancy in the unit sets. Support for Schools in using this tool is provided by the Course Quality Officers. The Stage 1 Working

Party analysis shows that several courses have nearly all of the available constituent study units in common with other courses. In these cases, the distinctiveness of the degree is hard to validate. Appendix 1 contains some examples.

In some courses, students can select multiple majors, potentially watering down the value of the major as evidence of specialisation. While there are rules about points for majors and sub-majors, there is no coherent plan and many exceptions are reported. Large pools of units as restricted options (as distinct from free electives) within courses make it confusing for students to choose appropriately. While there may be good reasons why, for example, 45 of the 194 BA pool units have not been offered in the last three years the confusion in choice is exacerbated when many of the units listed are not on offer.

Curriculum changes with unclear transition information makes it difficult for continuing students to know what they need to enrol in. The proportion of 'continuing' courses shows some of the legacy problems created by previous curriculum change. More systematic mapping of old units into new courses using the Curriculum Mapping Tool, will enable provision of advice for students on equivalent old and new units. This would enable them to transfer to new courses and reduce the need for many of the low-enrolment continuing courses.

Flexibility and specialisation

In many of our Bachelor programs, students could delay a choice about specialisation until the 2nd year of study. This suits those students who begin their degree uncertain of their interests and strengths. These options could be more clearly articulated to students.

Many undergraduate courses have major options that allow students to change their original choice at the end of first year and often up until middle of 2nd year. It is easier for students to change specialisation when the specialisations are within one course. If they are in a separate course, a student who wants to shift the focus of their study has to transfer between courses, creating additional administrative steps for staff as well as the student.

While some courses have many study units in common with other courses, there are also specialist professional courses with practice-based units that are unique to one course. A review using the CMT enables Schools to identify where the course-specific units are justified by specific professional learning requirements and where units that have similar learning outcomes might be combined.

For non-accredited degrees, including those with multiple options for specialisation within them, there is scope for more consistently linking course options to related employment opportunities. Some of the handbook entries on career opportunities give specific examples of the kind of work graduates could do and the skills required. Others give only general lists of broad industry or professional contexts. Appendix 1 gives some illustrative examples.

Key messages about the current curriculum structures

1. The underlying concept of our bachelor courses is simple, but complexity has developed, some of which has been marketing-driven.
2. The current course profile reflects a sustained effort by Schools to build student load, especially in the absence of a coherent plan for an overall academic profile at the University level.
3. Specialist degrees can attract students who are clear about their career choices. However, some specialist degrees may simply be repackaged versions what is already available in broader degrees. Even in broader degrees, students could benefit from explicit identification of the careers and skills associated with each degree option.
4. We have not made the most of the original intention to allow cross-disciplinary choice through free electives. The perception of choice is not being realised in practice.

5. Professional accreditation requirements shape many of our courses, and restrict the elective choices, in ways that may not always be justified by accreditation requirements.
6. The presentation of options and pathways is confusingly complex, for potential and current students.
7. To make it easier to innovate at scale across, we need to reduce the number of courses and make the structure of courses simpler and more coherent across the University

3. Successful curriculum structures at other universities

A benchmarking review of the curriculum and course information available from our competitors noted some common features associated with successful curricula. The review included local NSW universities and also internationally some of the top-ranking universities under 50 years old. Many of our competitors have an explicit institutional signature pedagogy, alongside a statement about how these translate into the curriculum. There are common signature curriculum elements: e.g., core program/year, compulsory university-wide units focused on achieving graduate attributes (holistic), interdisciplinary breadth or signature elements such as work-integrated learning, for example:

- Macquarie University – PACE as a distinguishing feature
- University of Sydney – Open Learning Environment (planned for 2018)
- City University Hong Kong – Gateway education requirement (multi-disciplinary experiences)

In many of these successful universities, there is explicit recognition that ‘real/authentic’ learning happens in contexts outside the university curriculum and context.

- UTS – Shopfront (link between university, students and community organisations)

The suite of degrees are often clustered into types to enable student choice/flexibility between course structures:

- University of Sydney – Liberal Arts & Sciences; Specialist; Professional

Most of the universities that are comparable to Western Sydney University (WSU) and that appear to be successful both locally and internationally, put an emphasis on the communication of their distinctive curriculum principles, pedagogies and structures to students and potential students. Maastricht University is known internationally for problem-based learning (and potential students can see this), and the UTS Model is aligned to the ways all its Faculties present their educational offerings to students. Further, a comparison of the course aims of three similar degrees (Arts, Computer Science, Business) across local NSW competitors reveals that there is a variety in emphasis: some focus on a description of the discipline’s knowledge base and its relation to contemporary problems, others focus on the structure and sequencing of units, and others include a focus on what students will be able to achieve, do, or create as a result of learning in their courses. Where there is a unique/showcase learning opportunity for students, these are also emphasised. Appendix 2 has more details.

Key messages about competitors

We should develop an institutional educational rationale across all our courses that:

- provides a coherent narrative about the University’s curriculum distinctiveness and opportunities for students;
- feeds into all our curriculum structures;
- identifies clusters of degree types with common characteristics; and
- focuses our effort on communicating our educational distinctiveness to prospective students, and what that distinctiveness can lead to in terms of students’ futures.

We should leverage our distinctive institutional strengths to develop signature curriculum elements (university-wide) that explicitly offer prospective students pathways to success in the future world of work, and which could be embedded into a simpler set of degree structures.

4. Partnerships: Our distinctive institutional strength

The 21CC project team worked with the university community to identify potential institutional capacities to deliver a distinctive curriculum. WSU has the potential to engage students in purposeful and meaningful experiential learning that promotes social cohesion, health, employment and economic prosperity. Our region is unique, as are the opportunities it provides for experiential learning. We are embedded in one of the most diverse multicultural populations in the world and in the third largest economy in Australia. Our neighbours include over 100 nationalities, more than 150 of Australia's top 500 companies and a pool of industries growing at much faster rates than the national average.

Community and industry partnerships are a significant dimension of the identity of WSU. Partnerships provide major benefits to campus, community and the GWS economy. Our current partnerships can be classified as:

1. GWS local community (& business) engagement (e.g. Aboriginal Elders, WSBC, Alumni)
2. Network partners (e.g. Sydney School of Entrepreneurship, SemiPermanent, RCE UN University)
3. Industry partners (e.g. WSU internship scheme, Jobs for the West)
4. Commercial provider partners (Adobe, Microsoft)
5. Edu-venture partners (e.g. OES, SIBT)
6. Research & innovation partners (e.g. Research themes, institutes/industry partnerships, Launchpad)

These partners have the potential to quickly become a basis for unique and significant learning experiences for not only our students but for everyone involved in such partnerships.

However, the messages the University communicates about partnerships are fragmented and are not yet having the broad impact needed for partnerships to be seen as a signature element of the WSU learning experiences. Current curriculum structures are further obscuring the role partnership elements play in providing a unique learning experience in our major degree programs.

These partners also embody the 'future of work' we aspire to prepare students for. If we successfully embed our unique partnerships in our curriculum, not only do we offer students a learning experience they will perceive has highly relevant to their career aspirations, we will ensure that our curriculum remains responsive to the rapidly changing world of work those partners represent. Our partnerships offer us a way to connect our curriculum with our students' and their families' aspirations, to influence their choice of university and to enhance their progression to successful careers.

Key messages about partnerships

- Our established partnerships with community and industry groups provide us a unique opportunity to create exceptional learning experiences for our students but these partnerships are under-utilised in the current curriculum structures, making it difficult for students to find and engage with the experiences that would benefit and broaden their career aspirations.
- There is scope to leverage and re-orient existing significant University partnership initiatives (such as Launch Pad & the Regional Centre of Expertise on Education for Sustainable Development) to deliver 'at scale' signature learning experiences.
- There is no coordinated oversight or management of partnerships and no support for schools in deriving maximum educational impact from partnerships.

5. Prospective students' curriculum aspirations

Two recent market research studies commissioned by the University and carried out by The Behavioural Architects, and Strativity contain information about the kind of curriculum structures that might be attractive to prospective students. The findings relevant to curriculum structures are summarised below. Appendix 3 has more details.

The Behavioural Architects carried out an in-depth study of how students navigate choices about universities and courses. They found that students find the multiplicity of options confusing. School leavers with higher ATARs are particularly anxious about making the right choice. Those with lower ATARs are less worried and often do less research into options, but may then enrol in a course that doesn't suit them and will want to change after first year. Overall there is a preference for courses offering tangible job-related skills.

Strativity carried out separate research into the Western Sydney student experience and confirmed that students find course choice challenging at all stages. Initial enrolment and selection of courses and units is confusing. If they realise the course is not what they really wanted, they perceived that it is confusing and hard to change and they may well drop out rather than transfer to another option.

Key messages from market research

- Students find selecting from the multiplicity of options for universities and degree courses confusing and stressful.
- Some students are clear about what they want to learn and why. There is also a demand for professionally aligned courses perhaps (but not necessarily) offering less elective choice.
- Course structures that don't unnecessarily restrict students' options for changing study pathways would appeal to students, especially those who are less confident about their degree decisions.
- All course descriptions should clarify the tangible job-related skills offered.

6. Where to next?

In the next stage of the 21st Century Curriculum Project, the Stage 1 Working Group will support Schools with relevant data in relation to the key messages in this report to progress strategic Curriculum Renewal in each school. Figure 2 gives an overview of the core data available.

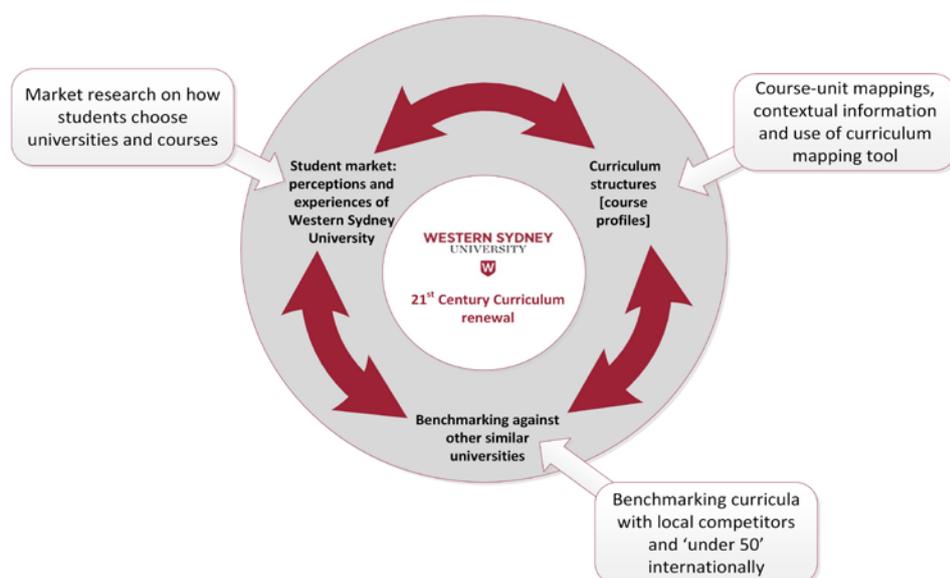


Figure 2. Western Sydney University Core Data

Project funding has been made available to support 6-month 'School pilot' projects to review and develop proposals for more coherent course structures and to identify and strengthen opportunities for embedding signature learning experiences through expanded and enhanced educational partnerships with community and industry. The pilots will also support Schools to fast-track renewal of strategically important load-bearing courses where relevant. The focus and outcomes of these Pilots will be negotiated with each School Dean. The 21CC project team and staff in the Learning Futures Portfolio will support and coordinate the pilots. School-based Curriculum Advisors and Course Quality Officers can assist with use of the Curriculum Mapping Tool and the Course Profiling Tool to review and analyse course structures. As the project is implemented over the next 3 years, there will be additional opportunities for engagement that takes account of the insights and trends from market research and future workforce needs.

For regular updates, and more information on other 21CC project initiatives and future funding opportunities visit the [21st Century Curriculum Project website](#).

Appendix 1: Current Course Structures

This Appendix summarises some of the data available on our current course structures across the University. It draws on reports from the Callista system and from the online course handbook data. Data on four aspects current course structures are described:

1. Availability of free electives as opportunities to study across disciplines
2. Coherence of courses as distinct pathways to a degree qualification in a discipline
3. Innovation and transition to new courses
4. Balancing flexibility with specialisation.

Elective options

Western Sydney University's standard Bachelor degree is nominally a 240 credit point program, of which 160 points are discipline-specific and 80 points are free electives, which the student can choose from other disciplines.

In 2017, of 66 standard Bachelor courses on offer, 19 (29%) have no electives. While many of the courses with no electives are professionally accredited, often with a substantial compulsory work placement component, more than a third have no professional accreditation requirements.

Only 13 Bachelor courses have the recommended 80 credit points of free electives. Instead, students are often presented with a list of discipline-specific options within a degree program. In some cases, there are elective slots with a single named 'recommended elective'.

Coherence and distinctiveness

In March 2017, the University database of courses listed 421 courses, of which 413 are current (the rest planned or suspended). While some disciplines have only a single Bachelor course at undergraduate level, others have a number of variations, which are configured differently in different disciplines. with some offered only as 'exit' options. There is similar variation at postgraduate level. Table A1.1 lists various degree variations identified at the undergraduate and postgraduate levels. Alongside each is the number of each, based on an analysis of 2016 data, in which the courses are grouped into 67 discipline streams at undergraduate level and 71 discipline streams at postgraduate level.

Undergraduate qualifications		Postgraduate qualifications
Diploma – 19	Bachelor – 64	Qualifying – 1
Diploma Extended – 16	Honours – 13	Graduate Certificate – 38
Diploma full time – 6	Advanced – 16	Graduate Diploma – 36
Associate Degree – 2	Exit only – 6	Masters – 55
First Year Program (FYP) – 15	Teaching Pathways – 3	Advanced/Executive – 2
FYP Fast – 6	Double degrees – 12	Exit only – 2
FYP Extended – 14		Double degrees – 2
		Masters/research degrees (HDR preparation) – 3

Table A1.1 Qualifications available within different discipline streams

Innovation and transition to new courses

Legacy courses

In addition to the current courses there are 405 courses listed as 'continuing', that is, running in teach-out mode with students still enrolled, although the course is no longer on offer to new students.

An academic program review in 2004 mapped all students in continuing courses into new courses. Since then the number of continuing courses appears to have proliferated again. Some of these are relatively recent changes while others are older, for example:

- A 320 credit point Bachelor degree course that was first offered in 2013, and expired in 2016 still has 533 students. Of these, 406 are actively enrolled but not yet completed and the remainder either inactive (dropped out or transferred) or in intermission (taking time off from study).
- A continuing 240 credit point Bachelor course expired in 2009 and has only 7 students, of whom 2 are actively enrolled and the other 5 are inactive. So the course has remained open for 2 students.

We now have tools that can assist the mapping of units completed by current students into new courses, so that they can easily transfer to a current degree. The Curriculum Mapping Tool (CMT), which will be available in a web-based version by the end of July 2017, can be used to map learning outcomes and assessments from older units into new course learning outcomes and provide evidence of equivalence between old and new units.

New courses

An analysis of the 48 new courses introduced in the last three years shows that only 16 met the targets for student load included in their business case, and 32 (two-thirds) had fewer students than predicted. While there is a wide variation in the discrepancy between actual and budgeted student loads, there does appear to be a trend showing that it takes longer than is usually anticipated to build load in a new course (Figure A1.1)



Figure A1.1 Data on discrepancy between predicted and actual student loads in new courses.

New courses launched within the last 3 years show the following patterns:

- In terms of content, 'leadership' and other generic words in their title seem less successful (in terms of meeting their predicted load) than those with a practice focus. For example, Development Studies and Cyber security in SSSP met their targets and had over 15 EFTSL. The most successful new course was the Nursing masters (practice) which is fully online.
- Some of the undergraduate courses that met their targets were specialist or double degrees with small initial targets.

Balancing flexibility with specialisation

The Course Profiling Tool (CPT) draws data from the course handbook and can be used to map out where study units are shared by different degree courses. Some examples show how we can use these mappings, along with other contextual information to examine the current course structures.

One aim of looking at these mappings is to identify where there is scope for simplification, so that the offerings are transparent and accessible to students. However, the mappings in themselves are insufficient to make such a judgement. Other contextual factors, such as the alignment of the degree with professional accreditation also needs to be taken into account.

Overlap between degrees

The School of Science & Health, which covers both professionally aligned and general degrees, provides some contrasting examples. Many of the School's undergraduate programs are structured as specialist named degrees. Other Schools offer fewer degrees with specialisations offered as majors within these.

The examples from the School of Science and Health shown in Figures A1.2 and A1.3 illustrate the complexity and inconsistency in the information provided for students. There appears to be a distinction between specialist professional programs that have few or no electives, and broader degrees that in theory provide a wide variety of 'pick and mix' options. However, the mix of key programs, majors and sub-majors, and 'recommended' electives and pathways appears confusing. In some cases, students are able to acquire multiple majors and sub-majors, so that the nature of their specialisation is unclear.

The three Health Science courses in Figure A1.2 (Health Science, Health Science (Paramedicine) and Health Science (Sports & Exercise Science) share fewer than of half their units. There are some basic science components in common, but each course has a substantial specialist element that clearly characterises the degree. The Paramedicine and Sports & Exercise Science degrees each have their own work-integrated learning components, and neither has any free electives.

Within the Bachelor of Health Science there are four 'key programs', each with a separate unit set, and 6 or 7 electives. However, some electives are 'recommended' options within the discipline, rather than free electives.

In the BSc degree (Figure A1.3), there is so much choice that all the unit choices in the BSc (Chemistry), a separate degree, could also be done within it. There is also a multiplicity of majors and sub-majors specified. The only distinguishing feature of the BSc (Chemistry) is its branding as an accredited degree. If the accredited study pathway were formally included as part of a broader degree program rather than being a separate course, students would be more easily able to transfer between study pathways, and the overall number of degrees would be reduced.

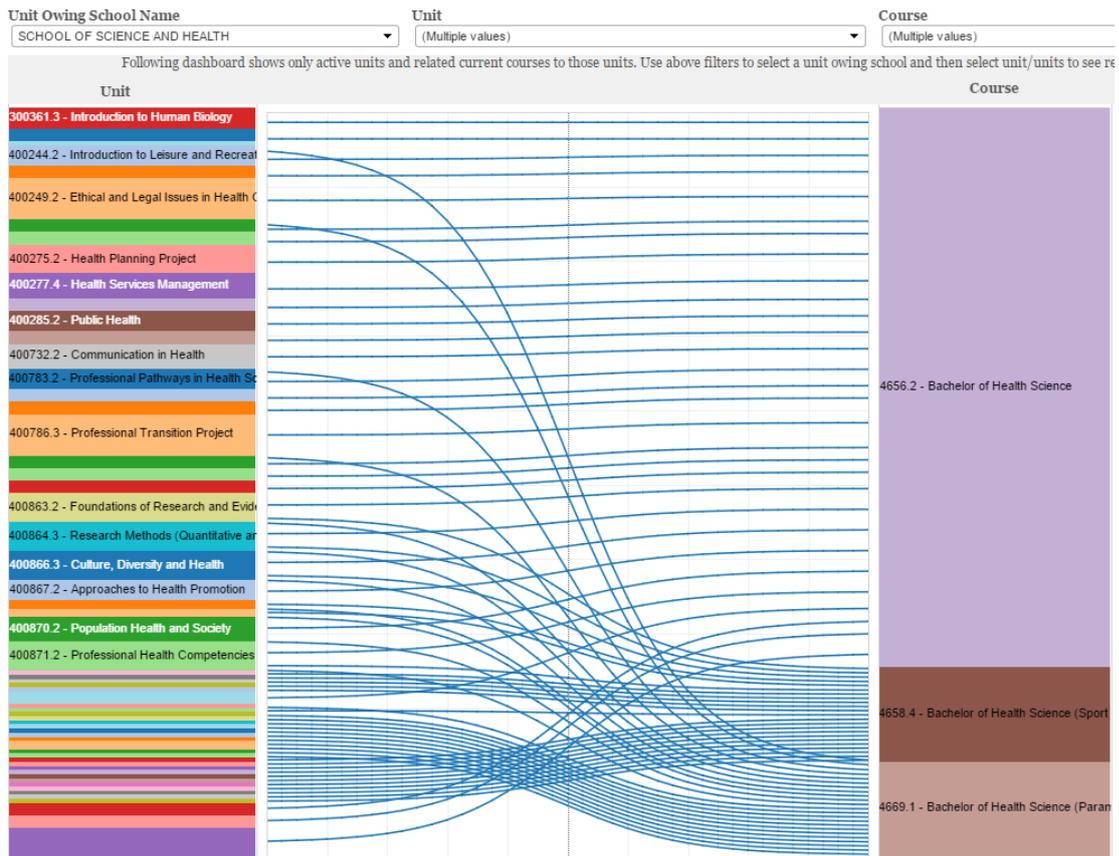


Figure A1.2. Unit to course mappings for 3 Bachelor of Health Science courses.

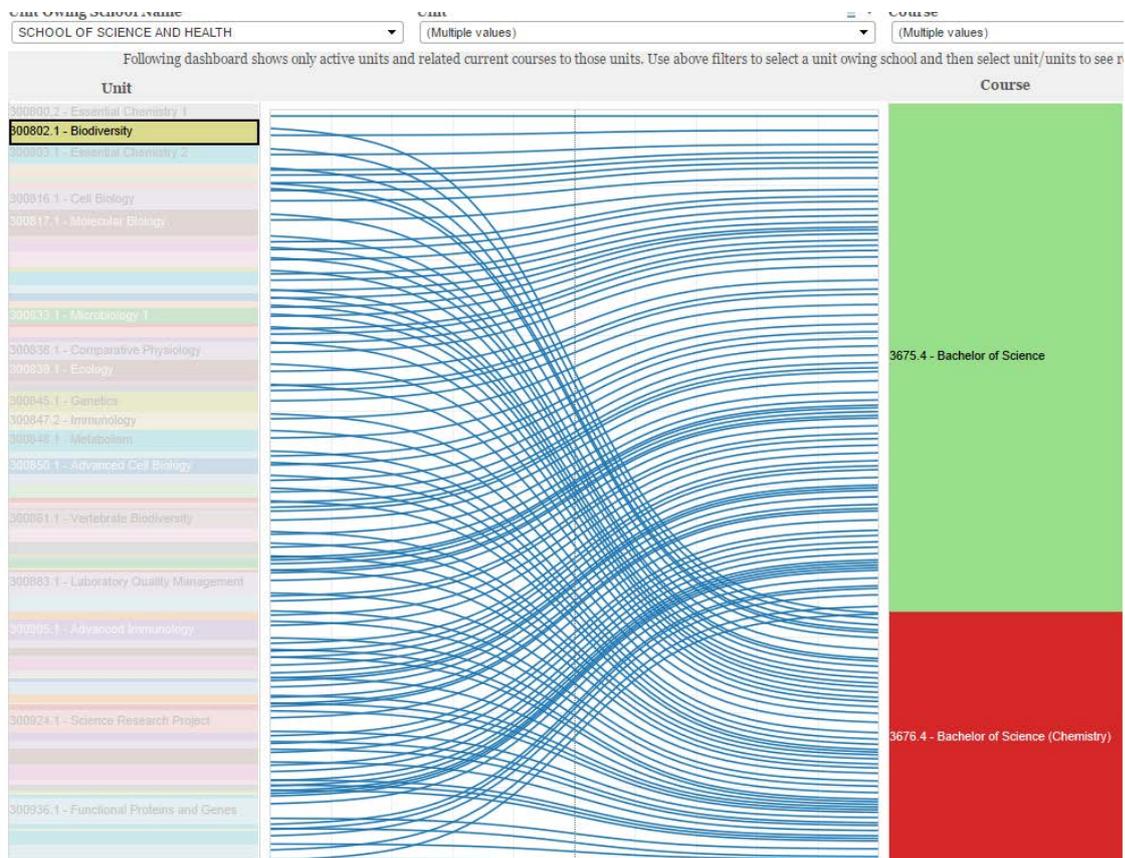


Figure A1.3. Unit overlap between the BSc degree and the BSc (Chemistry) degree

Conclusions

Across the University there is a confusing multiplicity of practices for defining students' selection of study units: majors and sub-majors, key programs and separate degrees. The rationale for using one or the other is not immediately clear. While professional accreditation influences course structures and may constrain choice of electives, there are many non-accredited courses with limited or no elective choice. There are also instances of key programs and majors within courses being accredited.

The complexity of the current structures impedes curriculum updating and renewal. There are almost as many legacy courses still running as there are currently offered courses – suggesting that the planning of new courses is not taking into account the needs of continuing students. At the same time, the new courses introduced are not necessarily attracting students in the anticipated numbers in the short term. A more streamlined structure with fewer courses would make it easier to update courses without creating entirely new offerings. While some degrees are directly aligned with specific professional roles, there is no evidence that separate degree courses are always needed to appeal to particular student career aspirations. In addition, separate degrees, rather than options within one degree, make it harder for students who want to change the focus of their studies after the 1st or 2nd year.

The unit to course mappings using the CPT show where courses have so much overlap that they could be combined. The mapping tool can also show where proposed changes to the curriculum in one unit or course will influence others. Determining the nature of the influence will require use of the [Curriculum Mapping Tool](#) (CMT) and the [Course Profiling Tool](#) (CPT). The CMT could also assist with mapping units from old courses into new ones, and reduce need for students to remain enrolled in 'teach-out' continuations of obsolete curricula. Figure 1.4 summarises the available data sources and information tools.

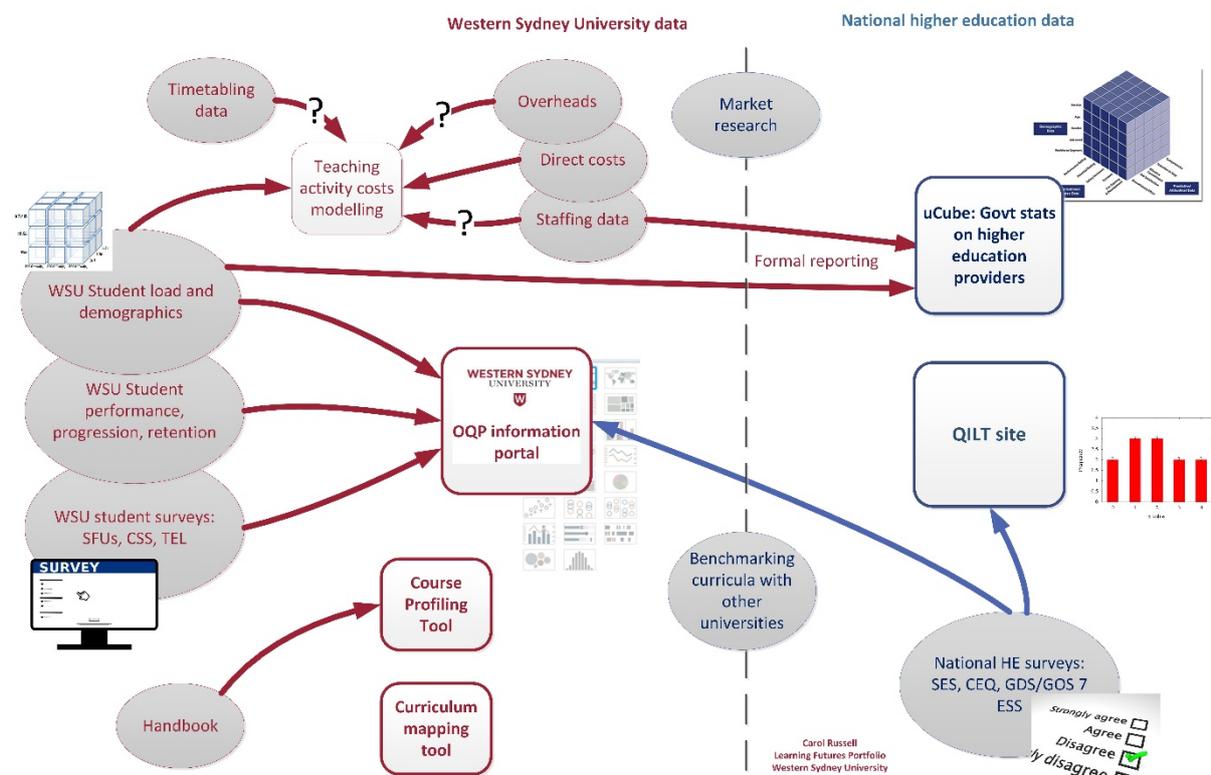


Figure A1.4. Data sources and information tools overview

Further information on this appendix is available from [Dr Carol Russell](#) - Learning Transformations Portfolio, [Stephen Butcher](#) - Quality & Performance, and [Lizette Delacy](#) - The Student Experience Office.

Appendix 2: External Benchmarking Report

The aim of this report is to compare WSU curriculum structures with our main local and international competitors' curriculum structures, and to note points of difference in how our competitors present their educational offerings.

Our local university competitors are UTS, Macquarie, Wollongong universities. Sydney and UNSW are included for context.

Our international competitors have been selected from two sources of international rankings: QS top ten under 50, and Times Higher top 10 under 50 – for the year 2016. Where there is a cluster of universities in a single region, we have broadened out the scope to include a selection of universities included in the top 20 under 50

QS top 10 under 50	Times Higher top 10 under 50 (Young Rankings)
<ol style="list-style-type: none"> 1. Nanyang Technological University SINGAPORE 2. Hong Kong University of Science and Technology, HONG KONG 3. Korea Advanced Institute of Science & Technology (KAIST), STH KOREA 4. City University of Hong Kong, HONG KONG 5. Pohang University of Science & Technology, STH KOREA 6. The Hong Kong Polytechnic University, HONG KONG 7. Maastricht University, THE NETHERLANDS 8. University of Technology Sydney AUSTRALIA 9. Universitat Autònoma de Barcelona SPAIN 10. University of Antwerp, BELGIUM <p>(Note: 15-University of Dundee; 21-Linköping University)</p>	<ol style="list-style-type: none"> 1. École Polytechnique Fédérale de Lausanne, SWITZERLAND 2. Nanyang Technological University, SINGAPORE 3. Hong Kong University of Science and Technology, HONG KONG 4. Maastricht University, THE NETHERLANDS 5. Pohang University of Science and Technology, STH KOREA 6. Korea Advanced Institute of Science & Technology, STH KOREA 7. University of Konstanz, GERMANY 8. Karlsruhe Institute of Technology, GERMANY 9. Pierre and Marie Curie University, FRANCE 10. Scuola Superiore Sant'Anna ITALY <p>(Note: 14-University of Luxembourg; 18-University of Calgary)</p>

Table A2.1: List of competitor universities

The report reviews the undergraduate context only focusing on a range of benchmarking dimensions:

1. It considers **how the institution describes an overarching curriculum intention or signature pedagogy for its degree offerings**. The report focuses on how these curriculum intentions inform curriculum structures. The data for this dimension is derived from university websites including institutional strategic plans.
2. It draws on data available from university handbooks to **compare the number of degree offerings**.
3. For local competitors, the report **compares a select number of degree descriptions** to determine how WSU degrees compare against others.

4. For local competitors, the report also canvasses the available **data on the student experience of courses in cognate fields of study**. The national Quality Indicators for Learning and Teaching (QILT) provide data on (i) the quality of educational experience (ii) teaching quality (iii) learner engagement (iv) learning resources (v) student support (vi) skills development.
5. For local competitors, **QILT data on graduate destinations** related to overall employment, full-time employment, full time study, and median salary.

1. Distinctive Curriculum intentions

This section of the report offers a glimpse into how local and international competitor universities frame the distinctiveness of their curriculum intentions.

INTERNATIONAL COMPETITORS

École Polytechnique Fédérale de Lausanne SWITZERLAND

Distinctive curriculum intentions: EPFL's primary mission is to train engineers, architects and researchers. We are constantly striving to improve the quality of our teaching through new approaches, so that it will keep pace with the major technological and social challenges of our time. EPFL's particular brand of teaching is unique: our students first acquire a strong technical foundation before launching into a highly rewarding practical component in the form of lab sessions, all the while being immersed in a research-rich environment.

- Consolidating students' core knowledge
- Giving a boost to the learning labs
- Harnessing innovation in teaching

Nanyang Technological University SINGAPORE

Curriculum intentions: NTU introduced a new undergraduate curriculum that puts learning within and beyond the curriculum at its core. Called **NTU Education**, this approach focuses on supporting how students learn and providing them with opportunities to develop skills that will enable them to face the challenges of the 21st century with optimism and confidence. **There are two key components of an NTU education – an enriching academic life and an active student life that encompasses learning beyond the formal curriculum.** These in turn shape the NTU student experience. Students undergo a broad education with at most 70% of courses from their main discipline and at least 30% of courses from other fields. Three core modules are taken by all students, underscoring their importance. These are:

- Communication skills
- Singapore studies
- Environmental sustainability

As part of “general education”, students pursue modules in business management, humanities and social sciences, technology and society, and liberal studies. They also broaden their horizons by taking a range of free electives, which can be grouped into minors. They can choose from among 35 modules outside their discipline. In addition to a series of double degree and double major programmes, NTU offers three specialised programmes for high-calibre students looking to stretch themselves through cross-disciplinary learning:

- The Renaissance Engineering Programme, a dual-degree residential programme that combines engineering and business to groom future industry leaders. It includes a year-long attachment to another top university like the University of California, Berkeley, and a stint as an intern in Silicon Valley during the summer break.

- The University Scholars Programme, offering multidisciplinary courses and experiences to produce versatile thinkers and leaders. Besides taking customised courses, students enjoy opportunities to interact with renowned professors, artists, writers and Nobel laureates.
- The CN Yang Scholars Programme, which prepares students for graduate studies and research in science and engineering. After pursuing advanced physics, chemistry, biology and mathematics in the first three semesters, they go on to specialise in science or engineering and can accelerate their PhD studies with a top scholarship and overseas attachment

Korea Advanced Institute of Science & Technology, SOUTH KOREA

Distinctive curriculum intentions:

- Fostering creative talents: strengthening a student centred teaching innovation and e-learning | bolstering of creative design and convergence education
- **Fostering of Global Science and Technology Leaders:** Free and creative educational environment
 - Holistic leadership training (challenging spirit, humanity and leadership)
 - English lecture and English education for global talent cultivation
 - Expansion of Korean education for international students
- **Human Resource Development & Capacity Building**
- Cyclical personnel system
- Strengthening of efforts to recruit outstanding faculty
- Identifying and recruiting creative talents

The Hong Kong University of Science and Technology, HONG KONG

Distinctive curriculum intentions: The Common Core Program strives to provide undergraduate students with a well-rounded quality education that broadens their horizons, inspires and ignites their passion for learning and empowers them for lifelong pursuit of excellence. Specifically, the goals of the Common Core Program are:

- Broadening horizons: to allow students to gain intellectual breadth and an appreciation of intellectual achievements across and beyond the main academic disciplines of their studies.
- A passion for learning: to spark students' passion for learning and enhance their higher order intellectual abilities: analysis and evaluation; judgment and critical thinking; defining and solving problems.
- A lifelong pursuit of excellence: to provide a foundation for students' life-long development through personal growth, preparation for future careers and opportunities to make contributions to the community.

Each common core area has clearly defined intended learning outcomes (ILOs). The area ILOs are presented as statements of what students should be able to do as a result of their learning experience in the relevant common core courses. They are aligned with the mission, goals and objectives of the Common Core Program. The learning outcomes for each common core area are outlined in Figure A2.1.

Beginning from the 2010-11 academic year, all students need to take common core courses to fulfil the common core requirements. Common core courses are grouped by types of programs (4-year or 3-year). Students must follow the course list applicable to their program type.

Common Core and the Desired Attributes of HKUST Graduates: The University aims to provide education that help its undergraduate students to develop broad graduate attributes that are summarized as "ABC LIVE": **A**cademic excellence, **B**road-based education, **C**ompetencies and capacity building, **L**eadership and

teamwork, International outlook, Vision and an orientation to the future, and Ethical standards and compassion. See Figure A2.2.

Common Core Area	Intended Learning Outcomes	
Humanities (H)	H1	Comprehend and narrate human phenomena from the perspectives of humanities disciplines.
	H2	Appreciate and articulate diverse human values, feelings, reason and creativity in various forms of expression.
Social Analysis (SA)	SA1	Analyze key societal and behavioral issues by applying relevant social scientific approaches in different contexts
	SA2	Communicate a concern about key societal issues as responsible citizens
Science and Technology (S&T)	ST1	Comprehend and apply the basic principles of science and methods of scientific inquiry
	ST2	Evaluate the social and philosophical implications of scientific discoveries and technological development
Quantitative Reasoning (QR)	QR1	Use mathematical models or quantitative methods to formulate, analyze and solve problems that they encounter in their daily and professional lives
	QR2	Choose an appropriate method to represent and process a given set of quantitative data and to draw inferences from such data in a systematic and logical way
Arts	A1	Appreciate the theory, history and practice of the arts
	A2	Express themselves through various art forms or media
English Communication (E-Comm)	E1	Use English to achieve communicative purposes appropriate to the academic and social context
Chinese Communication (C-Comm)	C1	Students with Chinese background will be able to use Putonghua and Standard Written Chinese to achieve communicative purposes appropriate to the context, be it academic, social or professional
	C2	Students with non-Chinese background will be able to achieve basic communicative purposes in Putonghua
Healthy Lifestyle (HLTH)	HL1	Recognize the importance of physical, psychological, social, and occupational wellness
	HL2	Develop strategies to manage their lives
	HL3	Acquire new sports skills and maintain a higher level of physical wellness through a variety of activities

Figure A2.1. Source: http://uce.ust.hk/web/about/about_outcomes.html

A	Academic excellence An in-depth grasp of at least one area of specialist or professional study, based on a forward-looking and inquiry-driven curriculum
B	Broad-based education Intellectual breadth, flexibility, and curiosity, including an understanding of the role of rational, balanced inquiry and discussion, and a grasp of basic values across the disciplines of science, social science, engineering and the humanities
C	Competencies and capacity building High-end, transferable competencies, including analytical, critical, quantitative and communications skills
L	Leadership and teamwork A capacity for leadership and teamwork, including the ability to motivate others, to be responsible and reliable, and to give and take direction and constructive criticism
I	International outlook An international outlook, and an appreciation of cultural diversity
V	Vision and an orientation to the future Adaptability and flexibility, a passion for learning, and the ability to develop clear, forward-looking goals, and self-direction and self-discipline
E	Ethical standards and compassion Respect for others, high standards of integrity, compassion, and a readiness to contribute to the community

Figure A2.2. Source: http://uce.ust.hk/web/about/about_outcomes.html

City University of Hong Kong, HONG KONG

Distinctive curriculum intentions: At CityU, we strive to nurture well-rounded graduates who are competent professionals, critical thinkers and life-long learners equipped to cope with a globalised work environment and positioned to capitalize on our extensive links to mainland China and beyond. We offer professional education that prepares our students for the challenges and exciting opportunities opening up in Hong Kong, the Asia-Pacific region and throughout the world in business, science and engineering, energy and environment, law, creative media and social sciences. The University implemented its signature Discovery-enriched Curriculum (DEC) by positioning 'discovery' and 'innovation' as an integral part of the entire university undergraduate experience. The DEC has the goal of giving all our students the opportunity to make an original discovery while at City University. The DEC's emphasis on discovery, innovation, and creativity lies at the heart of our academic strategy and the 4-year degree curriculum for teaching and learning.

- Gateway education requirement: provides students with multi-disciplinary learning experiences. It helps them acquire a wide range of skills and knowledge necessary for completing University studies and prepares them to be life-long learners and active, informed citizens who can thrive in a complex and continuously changing world
- College/School requirement
- Major and minor requirement

Maastricht University, THE NETHERLANDS

Distinctive curriculum intentions: Maastricht University (UM) is known for its **Problem-Based Learning system** and international orientation. Our small-scale 'international classroom' brings together people from all over the world who have different backgrounds and perspectives. And it's these very differences that make the UM learning experience unique. In small groups of roughly 13 students, supervised and assisted by a tutor, you actively seek solutions to real-life problems. In this way, you learn not only to operate at an academic level, but also to work independently on real-world issues – just as you will later on, in your career. UM also has embraced **the concept of the 'international classroom'**. This is a long-term project encompassing many activities and initiatives, but it is also a mindset among students and staff. The learning process benefits when students work in small tutorial groups with people from different cultural backgrounds: by approaching problems from a variety of perspectives, students are acquainted with different ways of seeing things that enhance the quality of the discussion. In this way, the 'international classroom' serves to prepare students for the rapidly changing and globalising labour market.

University of Luxembourg, LUXEMBOURG

UL aims to educate tomorrow's leaders in a global digital society. **It has to provide a teaching and learning environment where computational skills and digital literacy will be a central element in all disciplines**, from natural sciences to humanities and social sciences. Implementing innovative technology-enriched learning environments for the efficient acquisition of these skills attracts the best students to Luxembourg. The focus on digitalisation and computation also adds an entrepreneurial dimension to UL, making it a trusted and preferred partner both for industry and for governmental stakeholders.

NSW COMPETITORS

Macquarie University

Distinctive curriculum intentions:

- offer experiences, within formal settings and beyond, that change the lives of our students, support them in achieving their aspirations and provide an incubator for the next generation of leaders
- expand **PACE as a signature program that distinguishes this University**
- infuse cutting edge technology into our learning environment to deliver world-class learning and teaching on campus and online
- develop and lead in teaching models that promote enquiry-driven learning and prepare students for productive professional and civic lives
- imbue our academic and professional staff with a culture of transformative learning, expand their horizons and nurture their capabilities.

PACE: (Professional and Community Engagement) is a University-wide initiative which provides undergraduate students with experiential learning opportunities with local, regional and international partners. PACE provides opportunities for students to apply learning in practice. Based on the principle of reciprocity, students contribute to the partner organisation and the community it serves while gaining valuable industry experience and skills.

- Ethical practice
- Partnership and reciprocity
- Social responsibility
- Sound pedagogy
- Recognition of and respect for diverse ways of doing, being and knowing
- Whole person learning
- Knowledge generation and dissemination
- Transparency
- Equity of access to resources

Students enrol in a designated PACE unit. All PACE units include an experiential learning activity which constitutes at least of 20% of the total workload of the unit. These activities can include:

- internships
- practicums
- field trips with an external component
- service based learning
- community development projects
- quality assurance projects
- research projects
- community and business reference panels

In 2017, MQ offered 87 PACE designated units <http://handbook.mq.edu.au/2017/Units/PACE#>

The University of Wollongong

Distinctive curriculum intentions: to deliver student-centred intellectually challenging programs to the highest standard in technology rich and immersive environments, and develop students for their role in society and a global workplace.

Faculty statements:

- The Faculty of Business (BUS) offers a five-star learning experience that seeks to develop professionals, managers and business leaders who are independent thinkers and creative problem-solvers, high in demand amongst employers across all sectors of the economy.
- The Faculty of Science, Medicine and Health (SMAH) offers a range of undergraduate and postgraduate programs focused on expanding human knowledge and improving our quality of life.
- The Faculty of Engineering and Information Sciences (EIS) has a world class reputation for excellence in research, strong collaborations with industry and government partners, and innovative approaches to teaching and learning.
- The Faculty of Social Sciences (SOC) combines traditional and emerging disciplines that have expertise in human behaviour and the way people interact with their environment
- The Faculty of Law, Humanities and the Arts (LHA) aspires to build capacity in the regional economy and in international networks through research-led educational leadership. Graduates have skills that employers want, like creative problem-solving, analytical and critical thinking, self-discipline and team work.

University of Technology Sydney

Distinctive curriculum intentions: **The UTS Model provides a learning foundation that is practice-oriented, globally-focussed and research-inspired.** We listen to business and industry and develop graduates who contribute to the future of their professions and a global society. Our future-focussed learning environment and strategies provide a framework so that graduates develop the capabilities and attributes to future-proof their careers.

- An integrated exposure to professional practice through dynamic and multifaceted modes of practice- oriented education, including work placements in industry, clinical placements and simulations, projects for community organisations, consulting projects, and high levels of practitioner/professional engagement in the classroom and in curriculum design.
- Professional practice situated in a global workplace, with international mobility and international and cultural engagement as centre piece. UTS promotes expanded student international exchange opportunities and study abroad, the study of languages as part of professional degrees and genuine multicultural learning and understanding among students, staff and alumni.
- Learning which is research-inspired and integrated, providing academic rigour with cutting edge technology to equip graduates for life-long learning.

All our courses are designed to be highly relevant to industry and the professions, taught with important global issues in mind. By basing assignments and coursework around case studies affecting communities and industry rather than generic textbook cases, we give you the chance to engage with innovative and relevant material while developing your practical skills. This makes for a more interesting study experience and gives our graduates an edge when it comes to employment. UTS courses integrate professional practice into your learning experience through:

- case study-based assessments
- work placements in industry
- clinical placements and simulations

- projects for community organisations
- consulting projects high levels of industry engagement, in the classroom and in course design

The University of Sydney

Distinctive curriculum intentions (for new degrees in 2018): Bachelor graduates need to be agile, inventive, digitally literate, effective across discipline boundaries and culturally competent as well as skilled in particular disciplines. In response, we have transformed our undergraduate degrees to offer new ways to learn that extend beyond the traditional classroom into the virtual one, that include practical business, community, entrepreneurial and research experience and that enable our students to gain the skills they will need to thrive and lead in a changing world. The focus is on Academic breadth | Global perspectives | Cross disciplinary learning | Real world projects. **The new degrees clustered in the following ways:**

- Liberal Arts & Sciences
- Specialist
- Professional

Launching in 2018 is a new Open Learning Environment (shared pool of units with 0-6 credit points). OLE units are designed to enable students to build skills and extend knowledge according to their own needs. OLE units will be offered in areas such as design thinking, persuasive communication, project management, team leadership and entrepreneurial thinking.

The University of New South Wales

Distinctive curriculum intentions: At the heart of the educational strategy, **the UNSW Scientia Educational Experience will deliver a distinctive, innovative and globally relevant educational approach.** We will achieve greater flexibility and improved life-study balance through the seamless integration of the physical and digital campuses and carefully planned development of a trimester academic year. Outstanding program design, an emphasis on cross-disciplinary learning, smart use of technology, global engagement and complementary career-focused themes, will give our students an opportunity to personalise and tailor their educational experience and provide graduates with the attributes necessary for success in the 21st century. UNSW will systematically embed within its programs knowledge and understanding of Indigenous issues that are relevant both to the degree program and to a broader understanding of Australian history, cultures and environments. The UNSW Scientia Educational Experience will, by the incorporation of the following key elements and principles, be:

- blended and technology-enhanced with seamless integration of the physical and digital campuses
- based on simple yet flexible degree structures making the most of a trimester-based academic year
- designed to deliver integrated graduate capabilities whose values are woven into all programs
- highly focused on attainment
- built on ensuring a personalised student experience
- focused on building and supporting learning communities
- able to embed research-integrated learning into all programs
- able to deliver global experience within an Australian context, and
- focused on work-integrated learning and support for future careers.

2. Number of degree offerings

Degree types	WSU*	Selection of top 10 universities under 50				Local competitor universities				
		HKU Sci & Tech	City Uni HK	Maastricht	Dundee	UTS	Wollongong	MQ	UNSW	USyd
UG (incl. Hons+Adv)	93 (excluding double degrees)	47	64	19	263	83 (excluding double degrees)	175	81	250	35 (2018 structure)
GCert	38	37	1	-	14	64	37	30	41	105
GDip	36		-	-	15	46	14	22	43	123
Masters c'work	55		57	64	185	82	63	77	127	247

Data source: University Handbooks available on the web.

* See Appendix 1 for additional information of the breakdown in WSU degrees, including exit only options.

3. Comparison: degree descriptions and intended course outcomes

Bachelor of Arts (WSU 1706)

	WSU	Macquarie	Wollongong	UTS	USydney	UNSW
Aims	<p>The BA offers students an opportunity to develop a depth of disciplinary expertise together with the breadth of vision afforded by cross-disciplinary approaches to the humanities. Study in the Bachelor of Arts is designed to develop communication and personal skills, creativity and a capacity for independent thought, adaptability to new situations and problem-solving skills, attributes increasingly demanded by employers. Bachelor of Arts graduates find employment in diverse areas including: communication and media industries; education; psychology and counselling; cultural, political and social policy analysis; writing and publishing. The Bachelor of Arts is a three-year degree designed to provide knowledge and generic skills that form the basis for lifelong learning (WSU Handbook)</p>	<p>The BA is a broad-ranging, flexible degree allowing you to follow a path to suit your intended career. You can choose from amongst over 40 possible majors from all faculties of the university. You will specialise in a particular area by choosing a major and can also explore ideas across disciplines. This interdisciplinary approach is a hallmark of our graduates and highly valued by employers. The Bachelor of Arts will help you develop problem solving, critical analysis and highly developed communication skills. More information can be found in the information on the individual majors.</p>	<p>A BA degree is one of the more traditional and popular university degrees, though it has changed in shape and content throughout the years and from country to country. The BA today is made up of subjects with origins in the humanities; history, literature, languages and philosophy and the disciplines developed during the nineteenth century that we now know as the social sciences; cultural studies, sociology and politics. While universities package courses in a variety of ways, these and related disciplines are generally included in an Arts degree, even if they are not always located in the Faculty.</p>	<p>No General BA</p>	<p>The BA degree will hone your critical thinking skills to help you become an independent thinker, able to form and articulate judgements based on argument and evidence. Whether you wish to learn a new language, study the great works of literature or uncover archaeological remains, our courses will stretch and challenge you to think differently. This degree provides a rare chance for you to explore your passions, interests and ambitions. Both rigorous and rewarding, the Bachelor of Arts is renowned as the go-to program for those wanting to challenge assumptions, discover new cultures, or scratch beneath the surface of our own society to encounter fresh ideas. Students who complete this arts degree will be well suited to meet the challenges of the modern 21st-century workplace, where specialisation, creativity, logic and critical argument come to the fore.</p>	<p>The UNSW BA is designed to provide you with all the benefits of an education in the Humanities, Social Sciences and the Creative and Performing Arts. The program provides you with not only the breadth (Free Electives and General Education) to explore a wide range of diverse interests but also the depth (Major and Minor streams) to focus in detail on two specialisations. The UNSW BA can be completed full-time in Single mode (normally 3 years), in Dual mode (the equivalent of two years full-time) or part-time. The basic requirements of the program are simple. The BA has a depth component and a breadth component. Students enrolled in Single mode do both the depth and breadth component while students enrolled in Dual mode only complete the depth component.</p>

Course Learning Outcome			<ul style="list-style-type: none"> • Evaluate complex issues and ideas about society and culture; • Apply disciplinary knowledge and skills in a variety of real-world professional contexts; • Communicate concepts effectively to a range of audiences; • Use digital and other technologies essential for careers and lifelong learning 			<ul style="list-style-type: none"> • To develop informed understanding of human experience, human culture and human society • To teach the tools and methods of understanding associated with Humanities and Social Science disciplines, and to encourage students to perceive the relationships between these disciplines • To encourage the breadth of vision and critical thinking associated with interdisciplinary scholarship and research • To enable students to place contemporary Australian society and culture in an historical and comparative context • To engage critically with fundamental questions about value in both ethical and aesthetic contexts • To develop the skills of critical, creative and imaginative thinking about society, culture and the arts • To promote the techniques and value of reasoned and open-minded discussion and debate • To foster understanding of the experiences and world-views of other times, other places, and other cultures.
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Bachelor of Computer Science (WSU 3506)

	WSU	MQ	Wollongong	UTS (Computing Science)	USydney (CS +Tech)	UNSW
Aims	The Bachelor of Computer Science course provides students with a thorough and in-depth technical understanding of modern networked computer systems. This understanding includes how these computer systems are put together, how they work and what are the principles that govern them. Based on this solid foundation students then have the opportunity to further learn the practical skills needed to design, develop and integrate the networked computer systems required by today's large organisations. This course is a three year course with three distinct majors which allow students to specialise in different applications of computer science and computer systems. The three Majors are: Cyber security, networked systems and systems programming.	X	The Bachelor of Computer Science focuses on the development of high-level programming skills that can be applied across a wide range of applications, including analysis of stock market trends, games design, neural network design, automatic teller machines and patient monitoring in hospitals. The core subjects teach you to understand the structure of data and the role it plays in delivering solutions to complex problems. The degree includes core of programming subjects as well as electives in languages, artificial intelligence, computer security, computer graphics, operating systems, real-time software and software engineering. Completion of a major is not compulsory but is highly encouraged.	This course offers a sound education in all aspects of computing science and information technology. It is intended for students who aspire to become researchers or who want a career in a more scientific-oriented computing area. As such it provides a pathway to postgraduate research study. This course adopts a practice-based approach to computing science education and the course content is a mix of theory and practice with a stronger focus on the mathematics appropriate for computing science and research projects. As well as gaining strong technical skills in computing science and IT, students gain skills in problem solving, teamwork and communication. Students undertake research projects with UTS researchers. Employers look for graduates with strong computing science skills and, in this course, students are exposed to real research problems in computing science and IT.	The BCST will prepare you to work at the cutting edge of information technology. After you have completed core studies in programming, databases, systems analysis, and professional IT practice, you will pursue a course of study along one of two streams: computer science or information systems. The computer science stream involves the study of computers and computer programs. You will excel in this stream if you're more technically-minded and want to contribute to the future development and support of computer technology. The information systems stream comprises the study of the direct application of software design and development to the business domain. You will gain an understanding of the principles and techniques involved in the analysis, design, implementation and maintenance of computer systems within a business environment.	Computer Science involves the study of the design, construction and uses of computer systems. It is concerned with the representation of data and data structures in computer systems and the design of algorithms for automatic manipulation of this information by programming languages and machine systems. It is very much concerned with the design and development of hardware and software tools by which computer applications may be developed, but not so much with the applications themselves. It is, however, noted that non-computing elements (such as human interface or psychological aspects) can often dictate the level of success of computing systems. At UNSW, particular emphasis is given to comprehension of the basic principles behind computing tools, operating systems, compilers and translators, and computer hardware.

Course learning outcomes				<p>The course aims to produce graduates who are able to apply, in the context of any organisation, the knowledge and skills required of:</p> <ul style="list-style-type: none"> • information technology professionals who develop systems from first principles • computing specialists for technical research careers, both in industry and academia, or • data scientists who interrogate complex datasets 		
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Bachelor of Business (WSU 2786)

	WSU	MQ	Wollongong	UTS	USydney	UNSW
Aims	<p>The Bachelor of Business harnesses your energy and passion for success. This degree gives you the knowledge to create a career as a business professional. Whether you wish to pursue a corporate role in a global enterprise or start your own business, this course will provide you with the skills to do it. The BB begins with four core units: Financing Enterprises, Enterprise Innovation and Markets, Enterprise Leadership, and Enterprise Law. These units provide you with the essential business knowledge that will be the platform for your career and equip you with the academic skills that will underpin your success in the degree. You will then undertake four professional units. The professional units are where you begin to shape your future in one of three core business areas: Money, Markets or Management. By learning core business skills within the context of your chosen future you will develop new skills and enhance your employability. Units in the professional core will teach you to plan your career, innovate and analyse. You will also be able to explore and apply your skills and knowledge in a work-based learning unit.</p>	<p>Offers a BCommerce not Business</p>	<p>The Bachelor of Business offers a broad education across all key aspects of the business environment including accounting, economics, finance, management and marketing. You can tailor your studies according to your interests by choosing subjects from a particular Business discipline, or you may combine Business electives with subjects from other faculties. The selection of subjects can be made in conjunction with a Course Co-ordinator. A compulsory capstone subject is undertaken in the final year.</p>	<p>The Bachelor of Business offers you a sound background in all areas of business through common core subjects, plus in-depth knowledge in one or more chosen areas of interest. With an extensive range of majors, extended majors, sub-majors, and electives, you have the flexibility to build on your interests and add specialisations. A compulsory first year subject, Integrated Business Perspectives IBP has been developed in response to calls from industry wanting graduates with a thorough understanding of how different business elements work together. The Business Internship subject has been included as an elective option in the following Bachelor of Business majors:</p> <ul style="list-style-type: none"> • Economics and Extended Economics • Finance and Extended Finance • Management and Extended Management • Marketing and Extended Marketing • International Business 	<p>Offers a BCommerce not Business</p>	<p>Offers a BCommerce not Business</p>

Course learning outcomes			<p>Students graduating from the Bachelor of Business will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate core knowledge of business and organisations. 2. Effectively communicate orally and in writing. 3. Critically analyse business and organisational issues in local, national and international contexts. 4. Demonstrate responsible judgement in decision making. 5. Work effectively with others on shared goals. 6. Use relevant technology for professional purposes. 7. Demonstrate independent learning 			
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4. Student experience in cognate fields based on national QILT data*

	Creative Arts	Education	Architecture & Building	Business & Management
WSU	Qual Ed Exp: 78.6% Teaching Qual: 81.2% Learner engagement: 64.3% Learning resources: 87.5% Student support: 70% Skills dev: 81.6%	Qual Ed Exp: 74.7% Teaching Qual: 82.5% Learner engagement: 55.1% Learning resources: 88.5% Student support: 68.6% Skills dev: 80%	Qual Ed Exp: 80.5% Teaching Qual: 82.7% Learner engagement: 72% Learning resources: 87.8% Student support: 74.3% Skills dev: 84.7%	Qual Ed Exp: 75.4% Teaching Qual: 75.1% Learner engagement: 62.2% Learning resources: 86.1% Student support: 66% Skills dev: 79.2%
Macquarie	X	Qual Ed Exp: 77% Teaching Qual: 79% Learner engagement: 54.6% Learning resources: 88.4% Student support: 65.5% Skills dev: 84%	Qual Ed Exp: 63.3% Teaching Qual: 60% Learner engagement: 46.7% Learning resources: 89.7% Student support: L/N Skills dev: 66.7%	Qual Ed Exp: 75.3% Teaching Qual: 76.2% Learner engagement: 58.7% Learning resources: 87.6% Student support: 68.4% Skills dev: 75.6%
Wollongong	Qual Ed Exp: 89.2% Teaching Qual: 85.2% Learner engagement: 77.2% Learning resources: 90% Student support: 80.8% Skills dev: 84%	Qual Ed Exp: 87.4% Teaching Qual: 89.4% Learner engagement: 76.6% Learning resources: 93.5% Student support: 80.1% Skills dev: 89.7%	X	Qual Ed Exp: 78.8% Teaching Qual: 80.6% Learner engagement: 62.4% Learning resources: 91.2% Student support: 77.7% Skills dev: 79.8%
UTS	Qual Ed Exp: 78.2% Teaching Qual: 80.9% Learner engagement: 69.8% Learning resources: 88.1% Student support: 66.6% Skills dev: 82.9%	Qual Ed Exp: 75.4% Teaching Qual: 76.9% Learner engagement: 62.3% Learning resources: 71.5% Student support: 69.51% Skills dev: 79.7%	Qual Ed Exp: 75.9% Teaching Qual: 77.7% Learner engagement: 70.8% Learning resources: 75.3% Student support: 66% Skills dev: 80.8%	Qual Ed Exp: 73.9% Teaching Qual: 74.8% Learner engagement: 63.9% Learning resources: 87.2% Student support: 63.5% Skills dev: 78.9%
Sydney	Qual Ed Exp: 79.6% Teaching Qual: 83.3% Learner engagement: 64.1% Learning resources: 79.1% Student support: 72.7% Skills dev: 76.2%	Qual Ed Exp: 81.4% Teaching Qual: 84.8% Learner engagement: 70.5% Learning resources: 83.5% Student support: 61.5% Skills dev: 84.8%	Qual Ed Exp: 65.5% Teaching Qual: 71.2% Learner engagement: 67.4% Learning resources: 77.5% Student support: 57.3% Skills dev: 78.9%	Qual Ed Exp: 70.3% Teaching Qual: 73.9% Learner engagement: 56.6% Learning resources: 82.8% Student support: 58.6% Skills dev: 75.2%
UNSW	Qual Ed Exp: 71.7% Teaching Qual: 76.5% Learner engagement: 63.5% Learning resources: 77% Student support: 65.1% Skills dev: 75.9%	Qual Ed Exp: 67.9% Teaching Qual: 70.5% Learner engagement: 55.2% Learning resources: 76.5% Student support: 66.2% Skills dev: 75.4%	Qual Ed Exp: 79.1% Teaching Qual: 81.2% Learner engagement: 67.5% Learning resources: 67.9% Student support: 64.1% Skills dev: 83%	Qual Ed Exp: 71.8% Teaching Qual: 71.7% Learner engagement: 63% Learning resources: 82.1% Student support: 63.3% Skills dev: 73.6%

*Based on 2015 + 2016 Student Experience Surveys

5. Graduate employment based on national QILT data*

	Creative Arts	Education	Architecture & Building	Business & Management
WSU	FT employment: 43.7% Overall employment: 82.9% FT study: 20.3% Median salary: \$45000	FT employment: 72.1% Overall employment: 88.9% FT study: 76.2% Median salary: \$53400	FT employment: 85.8% Overall employment: 91.5% FT study: 12% Median salary: \$52000	FT employment: 64.8% Overall employment: 86.9% FT study: 11.2% Median salary: \$50000
Macquarie	FT employment: 65.5% Overall employment: 88.6% FT study: 23.3% Median salary: L/N	FT employment: 72.7% Overall employment: 95.3% FT study: 4.7% Median salary: \$60000	X	FT employment: 72.8% Overall employment: 88.4% FT study: 9.5% Median salary: \$53000
Wollongong	FT employment: 44% Overall employment: 81.1% FT study: 40% Median salary: L/N	FT employment: 73.7% Overall employment: 97% FT study: 6.9% Median salary: \$61000	X	FT employment: 79.7% Overall employment: 93.7% FT study: 10.9% Median salary: \$50000
UTS	FT employment: 58.1% Overall employment: 87.7% FT study: 16.8% Median salary: \$45000	FT employment: 66.8% Overall employment: 91.5% FT study: 4.0% Median salary: \$61000	FT employment: 68.7% Overall employment: 89.7% FT study: 24.8% Median salary: \$50000	FT employment: 74.1% Overall employment: 90.9% FT study: 8.1% Median salary: \$52200
Sydney	FT employment: 51.1% Overall employment: 86.9% FT study: 32.4% Median salary: \$46500	FT employment: 73.2% Overall employment: 93.4% FT study: 6.5% Median salary: \$61000	FT employment: 74% Overall employment: 86.7% FT study: 16.1% Median salary: \$45000	FT employment: 79.8% Overall employment: 89.8% FT study: 21.3% Median salary: \$58000
UNSW	FT employment: 61.6% Overall employment: 87.4% FT study: 19.2% Median salary: \$50000	FT employment: 55.1% Overall employment: 92.5% FT study: 10.8% Median salary: \$64000	FT employment: 82.2% Overall employment: 90.2% FT study: 11.4% Median salary: \$54600	FT employment: 82.7% Overall employment: 90.9% FT study: 10.1% Median salary: \$57000

*Based on 2015 + 2016 Student Experience Survey

Further information on this appendix is available from [Dr Tai Peseta](#) - Learning Transformations Portfolio.

Appendix 3: Market Research Information

This appendix has edited extracts from two market research studies commissioned by the University; summarising those findings that have implications for curriculum design. Behavioural Architects (BA) looked into how students select university courses. Strativity examined the student experience.

How students choose universities and courses

The key objective of this study was to develop an in-depth understanding of students' behaviour and decision-making in relation to courses and university, with insights that can be used to inform a strategy to increase student consideration and enrolment. The study used:

- online self-ethnography (video diaries) with High School and University students in Greater Western Sydney ($n = 61$)
- contextual Interviews with High School and University students in Greater Western Sydney ($n = 18$).

Included in the study were questions about:

1. How people think about their future
2. How people choose courses and universities
3. Conceptions of what WSU could offer.

The following insights / themes emerged.

Futures

Early ideas about futures are shaped by highly salient people or experiences – 'That looks like fun' or 'I'd like to be that person'. As people develop through school, they begin to learn about what they are good at and what they are less good at – early dreams become modified as new anchors and points of reference become important.

As students make HSC decisions, they experience a far greater weight of pressure and uncertainty. The question arises about what they are going to do to earn a living. However, rather than negate this worry, it might be more useful to consider the worry and anxiety that people experience as expressive of a need to know and ask the right questions.

Uncertainty and choice overload

The early certainty of childhood career choices is replaced by the uncertainty that goes with overwhelming choice and the fear of getting it wrong. One of the implications from this for curriculum design is choice overload. Not only can too much choice make decisions difficult but it also adversely affects satisfaction with subsequent choice.

There is an opportunity for WSU to help channel students' worry and uncertainty into a much more positive experience of asking the right questions at the right time.

Choices of university and course

Complexity and anxiety

School students are making decisions about courses and university study in a context that is highly stressful and overwhelming.

- Things happening around that time: preparing and sitting HSC exams, turning 18, learning to drive etc.

- Pressure to know what you're going to do after school - injunctive social norms dictate that they must know what they want to do by that time
- Uncertainty of the future after school – this is a big change in their lives, where they are moving away from the predictability and structure of school.
- Students are confronted by a context of choice overload, and the perceived finality of their decision makes choosing even more difficult.
- They perceive this decision as 'final' – it's going to dictate what they do with the rest of their lives.
- The sheer amount of choice results in choice overload, and the abundance of information available exacerbates the feeling of overwhelm.

The stressful and overwhelming context means that students are making decisions in an environment that is not ideal to facilitate carefully considered decision-making.

Many students were unsure of what they wanted to do, and this is reflected in the behaviour of some who changed their minds frequently and submitted preferences for different courses at different universities.

How students choose

Students relied on two key resources to help narrow down their choices: the UAC Guide and University websites. They also made use of University brochures and guides, online forums, jobs websites and employment data.

There is a contrast between the pressure that higher ATAR students placed on themselves and the more 'laid back' approach that lower ATAR students took to deciding their preferences. Generally, lower ATAR students conducted less individual research prior to submitting their preferences compared to higher ATAR students who looked at many different sources of information and spoke to many different people.

Lower ATAR students were more reliant on their friends' advice and what their friends were doing. Students who were more reliant on their friends appeared to lack strong ambitions for what they do at university. While they knew they wanted to go to university, their choice of what to study was almost secondary.

Students change their preferences as a strategy to enhance their chances of getting an offer. For most students who changed their ATAR, it was a defensive approach, moving lower ATAR courses higher on the list to increase their chances of getting into university, sometimes leading to feelings of regret.

For most students, university reputation is the most important consideration and served as a shortcut for the quality of education and employability. This is a barrier for WSU as this shortcut leads students to make conclusions about the university that are inaccurate.

Higher ATAR students who have gone to Western Sydney University, had early offers or guaranteed places, and they seemed to weight the support offered through the Academy more than reputation.

Non-school-leavers

Like many school leavers, many non-school leavers were also unsure of what they wanted to do at university. The reasons for non-school leavers taking time off after high school were varied, including being unsure of career path, low motivation for further study, and illness.

Non-school leavers looked at the same resources and spoke to mostly the same people as school leavers.

Figure A3.1 (from the BA presentation) shows that WSU is not known for the way it frames its identity as reflected in the curriculum offerings.

University	Factors that make up reputation						
	ATARS	Campus	Framing of Identity	Anchors	Social Norms	Saliency	Relative position
UTS	✓	✓	✓	✓	✓	✓	✓
UNSW	✓		✓	✓	✓	✓	✓
MACQ		✓			✓	✓	✓
WSU		✓					

Figure A3.1. Summary of factors in WSU and local competitors' reputation

Response to concepts of what WSU could offer

Future proofing was expected from all universities. The word 'new' primed students that change is coming, and that the university is adapting and developing into the future. "Technology", "innovation", and "accessibility" are key priming words. Technology primes students for a modern, futuristic, and cutting edge learning experience. The vertical campus was surprising to many students and builds anchors for WSU being a university of the future that takes an innovative approach to learning, and is easily accessible.

Students' existing framing of the university is as a stepping-stone towards a specific job. The focus on the 'softer skills' was seen to be at the exclusion of the technical skills that are essential for some jobs. The idea of sharpening of the mind was too abstract for many to appreciate.

Most students didn't connect with the concept of Citizen Scholar as it was too abstract. Because students' existing framing of university is about getting a job, it was difficult for them to fully appreciate the significance of the Citizen Scholar concept which requires them to reframe what they would go to university for.

Industry partnerships were surprising and impressive to students. Partnerships with Google, PWC, and KPMG provide authority to WSU as being a highly regarded university in industry.

Students connected with the framing of WSU as an institution that welcomes everyone no matter their background.

The link between Western Growth and better preparing students for industry will be key and most important to students and the people in their support networks.

The student experience

The Strativity study focused on the experience of current students, analysing this by the stage of their academic journey (decide, apply, enrol, study) and by student group (domestic undergraduates, international students, College students, postgraduate students). The study involved 140 interviews with students of all types. The aim was to identify where students make key decisions about selecting and course; what makes them likely to continue or drop out.

Decide

Parents, universally, play more than a supportive and guiding role; they are a stakeholder in their child's education. Some parents may be prescriptive about what course or career to pursue; others just want what is best for their child.

There is an ongoing cycle of information, influence and inspiration that shapes students' decisions. A strong sense of self helps. Still, they don't always get it right and find they need to change direction.

The College pathway is not a speed bump. It gives students an edge. Beyond access to university for low or no ATAR students, College helps them build the clarity and commitment they need to succeed. By instilling discipline and focus through course load and teacher attention, it is much more than a wayside stop.

Studying overseas is a pathway to greater opportunity. International students want to study here because the degree is more valuable than a local one; it offers the possibility of future work with higher wages especially if extended family is already here to provide support.

Some students are continuing into graduate studies towards a career goal. Mature-age post graduate students are driven to either advance their career or reinvent themselves.

Apply

Applying is straightforward but waiting to find out about a place is stressful. Once students have applied, they enter a tense waiting game. The anxiety about what they will do if they don't get a place is wiped out by the offer. An early offer is a golden ticket giving students a head start to prepare for university.

Enrol

Undergraduate students find enrolment complicated and they need help to complete it. An online system laden with jargon, confusing subject and unit selections and the number of choices and steps all combine to overwhelm them.

It is hard to balance the timetable against other commitments. So when students select their classes they prefer to consolidate their time on campus. This desire is motivated by their need to work, commitments to family and other interests, and their preference to minimise the commute time.

Student Central is a valued lifeline for all students while they are getting to know the university systems. Online chat and step-by-step guides help but there is no replacing a friendly and helpful voice for those who feel lost in unfamiliar terrain.

For postgraduate students, economic concerns mean the decision to study is highly considered. The decision to delay entering the workforce, or to return to further study has significant financial impacts. Accumulating debt, more established lifestyles to support and relationships to navigate all add to the burden.

Study

For many students, university is now transactional. University holds a specific place in students' lives. Like a job, they commute, study and go home. They treat the course they buy more as a service to be consumed.

Technology is not considered a replacement for face-to-face classes. Students expect recordings of lectures and value them as a safety net and study aid. However, face-to-face classes are essential to help them learn and for engagement with their professors and other classmates.

Discontinue

Discontinuing a course begins long before the marks are in. On the university side, students who don't have friends can struggle with the pressure and expectations of their course. The more hands-off teaching style offers little support. And the resulting isolation begins a spiral that can lead to failure.

'Didn't fit' is the number one reason students discontinue their course. On the student side, the decision to discontinue a course is not taken on a whim. The most commonly cited reason is "fit" – the commute was too long, the course wasn't what they thought it would be, or they had a change of heart about their career direction.

Failure is scary for everyone but even more so for international students. No one sets out to fail their course. However, international students face additional barriers, in particular, convincing their parents to fund moving countries to study and the potential visa impact of failure ramp up the pressure.

When a course wasn't what they thought it would be, students can be thrown back into the decision cycle. They seek information, influences and inspiration to find a new path that can then lead them back to WSU.

Questions raised

How do we create curricula that:

- make university more than transactional?
- provide pathways that allow students to change options without feeling they have failed?

Implications of market research for curriculum renewal

To encourage more students to enrol in and stay in our courses, the curriculum structure should:

- present potential students with degree options linked to employment opportunities, and which differentiate WSU from other universities they might be considering
- keep the basic choice between types of degree simple and easy to identify – offer a limited set of degree types ranging from accredited degrees that are strongly aligned with particular professions (e.g. Medicine and Nursing) to general degrees where students can select specialisms as they progress (e.g. a general BSc or BA degree).
- provide tools and services to assist students in identifying study pathways and in mapping out alternative paths both before and during their study.

Further information on this appendix is available from [Michael Burgess](#) - The Student Experience Office and [Frances Holland](#) - Office of Marketing and Communication.