Economics Learning Standards
for
Australian Higher Education

Prepared by: Economics Learning Standards Working Party

Funded by: Australian Government Office for Learning and Teaching

Australian Business Deans Council

Supported by: Economics Society of Australia

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More information about this project can be found at:
<www.economicslearningstandards.com>

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Foreword

The Australian Government commissioned the development of economics learning standards for Australian higher education under the auspices of an Office for Learning and Teaching (OLT) Fellowship. The development of these learning standards has the support of the Australian Business Deans Council, which also provided funding, and the Economics Society of Australia.[1]

To this point, learning standards for higher education in Australia have been developed collaboratively under various auspices for a number of disciplines, including accounting, marketing, law, engineering, geography, history and chemistry.

A working party of academic economists was appointed in October 2012 to develop the learning standards for Australian programs of study in Economics at Bachelor and Masters (Coursework) levels. The Economics Learning Standards Working Party consulted extensively with academic and other professional economists, and received high-level advice from an expert advisory group comprising senior professional economists and representatives of peak bodies from industry and higher education.

I wish to thank especially the following people for their valuable contributions to the process of developing these learning standards:

> Ms Siobhan Lenihan, Australian Government Office for Learning and Teaching
>
> Associate Professor Mark Freeman, ABDC Scholar
>
> Professor Allan Layton, Chair of the Expert Advisory Group
>
> Members of the Economics Learning Standards Working Party and the Economics Expert Advisory Group whose names are listed in Appendices B and C
>
> Ms Sally Purbrick-Illek, Project Officer, Griffith University.

Professor Ross Guest

Chair, Economics Learning Standards Working Party

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[1] The views in this document do not necessarily reflect the views of the Australian Government Office for Learning and Teaching, the Australian Business Deans Council or the Economics Society of Australia.

1. Introduction

Under the Tertiary Education Quality Standards Agency (TEQSA) legislation, all higher education institutions are required to be able to demonstrate: (i) that their internal processes for the design and approval of each degree take account of external standards, and (ii) that the outcomes achieved by their students are benchmarked against external standards. Learning standards such as those provided in this document, developed through extensive consultation with the discipline community, provide one reference point for benchmarking. The Economic Learning Standards are, however, guidelines and do not preclude the use of alternative reference points.

2. Background

This section provides background on the learning standards agenda in Australia and overseas. Refer also to Guest (2013).

Under the *Tertiary Education Quality and Standards Agency Act 2011* (the TEQSA Act), TEQSA is charged with evaluating the performance of higher education providers against five domains of standards: Provider Standards, Qualifications Standards, Teaching and Learning Standards, Information Standards and Research Standards. Only the first two of these standards had been specified as at 11 October 2013; they are collectively known as the Threshold Standards.

One primary requirement of the Threshold Standards is that degree programs must demonstrate that they meet the specifications of the Australian Qualifications Framework (AQF).[2] Threshold Standards also include a number of other requirements in relation to learning standards that are relevant for the economics curriculum. For example, "the academic standards intended to be achieved by students and the standards actually achieved by students in the course of study are benchmarked against similar accredited courses of study offered by other higher education providers" (Australian Government, 2011, p.17).[3]

Although not distinguished in the current TEQSA Act, it appears that learning standards will be separated from teaching standards. The Government has defined learning standards as "the explicit levels of attainment required of and achieved by students and graduates, individually and collectively, in defined areas of knowledge and skills" (Department of Education, Employment and Workplace Relations ((DEEWR), 2011, p.3).[4]

The Higher Education Standards Panel (HESP) is a body established under the same legislation as TEQSA but independent of TEQSA. The primary role of HESP is to recommend to the Minister any new standards (e.g. Teaching and Learning Standards) or variations to

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[2] Paragraph 1.1, Section 1, Chapter 4: Qualification Standards, *Higher Education Standards Framework (Threshold Standards) Act 2011*. See <www.comlaw.gov.au/Details/F2013C00169/Html/Text#_Toc330548954>
[3] Paragraph 5.5, Chapter 3: Provider (Course Accreditation) Standards, *Higher Education Standards Framework (Threshold Standards) Act (2011)*, <www.comlaw.gov.au/Details/F2013C00169/Html/Text#_Toc330548951>
[4] Teaching standards relate to the process or delivery of education, while learning standards relate to student outcomes: what students know and can do (DEEWR, 2011, p.2).

existing standards. HESP is required to review the existing Threshold Standards by the end of 2013. Indications from HESP suggest that, while its review may identify *generic* learning standards, it will not attempt to develop learning standards for particular disciplines such as economics, nor is it explicitly required to do so under the TEQSA Act.

2.1: International learning standards in economics

The UK's Subject Benchmark Statements have been developed since 2000, with the Economics Benchmark Statement being revised in 2007 for bachelor degrees. The Economics Statement specifies skills and "transferable" (or "key") concepts. Threshold standards are specified in addition to typical learning outcomes. The UK Benchmark Statements are produced under the auspices of the Quality Assurance Agency (QAA) (the British counterpart to TEQSA).

The OECD's Assessment of Higher Education Learning Outcomes (AHELO) Feasibility Study, a pilot project, was completed in 2013.[5] Its aim was to assess the feasibility of developing an internationally accepted framework for measuring final-year bachelor students' capacity to use, apply and act on the knowledge and reasoning they have gained from their degrees. The economics strand of this project was being managed by the Australian Council of Educational Research (ACER), in collaboration with the Educational Testing Service, on behalf of the OECD. A related prior project, Tuning Educational Structures in Europe, arose to complement the European Bologna Process.[6] The Tuning and AHELO projects have been harmonised to some extent through the work of the Tuning AHELO Experts Group (OECD, 2009).

The learning outcomes from the UK and AHELO standards projects are provided in Appendices E and F respectively.

2.2: Discipline-specific learning standards in Australia

The Australian Government funded the Learning and Teaching Academic Standards (LTAS) project in 2009. This project developed a set of threshold learning outcomes for 11 disciplines,[7] mostly at bachelor degree level but some at masters degree level. From the discipline cluster of business, management and economics, the discipline of accounting was chosen in February 2010 as the first discipline to produce a set of learning standards; these were published in December 2010 (Hancock et al., 2010). The LTAS project was completed in July 2011. The Australian Business Deans Council (ABDC) is extending the work of the LTAS project[8] through a discipline scholar[9] to guide the gradual development of standards in other business disciplines. The first of these disciplines was marketing for which the final standards statement was released in September 2012.[10]

The ABDC decided in August 2012 to sponsor the development of standards for economics. This decision was made in part to leverage parallel work in 2013 under the auspices of the

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[5] The final AHELO reports are available at <www.oecd.org/edu/skills-beyond-school/ahelodocuments.htm>.

[6] Bologna Process Web site:<www.ond.vlaanderen.be/hogeronderwijs/bologna/>.

[7] Available at <disciplinestandards.pbworks.com/w/page/52657697/FrontPage>.

[8] Details of the ABDC standards agenda are at <www.abdc.edu.au/3.74.0.0.1.0.html>.

[9] The Discipline Scholar is Associate Professor Mark Freeman, The University of Sydney.

[10] See *Academic Standards for Marketing in the Australian Higher Education Context* at <www.marketinglearningoutcomes.com>.

Office for Learning and Teaching[11] through a National Senior Teaching Fellowship[12], the purpose of which was to lead the process of developing learning standards in economics. This process was endorsed by the Economics Society of Australia (ESA).

2.3: The meaning of 'learning standards'

Learning standards describe the *minimum* learning outcomes that graduates are expected to have attained. They are not intended to limit the scope or depth of economics programs.

'Standards' do not imply 'standardisation'. A statement of learning standards does not preclude other learning outcomes that providers may specify to differentiate their offerings – indeed diversity among academic programs is desirable. The TEQSA Act states: "Diversity in Australia's higher education system, both within and between higher education providers, is important to meet diverse and changing student, employer and community expectations" (Australian Government, 2011, p.8).

Discipline-specific learning standards need to be consistent, under the TEQSA legislation, with the Australian Qualifications Framework (AQF) which "provides the standards for Australian qualifications".[13] The AQF specifies generic descriptors of learning outcomes in terms of knowledge, skills and application abilities for ten levels of post-secondary qualifications including bachelor and masters degree graduates.[14]

2.4: The process for developing the Economics Learning Standards

Extensive consultation with the economics discipline community has occurred at every stage of the process of developing these Economics Learning Standards. For detail on the consultative process see <www.economicslearningstandards.com>. The process and outcomes were also guided by an Expert Advisory Group (Appendix C). A Working Party, consisting primarily of academic economists, has developed the standards iteratively following feedback through the consultation process. Membership of the Working Party (Appendix B) was determined by expressions of interest and appointment by a selection panel.

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[11] The OLT is an office of the Department of Industry, Innovation, Science, Research and Tertiary Education.
[12] The Fellowship is held by Professor Ross Guest of Griffith University, the Chair of this working party.
[13] Australian Qualifications Framework July 2011, p.9, available at <www.aqf.edu.au>.
[14] All qualifications offered by a provider must fully comply with the AQF by 1 January 2015.

3. Aims and scope – Economics Learning Standards

In addition to assisting institutions in satisfying TEQSA requirements (including AQF compliance), these learning standards provide guidance to a range of national and international stakeholders:

- academics designing new degree programs or majors with substantial economics content
- academics who want to benchmark their existing economics programs to these standards
- employers who want to know the set of skills and knowledge that have been attained by prospective employees with an economics qualification
- prospective students and secondary school course advisors who want to know what economics is about and the core learning outcomes that students can expect to attain
- the wider discipline community who wish to have assurance that economics learning outcomes reflect the evolving skills required for workplace practice and further learning.

3.1: What constitutes an economics program?

These learning standards apply to a program of study badged as an economics program. An economics program to which these standards apply should specify knowledge content at progressive levels of depth in the fields of microeconomics, macroeconomics and related data analysis. This would typically be the case for a Bachelor (or Master) of Economics, or Bachelor (or Master) of Commerce/Business degree with a major in economics. These programs may carry a reference to economics in the degree nomenclature, such as Bachelor of Commerce (Economics). Other degree programs may include a number of economics units of study which may constitute a minor rather than a major. Typically the depth and breadth of knowledge in an economics minor would *not* warrant coverage by the learning standards in this document.

Economics Learning Standards are provided at both bachelor level (AQF Level 7) and masters (coursework) level (AQF Level 9). 'Masters level' applies to both entry-level masters degrees and advanced masters degrees. Entry-level masters degrees are typically taken by students who do not have a first degree in economics. Refer to Appendix D for a mapping of the Economics Learning Standards to the AQF Learning Outcomes. The standards presented here do *not* apply to research masters or honours degree programs in economics.

4. Guiding principles – Economics Learning Standards

The Working Party agreed upon the following five principles to guide the development of these learning standards:[15]

1. Learning standards will reflect the minimum learning outcomes that all graduates are expected to have attained. Additional learning outcomes and those of an aspirational nature are outside the scope of the learning standards.
2. Learning standards will recognise both diversity among economics programs and the need to allow learning outcomes to be compared across institutions and student cohorts. The standards will not prescribe a set of topics, learning activities or assessment items.
3. Learning standards will be consistent with AQF standards and will be informed by international standards.
4. The process will be collaborative, evidence-based, transparent and iterative, incorporating feedback from the discipline community including academics and other economists from the private and public sectors.

5. The nature of economics as a discipline

Economics has been defined as "the study of the factors that influence income, wealth and well-being. Its aim is to analyse and understand the allocation, distribution and utilisation of resources and their consequences for economic and social well-being".[16] Resources are usually scarce, which implies that choices must be made about how they are allocated. Much of economics focuses on rigorous analytical frameworks for making such choices.

More broadly, economics provides analytical methods to address problems and issues in society. Analytical methods refer to theoretical models and empirical tools for explaining and predicting both microeconomic and macroeconomic behaviour. *Microeconomics* is concerned with the behaviour of individual consumers, workers, firms, markets and industries, and the way they interact. It is also concerned with the role of government regulation in moderating the behavior and interactions among these groups. *Macroeconomics* refers to the analysis of the behaviour of economy-wide phenomena such as unemployment, inflation, economic growth, the distribution of income and wealth, financial markets, exchange rates, international trade in goods, services and capital, and the role of government policies, including fiscal and monetary policies, in influencing these phenomena.

Economic models are stylised and simplified versions of reality based on assumptions. They are generally based on the premise that people respond to incentives when faced with alternatives, which allows for the analysis and prediction of behaviour. Choosing the appropriate model is often a matter of judgment, and recognising its limitations in addressing a given problem is very important.

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[15] These principles were adapted from the guiding principles used in the development of learning standards for the marketing discipline, available at <www.MarketingLearningOutcomes.com>.
[16] UK Benchmark Statement in Economics (2007) p.1.
<www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/Economics.pdf>.

Much public policy is informed by economic analysis – microeconomic and macroeconomic. Policies might include, but are not limited to: environmental, public infrastructure, transport, unemployment, health, education, competition, monetary, taxation and welfare policies. In policy decision-making, much economic thinking is predicated on value judgments, implicitly or explicitly; the identification of these value judgments is important in analysis and policy application.

New economic ideas and principles emerge as society changes, as analytical methods improve and as new knowledge is discovered. The behaviour of agents and groups in society is studied in light of the evolution of culture, social norms, institutions and laws. Alternative schools of economic thought coexist and the future of economics remains open to new approaches and developments.

As a social science, economics draws on and contributes to a range of disciplines including psychology, politics, philosophy, sociology, geography, history, law, environmental science and public health. It also provides foundational principles for business and commerce disciplines.

6. The Economics Learning Standards

The Economics Learning Standards are defined in terms of a set of minimum learning outcomes. Bachelor and masters learning standards are distinguished in terms of knowledge and skills and their application. Compared with bachelor graduates, masters graduates are expected to have attained knowledge that is more complex, more integrated and more inclusive of recent developments in the discipline. They should be able to analyse more critically and reflectively, communicate to wider audiences, and be able to plan and execute a research-based project or piece of scholarship.

6.1: The learning domains

The five learning domains of Economics Learning Standards (refer Figure 6.1 overleaf) are:

- knowledge
- application
- data analysis
- communication
- reflection.
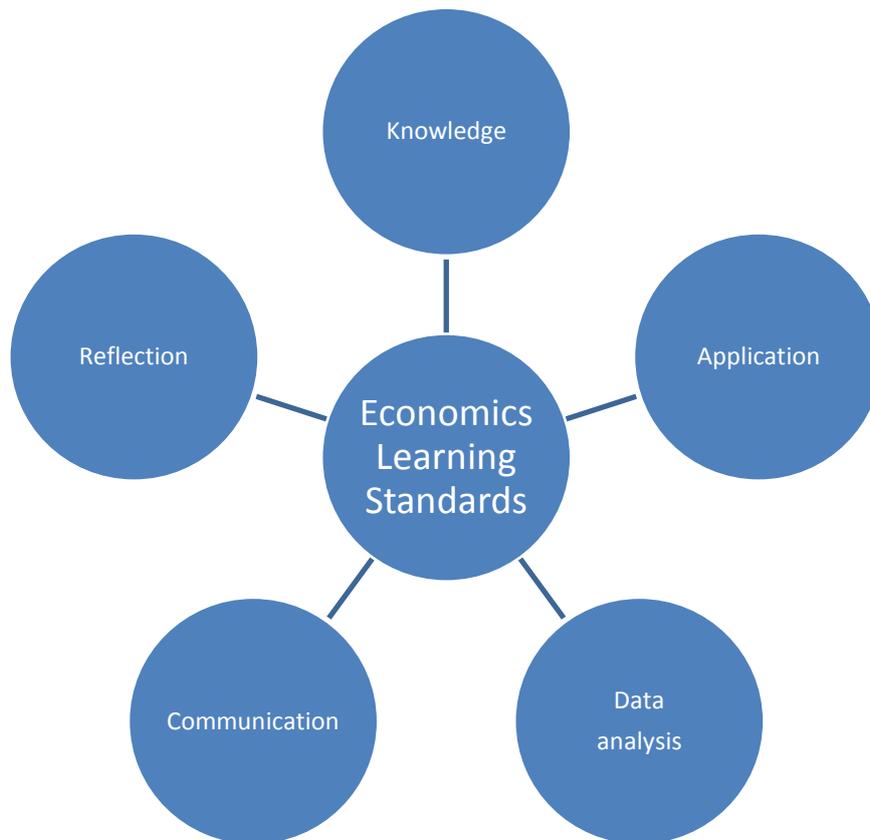
6.2: The learning outcomes

Although the learning outcomes are listed separately, the work of economics graduates often draws on several of the learning outcomes simultaneously.

The domains and learning outcomes of the Economics Learning Standards are summarised in Table 6.1 overleaf.

Table 6.1:   Summary of the Economics Learning Standards

Learning domain	Learning outcomes	
	Bachelor Degree	**Masters Degree**
Knowledge	Bachelor graduates will be able to identify, coherently explain and synthesise core economic concepts	Masters graduates will be able to identify, coherently explain and synthesise core and advanced economic concepts, including recent developments in the discipline
Application	Bachelor graduates will be able to: • frame problems in terms of core economic concepts and principles • apply economic reasoning and analytical skills, in order to make informed judgments and decisions	Masters graduates will be able to: • frame and critically analyse problems in terms of core and advanced economic concepts and principles • apply advanced economic reasoning and analytical skills, including quantitative techniques where appropriate, in order to make informed judgments and decisions • plan and execute a research-based project
Data analysis	Bachelor graduates will be: • able to use economic data to address typical problems faced by economists • aware of, and able to implement, basic empirical techniques and interpret the results	Masters graduates will be able to: • select and apply an appropriate empirical method to address typical problems faced by economists • critically evaluate the results
Communication	Bachelor graduates will be able to present a clear and coherent exposition of economic knowledge, ideas and empirical evidence both orally and in writing, individually or in collaborative contexts	Masters graduates will be able to communicate complex ideas clearly and coherently, in written form and interactive oral form to expert and non-expert audiences, individually or in collaborative contexts
Reflection	Bachelor graduates will be able to reflect on: • the nature and implications of assumptions and value judgments in economic analysis and policy • interactions between economic thinking and economic events, both historical and contemporary • the responsibilities of economists and their role in society	Masters graduates will be able to reflect on and evaluate: • the nature and implications of assumptions and value judgments in economic analysis and policy • interactions between economic thinking and economic events, both historical and contemporary • the responsibilities of economists and their role in society

6.3: The Economics Learning Standards – Descriptions

Knowledge

Bachelor graduates will be able to identify, coherently explain and synthesise core economic concepts.

Masters graduates will be able to identify, coherently explain and synthesise core and advanced economic concepts, including recent developments in the discipline.

Appendix A provides a list of some core economic concepts.

Example (microeconomics):
Bachelor graduates will be able to explain how the incidence of an increase in the rate of a tax depends on the elasticity of demand and supply, and the implications for economic efficiency.
Masters graduates, in addition, will be able to evaluate alternative types of taxes in terms of efficiency, equity, simplicity and revenue-raising.

Example (macroeconomics):
Bachelor graduates will be able to explain the impact of discretionary fiscal policy in open and closed economies.

Masters graduates, in addition, will be able to discuss debates about discretionary fiscal policy in open and closed economies.

Application

Bachelor graduates will be able to:
- frame problems in terms of core economic concepts and principles
- apply economic reasoning and analytical skills, in order to make informed judgments and decisions.

Masters graduates will be able to:
- frame and critically analyse problems in terms of core and advanced economic concepts and principles
- apply advanced economic reasoning and analytical skills, including quantitative techniques where appropriate, in order to make informed judgments and decisions
- plan and execute a research-based project.

Example (microeconomics):
Bachelor graduates will be able to identify and evaluate the effects of a merger between two firms on the extent of competition in the market(s) in which they operate.
Masters graduates will be able to evaluate these effects by applying a deeper understanding of the economic theory of market competition, such as an ability to apply and interpret indices of market competition, and explain the potential effects on market dynamics.

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Example (macroeconomics):
Bachelor graduates will be able to identify and evaluate possible causes of a change in the rate of unemployment, including changes to labour force participation, and broader economic influences such as government policy and macroeconomic aggregates.

Masters graduates will have a more advanced understanding of unemployment as a labour market outcome, and will be able to discuss debates over the causes of the different types of unemployment.

Data analysis

Bachelor graduates will be:
- able to use economic data to address typical problems faced by economists
- aware of, and be able to implement, basic empirical techniques and interpret the results.

Masters graduates will be able to:
- select and apply an appropriate empirical method to address typical problems faced by economists
- critically evaluate the results.

Example (microeconomics):
Bachelor graduates will be able to obtain and organise data in order to plot and analyse trends in house prices (such as housing starts, housing loans and price history) and interpret the results.
Masters graduates, in addition, will be able to independently select and apply a method to analyse data in relation to the prospects for house prices. They should be able to justify the choice of a particular analytical technique, understand its assumptions and limitations, and critically evaluate the results.

Example (macroeconomics):
Bachelor graduates will be able to analyse changes in levels of average real wages. To do this, they will be able to obtain and organise data, perform analytical procedures such as regression analysis, and interpret the results.
Masters graduates, in addition, will be able to independently select and apply a method for analysing changes in levels of average real wages, justify the choice of the technique, understand its assumptions and limitations, and critically evaluate the empirical results.

Communication

Bachelor graduates will be able to present a clear and coherent exposition of economic knowledge, ideas and empirical evidence both orally and in writing, individually or in collaborative contexts.

Masters graduates will be able to communicate complex ideas clearly and coherently, in written form and interactive oral form to expert and non-expert audiences, individually or in collaborative contexts.

Example (microeconomics):
Bachelor graduates will to be able to produce, individually or collaboratively, a written economic evaluation for a government department of a proposal to deregulate the taxi industry in a capital city. They will be able to present this assessment orally to an audience in a clear and coherent way.
Masters graduates will be able to provide a written assessment of a proposal to deregulate the taxi industry in a capital city for multiple audiences, including professional economists, government ministers and the general public. They will also be able to provide a clear and coherent oral exposition to expert and non-expert audiences.

Example (macroeconomics):
Bachelor graduates will be able to produce, individually or collaboratively, a written assessment of the likelihood of interest rate increases over a six-month period and the effects these would have on various industries and types of households. They will also be able to present this assessment orally to an audience in a clear and coherent way.
Masters graduates will be able to provide a written assessment of the likelihood of interest rate increases over a six-month period for multiple audiences, including professional economists, policy makers, business people and the general public. They will also be able to provide a clear and coherent oral exposition to expert and non-expert audiences.

Reflection

Bachelor graduates will be able to reflect on the:
- nature and implications of assumptions and value judgments in economic analysis and policy
- interactions between economic thinking and economic events, both historical and contemporary
- responsibilities of economists and their role in society.

Masters graduates will be able to reflect on and evaluate the:
- nature and implications of assumptions and value judgments in economic analysis and policy
- interactions between economic thinking and economic events, both historical and contemporary
- responsibilities of economists and their role in society.

Example (microeconomics):
Bachelor graduates will be able to reflect on the assumptions underpinning the theory of perfect competition and their applicability to real-world markets.
Masters graduates will be able to reflect on and evaluate the relevance of market structures to contemporary economies and economic policy.

Example (macroeconomics):
Bachelor graduates will be able to reflect on the debates between different interpretations of economic events, such as the Great Depression of the 1930s or the global crisis of the early 21st century.
Masters graduates will be able to reflect on and evaluate debates about the role and responsibilities of economists in the global crisis of the early 21st century.

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Examples of tasks undertaken by economists

The tasks of economists often draw on more than one, and sometimes all, of the five domains of the learning standards: knowledge, application, data analysis, communication and reflection.

This is illustrated in the following examples of tasks performed by economists, whether individually or in teams. Such tasks require knowledge, application, data analysis, communication and critical reflection on assumptions and value judgments. Hence, new graduates should have the essential training to contribute to this type of work with appropriate guidance from experienced economists in a team:

Exemplar tasks

- conduct a social cost-benefit analysis of a government-funded bicycle path along a river of a major city and provide a consultancy report to a government agency
- analyse and report on the prospects for the housing market in a city, region or country
- contribute to an economic impact study of a decision to deregulate the taxi industry in a major Australian city, including an explanation of the effects on stakeholders as well as the net social impact
- conduct and report economic analysis to inform an environmental impact assessment of a new deep water marina at a popular tourist location
- provide qualitative and quantitative analysis of the effects of a mining boom on the export earnings of the Australian economy
- provide a written critical commentary on Commonwealth and State government budgets
- provide an assessment of the prospects for the major macroeconomic indicators for the Australian economy over a 12-month period
- provide commentary and advice on monetary policy settings in response to a terms of trade shock.

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Appendix A: Economic Concepts for Learning Standards

Below is a list of economic concepts commonly taught in university economics programs; however, other concepts may be regarded as core in some economics programs and any such list may evolve over time. Many of these concepts are described in existing international learning standards statements; the relevant extracts are provided in Appendices E and F. The term 'concepts' here includes ideas and principles.

General economic concepts
1. economic welfare
2. incentives
3. institutions and economic policy
4. market forces, equilibrium and disequilibrium
5. opportunity cost
6. partial and general equilibrium
7. quantitative analysis
8. rationality
9. relative prices
10. short run and long run
11. strategic thinking
12. systems and dynamics
13. uncertainty and expectations
14. valuing the future

Microeconomic concepts
1. comparative advantage and gains from international trade
2. decision-making and choice under constraints
3. gains from exchange between buyers and sellers
4. marginal analysis
5. market failures
6. market structures
7. production and exchange of goods
8. interdependency of markets
9. transaction costs

Macroeconomic concepts
1. aggregate demand and supply
2. distribution of income
3. economic development
4. economic growth and business cycles
5. employment and unemployment
6. exchange rates
7. inflation
8. interest rates
9. international trade and capital flows
10. money
11. national accounting aggregates

Appendix B: Membership – Economics Learning Standards Working Party

Ross Guest (Chair)   Professor of Economics, Griffith Business School, Griffith University

Jeff Borland   Professor of Economics, The University of Melbourne

Helen Cabalu   Head of School of Economics and Finance, Curtin Business School, Curtin University of Technology

Gigi Foster   Senior Lecturer, School of Economics, The University of New South Wales

Mark Freeman   Associate Professor, The University of Sydney Business School and Australian Business Deans Scholar

Cameron Murray   PhD candidate in Economics, The University of Queensland

Rod O'Donnell   Professor of Economics, University of Technology, Sydney

Joanna Poyago-Theotoky   Professor of Economics and Head of School of Economics, La Trobe University

Helen Scarborough   Senior Lecturer in Economics, Faculty of Business and Law, Deakin University

Tommy Tang   Associate Professor in Economics, School of Economics & Finance, QUT Business School, Queensland University of Technology

John Tisdell   Head of School Economics and Finance, University of Tasmania

Appendix C: Membership – Economics Expert Advisory Group

Allan Layton (Chair) Professor of Macroeconomics, Dean, Faculty of Business and Law (2006–2013), University of Southern Queensland; member of Australian Business Deans Council (2006–2013)

Chris Bajada Associate Professor of Economics and Associate Dean (Teaching and Learning), UTS Business School, University of Technology, Sydney; nominee of the Australian Business Deans Council Teaching & Learning Network

Russell Ross Associate Professor of Economics, The University of Sydney; nominee of The Economic Society of Australia, (nominated by President of the ESA, Professor Bruce Chapman of the Australian National University)

Lisa Gropp First Assistant Commissioner, Productivity Commission

Stephen Halmarick Head of Economic and Market Research at Colonial First State Global Asset Management; Chairman, Australian Business Economists

Michael Kidd Professor and Head of Economics and Finance, Queensland University of Technology; nominee of the Australasian Standing Committee, Econometric Society

Michael Knox Chief Economist and Director of Strategy, RBS Morgans

Brian Parmenter Principal, ACIL Allen Consulting (and, previous to that, Chair of Qld Competition Authority).

Appendix D: Mapping of the Economics Learning Standards to AQF Learning Outcomes

	Bachelor		Masters	
	Economics Learning Standards	**AQF***	**Economics Learning Standards**	**AQF***
Knowledge	Bachelor graduates will be able to identify, coherently explain and synthesise core economic concepts	Graduates of a bachelor degree will have a broad and coherent body of knowledge, with depth in the underlying principles and concepts in one or more disciplines as a basis for independent lifelong learning	Masters graduates will be able to identify, coherently explain and synthesise core and advanced economic concepts, including recent developments in the discipline	Graduates of a masters degree will have: • a body of knowledge that includes the understanding of recent developments in a discipline and/or area of professional practice • knowledge of research principles and methods applicable to a field of work and/or learning
Application	Bachelor graduates will be able to: • frame problems in terms of core economic concepts and principles • apply economic reasoning and analytical skills, in order to make informed judgments and decisions	Graduates of a bachelor degree will have: • cognitive skills to review critically, analyse, consolidate and synthesise knowledge • cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas • cognitive and creative skills to exercise critical thinking and judgment in identifying and solving problems with intellectual independence	Masters graduates will be able to: • frame and critically analyse problems in terms of core and advanced economic concepts and principles • apply advanced economic reasoning and analytical skills, including quantitative techniques where appropriate, in order to make informed judgments and decisions • plan and execute a research-based project	Graduates of a masters degree will have: • cognitive, technical and creative skills to investigate, analyse and synthesise complex information, problems, concepts and theories and to apply established theories to different bodies of knowledge or practice • cognitive, technical and creative skills to generate and evaluate complex ideas and concepts at an abstract level
Data Analysis	Bachelor graduates will be: • able to use economic data to address typical problems faced by economists • aware of, and be able to implement, basic empirical techniques and interpret the results	Graduates of a bachelor degree will demonstrate the application of knowledge and skills: • with initiative and judgment in planning, problem-solving and decision-making in professional practice and/or scholarship • to adapt knowledge and skills in diverse contexts • with responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters	Masters graduates will be able to: • select and apply an appropriate empirical method to address a given question • critically evaluate their results	Graduates of a masters degree will demonstrate the application of knowledge and skills: • with creativity and initiative to new situations in professional practice and/or for further learning • with high-level personal autonomy and accountability • to plan and execute a substantial research-based project, capstone experience and/or piece of scholarship
Communication	Bachelor graduates will be able to present a clear and coherent exposition of economic knowledge, ideas and empirical evidence both orally and in writing,	Graduates of a bachelor degree will have communication skills to present a clear, coherent and independent exposition of knowledge and ideas	Masters graduates will be able to communicate complex ideas clearly and coherently, in written form and interactive oral form to expert and non-expert	Graduates of a masters degree will have: • communication and technical research skills to justify and interpret

	individually or in collaborative contexts		audiences, individually or in collaborative contexts	theoretical propositions, methodologies, conclusions and professional decisions to specialist and non-specialist audiences

•technical and communication skills to design, evaluate, implement, analyse and theorise about developments that contribute to professional practice or scholarship |
| **Reflection** | Bachelor graduates in will be able to reflect on the:

• nature and implications of assumptions and value judgments in economic analysis and policy

• interactions between economic thinking and economic events, both historical and contemporary

• responsibilities of economists and their role in society. | Graduates of a bachelor degree will:

• have cognitive and creative skills to exercise critical thinking and judgment in identifying and solving problems with intellectual independence

• demonstrate the application of knowledge and skills with initiative and judgment in planning, problem-solving and decision-making in professional practice and/or scholarship. | Masters graduates will be able to reflect on and evaluate the:

• nature and implications of assumptions and value judgments in economic analysis and policy

• interactions between economic thinking and economic events, both historical and contemporary

• responsibilities of economists and their role in society. | Graduates of a masters degree will have:

• communication and technical research skills to justify and interpret theoretical propositions, methodologies, conclusions and professional decisions to specialist and non-specialist audiences. |
| * Note: The AQF learning outcome descriptors are categorised as "Knowledge, Skills, and Application of Knowledge and Skills" | | | | |

Appendix E: Extract – UK Benchmark Statement for Economics

This is an extract from the *UK Benchmark Statement for Economics* (QAA, 2007).

4   Subject knowledge and understanding

4.1   To achieve these aims, any single honours degree in economics normally comprises the following elements:

- A coherent core of economic principles. The understanding of these might be verbal, graphical or mathematical. These principles should cover the microeconomic issues of decision and choice, the production and exchange of goods, the pricing and use of inputs, the interdependency of markets, the relationships between principals and agents, and economic welfare. They should also include the macroeconomic issues of employment, national income, the balance of payments, the distribution of income, inflation, growth and business cycles, money and finance. The understanding should extend to economic policy at both the microeconomic and macroeconomic levels. In all these, students should show an understanding of analytical methods and model-based argument and should appreciate the existence of different methodological approaches.

- Relevant quantitative methods and computing techniques. These would include appropriate mathematical and statistical methods, including econometrics. Students should have exposure to the use of such techniques on actual economic, financial or social data, using suitable statistical or econometric software.

- A knowledge and appreciation of the nature, sources and uses of economic data, both quantitative and qualitative.

- Students should also have some knowledge of and an ability to select and apply appropriate methods that the economist might use to structure and analyse such data.

- The applications of economics. Students should have the ability to apply a core of economic principles and reasoning to a variety of applied topics. They should also be aware of the economic principles that can be used to design, guide and interpret commercial, economic, social and environmental policy. As part of this, they should have the ability to discuss and analyse government policy and to assess the performance of the UK and other economies.

4.2   It is recognised that, in both single honours degrees and in many degrees that involve a substantial amount of economics, content will be adapted to suit the nature and objectives of the degree program. In degrees that are not single honours economics, not all the core elements in 4.1 may be covered. It is also recognised that the forms of analysis chosen may differ and may be tailored to best serve the skills that students bring with them into their degree program. It is neither the function

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nor the objective of this subject benchmark statement to prescribe what these forms of analysis might be; this is a matter for institutional choice and decision.

4.3   The following is an indicative list of what the attainments of students might be:

- understanding of relevant mathematical and statistical techniques
- a critical understanding of analytical methods, both theory- and model-based
- appreciation of the history and development of economic ideas and the differing methods of analysis that have been and are used by economists
- ability to apply core economic theory and economic reasoning to applied topics
- ability to relate differences in economic policy recommendations to differences in the theoretical and empirical features of the economic analysis, which underlie such recommendations
- ability to discuss, analyse and evaluate government policy and to assess the performance of the UK and other economies and of the global economy
- understanding of verbal, graphical, mathematical and econometric representation of economic ideas and analysis, including the relationship between them
- appropriate techniques to enable manipulation, treatment and interpretation of the relevant statistical data, may also be relevant.

5   Subject-specific skills and other skills

5.1   Some of the attributes that a graduate in economics possesses are generic and not specific to the study of the subject. Their enhancement would be part of any degree program. These would include general intellectual skills such as literary and information-processing skills, as well as interpersonal skills, such as communication. Economics degree programs, therefore, provide a learning environment that facilitates and encourages the development and use of such skills.

5.2   There are three elements in the training of an economics graduate that provide them with a coherent framework of thinking that is readily transferable and applicable to decision-making in a wide range of areas. These elements are a set of subject-specific skills; a conceptual framework that offers a guide to good decision-making; and the general, but crucial, skill of numeracy.

Subject-specific skills

5.3   Economics graduates also possess other subject-specific but highly transferable, rigorous skills. This transferability is evidenced by the wide range of careers into which graduates in economics move. The development of these skills is particularly emphasised in the course of an undergraduate degree through the study of economic principles and economic methods. These skills may be summarised as follows:

- **abstraction.** From the study of economic principles and models, students see how one can abstract the essential features of complex systems and provide a useable framework for evaluation and assessment of the effects of policy or other exogenous events. Through this, the typical student will acquire proficiency in how to simplify

while still retaining relevance. This is an approach that they can then apply in other contexts, thereby becoming more effective problem-solvers and decision-makers.

- **analysis, deduction and induction.** Economic reasoning is highly deductive, and logical analysis is applied to assumption-based models. However, inductive reasoning is also important. The development of such analytical skills enhances students' problem-solving and decision-making abilities.

- **quantification and design.** Data, and their effective organisation, presentation and analysis, are important in economics. The typical student will have some familiarity with the principal sources of economic information and data relevant to industry, commerce, society and government, and have had practice in organising it and presenting it informatively. This skill is important at all stages in the decision-making process.

- **framing.** Through the study of economics, a student should learn how to decide what should be taken as given or fixed for the purposes of setting up and solving a problem, i.e. what the important 'parameters' are in constraining the solution to the problem. Learning to think about how and why these parameters might change encourages a student to place the economic problem in its broader social and political context. This 'framing' skill is important in determining the decision-maker's ability to implement the solutions to problems.

The transferable concept

5.4   From learning economic principles, the typical student acquires a facility with some key concepts that are present in most of the decision problems that they are likely to face subsequently in their careers. These include:

- **opportunity cost.** A problem-solver or decision-maker must routinely ask 'what would have to be given up if ...' where the answer does not always involve as simply calculated financial cost. It is often the case that actions are proposed that fail to recognise forgone alternatives. Opportunity cost allows the economist to think about the costs in terms of all resources. Also, there are many examples of economic policies which enhance efficiency yet reduce equity and vice-versa. There are also many examples where gains in one time period involve costs in other time periods. All of these examples encourage an appreciation of inevitable trade-offs.

- **incentives.** Economists are trained to recognise and evaluate the incentives implied by particular rules, and how to establish sets of rules that actually lead people to react in ways that give rise to some intended outcome. The ability to think logically about these issues is essential in the effective design of both policy and strategy.

- **equilibrium, disequilibrium and stability.** These are concepts that economists make heavy use of and the typical graduate will have seen these deployed in economic argument with great regularity. The concept of equilibrium is a state where no participant has any incentive to change behaviour. The ability to recognise

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disequilibria and appreciate their stability properties, and to think coherently about reactions to this, are essential ingredients of good decision-making.

- **strategic thinking.** Economists learn the importance of strategic thinking and the roles of opportunities, strategies, outcomes, information and motivation in the analysis of strategic actions, including conflict, bargaining and negotiation.

- **expectations and surprises.** Economists learn that behaviour partly depends on experience and partly on people's perceptions of what is expected to happen. Thus behaviour may change when unanticipated events occur. Effective decision-making requires the skill of reacting in a context where people's behaviour is based on expectations that may be confounded by subsequent surprises. Students of economics will have been exposed to these issues and this will enhance their potential effectiveness as decision-makers.

- **the relevance of marginal considerations.** Economists are trained to recognise that important decisions often relate to small variations in key variables and parameters. An action is worth undertaking if the additional benefit that accrues is greater than the additional cost incurred. The typical student in economics will be fully aware of the importance of the margin relative to the average.

- **the possible gains from voluntary exchange.** Economists study and measure the net gains that people, institutions and countries can obtain from economic interaction in the form of specialisation, employment, exchange and trade. The identification and measurement of gains relative to costs and the barriers to maximising net gains are important in devising appropriate policies to optimise the use of scarce resources with respect to various individual, institutional, political, social and environmental objectives

- **systems and dynamics.** Many economic decisions or events can start a complex chain of events. Economists gain an understanding of the interrelationships between economic phenomena and how effects can accumulate or die away. The ability to see beyond the direct or short-term effects is a crucial insight that economists can bring to analysing the effects of both deliberate decisions and external shocks.

Numeracy

5.5   It is worth emphasising further the issue of numeracy. Economists frequently use information that is presented in some numerical form, and students should be appropriately trained in this regard. The raw data are often in tables, the processed data as a graph, an average, a correlation and so on. Numeracy, statistical and computing skills are necessary to handle this sort of information. Presentation skills are needed to communicate such quantitative information in usable ways, and particularly to give critical and coherent summary representations of data that cannot be readily absorbed raw. As well as the formal manipulative and presentation skills required to deal with statistical data, economists learn not to be misled by numbers. They question whether the numbers represent what they claim (e.g.

unemployment, price indices), they understand statistical significance (e.g. the margin of error in a poll or survey) and they are aware of at least some of the difficulties in sampling a population. In addition, with some understanding of econometrics, they recognise that conclusions drawn from data might be ambiguous.

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Appendix F: Extract – Economics Assessment Framework: AHELO Feasibility Study

This is an extract from the Economics Assessment Framework, AHELO Feasibility Study (OECD, 2012).

Learning Outcome I: Students should be able to demonstrate subject knowledge and understanding

Subject knowledge and understanding can be measured by asking students to demonstrate:

- consistent and coherent command of the language of economics, including the ability to clearly define standard terms and explain basic concepts in both microeconomics and in macroeconomics; with recognition given to controversies

- consistent and coherent command of the principles of economics, both microeconomics and macroeconomics, and the ability to structure economic arguments in a coherent and convincing way

- the ability to explain how economic agents (individuals, households, firms, governments etc.) make decisions and make choices, and the ability to use this understanding to solve problems related to economic decisions

- the ability to explain the basic workings of an economic system and the role of policy in such a system

- the ability to articulate critical features and shortcomings in an economic model or in a method of analysis.

While actual course requirements and content within specific courses vary widely across and within countries, some of the common concepts that are covered in this assessment are listed below.

A: Key economic concepts

*i. Opportunity cost***:** By asking and answering the question, "W*hat is given up when one alternative is selected*?" economists can think about the costs of an action in terms of all resources. An assessment of what is given up may involve a comparison of alternatives at different times. Present value calculations are used to compare alternatives with different cash outflows and inflows at different times to reflect the time value of money and other factors such as risk.

*ii. Incentives and expectations***:** People often react in predictable ways to incentives. Being able to predict how people will respond to incentives is critical in evaluating policies and strategies. The use of expectations in decision-making requires an understanding of probability and the notion that there can always be unexpected shocks or surprises. How agents form expectations and use expectations is debated in economics and forms the bases for alternative model formulations.

*iii. Equilibrium and disequilibrium***:** A stable equilibrium describes a state in which there is a tendency for prices and output to remain the same. Equilibrium does not always result in full employment or optimal allocation of resources. Disequilibrium indicates at least some

economic agents have an incentive to change behaviour. The ability to identify disequilibria is important in policy-making.

iv. Strategic thinking: This type of thinking involves the roles of opportunities, outcomes, information and motivation in the analysis of actions, including conflict, bargaining and negotiation, and inter-temporal decision-making. Game theory techniques are sometimes used to model this behaviour.

v. The relevance of marginal considerations: Decision-making sometimes involves the analysis of small variations in inputs for which small changes in outputs can be expected. Unfortunately, continuous incremental analysis is not always possible. However, when the additional benefit of an action is greater than the additional cost, the action should be taken.

vi. The possible gains from voluntary exchange: Voluntary exchange takes place when parties expect to gain from that trade. The identification and measurement of gains relative to costs and the barriers to maximising net gains are important in devising appropriate policies to optimise the use of scarce resources.

vii. Systems and dynamics: Many economic decisions or events can start a complex chain of reactions. The ability to see beyond the direct or short-term effects of a decision can contribute to analysing the effects of both deliberate decisions and external shocks.

viii. Numeracy: Economic analysis requires the use of numbers, mathematical concepts and methods, logical thinking and reasoning in order to evaluate issues and solve problems.

B: Microeconomic concepts

i. Decision-making and choice: Economic agents are required to make choices because resources are scarce. Choices involve considerations of opportunity costs, marginal analysis, production trade-offs (production possibilities frontiers), relationships between goods (substitutes versus complements), elasticity, and substitution and income effects. Risk and uncertainty affect choices of economic agents.

ii. Production and exchange of goods: In some economic systems decisions about what to produce and how to produce are determined by markets, and in other economic systems such decisions are made by government agents. Economic activity, including the production of goods and services, may also occur outside of markets. Some economic decisions may be made through cooperation and bargaining.

iii. The interdependency of markets: Firms use scarce resources to produce goods and services for consumers, businesses and governments. The demand for labour and other scarce resources is a derived demand and depends on the demand for the goods and services that those resources produce.

iv. Prices and market structure: In economic systems that rely on markets, consumer demand, costs and the interaction of firms within specific market structures, determine price and output. The structure of costs, the conditions for entry and exit, product differentiation and government regulations affect market structure. Government regulations, taxes and subsidies also affect prices and output.

v. Market failures: Externalities, asymmetric information, moral hazard, adverse selection, the strategic behaviour of firms in imperfect markets and public goods may lead to inefficiency or market failure. Market failure may lead to government intervention in markets. Differentials in power among firms and between firms and workers may also affect the allocation of resources.

vi. Economic welfare: Welfare economics evaluates how alternative economic arrangements affect economic efficiency and income distribution. One basic concept used to evaluate alternative economic arrangements is Pareto optimality, but other criteria, including equity, equality, and the provision of a minimum standard of living are also important.

C: Macroeconomic concepts

i. Employment and unemployment: Full utilisation of resources (land, labour, capital) yields maximum production of goods and services with fixed technologies, social norms and market and government structures. The unemployment of resources in an economy reduces that country's output to below its potential production (gross domestic product (GDP)) level. Market forces need not automatically eliminate unemployment. There are many different types of unemployment (e.g. frictional, structural, cyclical). There is also a discouraged-encouraged worker phenomenon associated with changes in reported unemployment.

ii. National income: The value of a nation's production can be used to measure the nation's growth and make cross-country comparisons. National income, also referred to as GDP, can be reported in real and nominal values.

iii. International trade and finance: Trade occurs between nations and is based on comparative advantage and the gains from trade. The trade in goods and services, financial transactions and capital inflows and outflows determine the exchange rate (the international value of a country's currency) and are summarised in the balance of payments. The balance of payments consists of the current account (trade in goods and services and financial transactions between countries), the capital account (inflows and outflows of capital), and financial transfers which occur if the current account and capital account do not sum to zero. Changes in the international value of a country's currency may impact a country's interest rate and other macroeconomic variables. Trade barriers, such as tariffs and quotas, will impact both international trade and the international value of a country's currency.

iv. International linkages and economies: Internationalisation and globalisation are major economic trends leading to more trade and cooperation agreements and to greater economic integration among nations and within regions.

v. Distribution of income: While real GDP can measure a country's total production and GDP per capita looks at the average income of people in a country, neither addresses income differences. A Lorenz curve can be used to describe the degree of income inequality in a country and across countries. Discussion of poverty income levels and the percentage of the population below the poverty line add to an understanding of the distribution of income and its effects.

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vi. Inflation: Decision-makers who need to compare long-term costs and benefits to make decisions/recommendations can make better decisions if the price level is known and constant or if the change in the price level is known and constant. Unexpected price changes cause an unintended redistribution of income and lead to a misallocation of resources.

vii. Economic growth: Economic growth can be measured by changes in real GDP or real GDP per capita. As a country grows, its citizens are generally better off economically. Growth can be increased through increased resources, increased education and training of workers, and changes in government policy. There are exogenous and endogenous theories of the determinants of long-run growth.

viii. Business cycles: Economic fluctuations do not occur in regular patterns, nor are they predictable. Changes in investment and employment decisions by producers can lead to changes in a country's total production. Reducing fluctuations in the business cycle can create a more stable economic environment.

ix. Money, banking and finance: Money eliminates the need for barter and makes the purchase of goods and services more efficient. Business, government and consumer purchases are often financed through loans. Changes in a country's money supply and/or money demand impact other economic variables, such as interest rates, investment, consumption, value of the domestic currency etc. These, in turn, affect a nation's production level.

x. Economic policy: Government, quasi-public, supranational and international institutions formulate and implement policies that affect macroeconomic variables. Decisions of the central banks with respect to the money supply and decisions of the government concerning taxation, spending and regulation impact the decisions of other economic agents. These policies often have unintended, as well as intended, domestic and international consequences. Examination of normative and descriptive policies is included.

Learning Outcome II: Students should be able to demonstrate subject knowledge and its application to real world problems

Subject knowledge and its application can be measured by asking students to demonstrate:

- the effective application of economic reasoning and methods of analysis to specific topic areas (e.g. markets, public finance, environment, poverty, health, labour markets, international trade, economic development etc.)
- recognition of assumptions and their implications for analytical results and economic debates
- use of economic reasoning to formulate and evaluate economic advice and policy in both the private and public sectors.

In demonstrating their mastery of subject knowledge and its application, students may be asked to use the economic concepts listed in Learning Outcome I in applying their economic knowledge to evaluate economic questions, issues, and policies. In contrast to Learning Outcome I, this learning outcome and the remaining learning outcomes focus more on multiple steps, multiple principles and/or more sophisticated methods of analysis to address an issue.

Learning Outcome III: Students should be able to demonstrate the ability to make effective use of relevant data and quantitative methods

The ability to make effective use of relevant data and quantitative methods can be measured by asking students to demonstrate significant knowledge of the sources of economic and social data, including an understanding of where and how to find such sources and the methods used to create or collect such data.

A: Knowledge and access to economic data

Economic analysis may require the use of quantitative and qualitative data from primary and secondary sources and of historical information. It is necessary to know and be able to access different sources of national and international data provided by government, private sectors and international organisations. It is also necessary to understand how data are collected as well as their limitations because conclusions of data-based research depend on the accuracy of such data.

B: Methods for economic analysis

Economic analysis may be done through the study of economic history and of other forms of data. Processing of data in different ways is needed in order to obtain information, statistics, and indicators that can help understand economic reality and economic problems and make it possible to test hypotheses. The knowledge and application of descriptive statistics, probability, hypothesis testing, correlation, and multivariate analyses can be considered as essential tools for assessing the application and relevance of economic theory and, hence, to determine if the evidence does not contradict economic assumptions and relationships.

C: Interpretations and limitations of empirical economic analyses

The ability to interpret results of data analyses and the ability to draw the appropriate conclusions are essential skills. Equally important is the ability to recognise the limitations of the analytical method and data used.

Learning Outcome IV: Students should be able to demonstrate the ability to communicate to specialists and non-specialists

The ability to communicate with specialists and non-specialists can be measured by asking students to demonstrate effective communication and explanation of economic arguments, both to those with disciplinary knowledge and to non-experts. Such communication should be both oral and written, and might involve the use of computer projection technology as well as the Internet.

Assessing students' ability to communicate to specialists and non-specialists requires the students to use several types of communication:

A - Sharing information, ideas, problems and solutions

B - Using appropriate analytical tools, such as tables, charts, graphs, models etc. to communicate with the audiences

C - Presenting quantitative information in usable ways

D - Summarising data that cannot be readily absorbed raw

E - Explaining results to specialists and non-specialists.

Learning Outcome V: Students should be able to demonstrate the ability to acquire independent learning skills

The ability to acquire independent learning skills can be measured by asking students to demonstrate:

- the ability to think reflectively and critically about a range of issues in economics, as demonstrated through expression of and understanding of the history of economic thought, the capacity and limitations of alternative approaches to modelling economic behaviour, or other means of analysing or studying economic problems

- the ability to pose and carry out the investigation of a specific problem in economics. This would involve (1) the formulation of a topic for study, (2) knowledge of previous research and results of the topic, (3) knowledge and choice of suitable methods for its investigation, and (4) the ability to draw conclusions from the investigation. Such conclusions might include areas for further investigation.

- information literacy – the ability to identify, find, acquire, understand, evaluate and use information and data about a specific economic problem. Demonstration of information literacy would involve (1) determining the extent of information needed, (2) accessing information effectively and efficiently, (3) critically evaluating information and its sources, (4) integrating selected information into the learner's knowledge base, and (5) using information effectively to accomplish a specific purpose.

The assessment of these learning outcomes should require students to use the following four competencies:

A: Abstraction

From the study of economic principles and models, students should learn to see how one can (1) abstract the essential features of complex systems, and (2) provide a useable framework for assessment and evaluation of the effects of policy or other exogenous events. Through this, the typical student acquires proficiency in how to simplify models while still retaining relevance. This is an approach that the student can then apply in other contexts, thereby becoming a more effective problem-solver and decision-maker.

B: Analysis, deduction and induction

Economic reasoning is highly deductive, and logical analysis is applied to assumption-based models. However, inductive reasoning is also important. The development of such analytical skills enhances the student's problem-solving and decision-making ability.

C: Quantification and design

Data and their effective organisation, presentation and analysis are important in economics. The typical student has some familiarity with the principal sources of economic information and data relevant to industry, commerce, society, and government, and has had practice in the organisation and presentation of data. This skill is important at all stages in the decision-making process. It is a central and crucial skill for an economics graduate because an

employer will reasonably expect an economics graduate to be able to structure, analyse, and explain information presented in some numerical form. The raw data are frequently presented as tables (or datasets with a tabular structure) and the processed data as a graph, an average, a correlation, and so on. Numerate, statistical and computing skills are necessary to handle this sort of information.

Presentation skills are needed to communicate such quantitative information in usable ways and, particularly, to give critical and coherent summary representations of data that cannot be readily absorbed raw. In addition to forming manipulative and presentation skills required to deal with statistical data, economists learn not to be misled by numbers.

Economists question whether the numbers represent what they claim (e.g. unemployment, price indices), understand statistical significance (e.g. the margin of error in a poll or survey), and are aware of at least some of the difficulties in sampling a population. In addition, with some understanding of econometrics, they recognise that conclusions drawn from data might be ambiguous.

D: Framing

Through the study of economics, a student should learn how to decide what should be taken as given or fixed for the purposes of setting up and solving a problem, i.e., what the important parameters are in constraining the solution to the problem. Learning to think about how and why these parameters might change encourages a student to place the economic problem in its broader social and political context. This framing skill is important in determining the decision-maker's ability to implement the solutions to problems.

Economic principles apply not only to business and management, but also to other social science fields such as government, history, psychology, sociology, geography, law and anthropology. Economists depend on mathematical concepts and statistical analysis techniques to evaluate and solve problems. First-cycle or bachelor degree students should be able to use the economic way of thinking and other analytical tools to evaluate problems/issues covering a wide and diverse range.

Hansen's proficiencies

1. *Graduates can access existing knowledge.*
Retrieve information on particular topics and existing economic issues in economics. Locate published research in economics and related fields. Track down economic data and data sources. Find information about the generation, construction and meaning of economic data.

2. *Graduates can demonstrate a command of existing economic knowledge.*
Explain key economic concepts and describe how these concepts can be used. Write a précis of a published journal article. Summarise in a two-minute monologue or a 500-word written statement what is known about the current condition of the economy and its outlook. Summarise the principal ideas of an eminent economist. Elaborate a recent controversy in the economics literature. State the dimensions of a current economic policy issue.

3. Graduates are able to interpret existing economic knowledge.

Explain and evaluate what economic concepts and principles are used in economic analyses published in daily newspapers and weekly magazines. Describe how these concepts aid in the understanding these analyses. Do the same for nontechnical analyses written by economists for general purpose publications, (e.g. *Challenge*, *Brookings Review*, *The Public Interest*).

4. Graduates are able to interpret and manipulate economic data.

Explain how to understand and interpret numerical data found in published tables such as those in the annual economic report data of the president. Be able to identify patterns and trends in published data such as the Statistical Abstracts of the US. Construct tables from already available data to illustrate an economic issue. Describe the relationship among three different variables (e.g. unemployment, prices and GDP). Explain how to perform and interpret a regression analysis that uses economic data.

5. Graduates can apply existing economic knowledge.

Prepare an organised, clearly written five-page analysis of a current economic problem. Assess in a four-page paper the costs and benefits of an economic policy issue. Prepare a two-page memorandum that recommends action on an economic policy issue.

6. Graduates are able to create new knowledge.

Conduct a senior project that includes a detailed proposal for research, a polished 20-page paper of the results and an oral presentation.

Acronyms

ABDC   Australian Business Deans Council

ACER   Australian Council of Educational Research

AHELO   Assessment of Higher Education Learning Outcomes

AQF   Australian Qualifications Framework

ESA   Economics Society of Australia

GDP   Gross domestic product

HESP   Higher Education Standards Panel

LTAS   Learning and Teaching Academic Standards

OECD   Organisation for Economic Co-operation and Development

OLT   Office for Learning and Teaching

QAA   Quality Assurance Agency

QUT   Queensland University of Technology

TEQSA   Tertiary Education Quality Standards Agency

Glossary of terms

Advanced concepts   ideas that build on more fundamental ideas. For example, the concept of general equilibrium builds on the concept of partial equilibrium.

Analytical skills   ability to solve problems by applying logical thinking and tools such as diagrams, mathematics and/or statistics

Cognitive skills   ability to process information, including the ability to know, comprehend, apply, analyse, synthesise and evaluate

Coherent exposition   an explanation or discussion that flows logically and clearly

Complex ideas   ideas that integrate a range of concepts. For example, the idea of gains from trade draws on concepts from welfare economics such as comparative advantage, and producer and consumer surplus.

Core concepts   simple building blocks to facilitate understanding of advanced concepts. They act as 'scaffolding' for advanced or higher order concepts. For example, equilibrium and opportunity cost are core concepts.

Framing   determining what should be taken as given for the purposes of setting up and solving a problem. For example, in finding solutions to the problem of hospital waiting lists, economists may hold constant factors such as technology and household incomes.

Learning domains   categories of minimum learning outcomes. The Economics Learning Standards are grouped under five learning domains.

Learning outcomes   what graduating students know, understand and are able to do

Learning standards   the *minimum* learning outcomes that graduates are expected to have attained. They are not intended to limit the scope or depth of programs.