# Newcastle Business School

## GSBS6382: Applied Economic Evaluation in Healthcare 2024

*MISSION: To develop a unique business school identity which is distinctive in the marketplace and provides a clear value proposition for students. This will be achieved by embedding the themes of entrepreneurship and innovation, digitalisation and data within our programs and embracing sustainability, work integrated learning and a commitment to social justice.*

# OVERVIEW

**Course Description**

The study of economics introduces a unique perspective on healthcare service and system evaluation. Resources are finite for the range of a society's healthcare needs and wants. As a result, choices must be made about how available resources will be best used. This course will introduce participants to economic evaluation principles and their application to real life scenarios in healthcare.

The course is designed as an introduction to applied economic evaluation in healthcare. Students will gain knowledge of core economic principles before learning the necessary steps leading up to the conduct of an economic evaluation. The course provides students with the opportunity to apply practical experience in a range of economic evaluations used in front line healthcare. Students will gain an understanding of how economic evaluation can, and is used to inform health care decision-making.

**Sustainable Development Goals**

**Contact Hours**

**Online Activity**
Self-Directed 6 hour(s) per term.
**Workshop**
Face to Face On Campus 2 hour(s) per week(s) for 12 week(s) starting in week 1.

**Unit Weighting** 10 units

**Workload** Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

**Please refer to the course CANVAS site for details of teaching staff for ALL course offerings. The primary contact for courses is the Course Coordinator, whose details are listed on the course CANVAS site.**

**Student Consultation** A minimum of one (1) hour of consultation per week. Please see course CANVAS site for details of time and location.

**Course Learning Outcomes**

**On successful completion of this course, students will be able to:**

1. Explain the complexity of decision-making in healthcare and the role of economic evaluation in informing decisions and policy design.
2. Critically appraise a randomised controlled trial and a health economic evaluation and be familiar with a range of priority setting techniques.
3. Synthesis evidence to develop and strengthen an economic evaluation.
4. Understand the principles and perform steps of cost-effectiveness, cost-utility and cost-benefit analysis.
5. Use economic date to construct a Budget Impact Statement
6. Understand and use preference elicitation measures for a value-based approach to economic evaluation.

# ASSESSMENTS

This course has **3** assessments. Each assessment is described in more detail in the sections below:

| | Assessment Name | Due Date | Involvement | Weighting | Learning Outcomes |
|---|---|---|---|---|---|
| 1 | Problem-Based Learning Assignment | Friday – Week 4 by 11:59 pm | Individual | 30% | 1, 3 |
| 2 | Report Critique | Monday – Week 9 by 11:59 pm | Individual | 30% | 1, 2, 4 |
| 3 | Evaluation Design | Friday – Week 13 by 11:59 pm | Individual | 40% | 4, 5, 6 |

| |
|---|
| **Please note: students are advised that ALL assessments must be submitted in English. Assessments not submitted in English will receive a mark of zero.** |
| **Results of individual assessment items and final results, including those provided via the Learning Management System (LMS) are 'unofficial results' until they are confirmed as finalised by the School Assessment Body and the Head of School or delegate. Finalised results are released directly to students on the Fully Graded Date of the relevant Semester/Trimester.** |

## Time referenced is time in Newcastle NSW

| Late Submissions | The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. **Note**: this applies equally to week and weekend days. |
|---|---|

## Assessment 1 – Problem-Based Learning Assignment

| | |
|---|---|
| Assessment Type | Case Study/Problem Based Learning |
| Purpose | To assess and evaluate knowledge and understanding of the role of economic evaluation in informing healthcare decisions and policy design; and to assess ability to synthesise evidence. |
| Description | Students must answer open-ended questions on concepts reviewed in class and demonstrate their knowledge of the practical aspects of economic evaluation. |
| Weighting | 30% |
| Length | Maximum of 1500 words |
| Due Date | Friday – Week 4 by 11:59 pm |
| Submission Method | Online via course CANVAS site |
| Assessment Criteria | The problem-based learning assignment will test your ability to synthesise evidence for real world problems and solutions and the clarity and justification of your argument based on the evidence. |
| Return Method | Online via course CANVAS site |
| Feedback Provided | General feedback will be provided in class for reflection and improvement. |

## Assessment 2 – Report Critique

| | |
|---|---|
| Assessment Type | Report |
| Purpose | To assess and evaluate knowledge and application of the key steps in an economic evaluation framework. |
| Description | Students must review and critically evaluate an economic evaluation conducted alongside a trial. |
| Weighting | 30% |
| Length | Maximum of 2000 words |
| Due Date | Monday – Week 9 by 11:59 pm |
| Submission Method | Online via course CANVAS site |
| Assessment Criteria | The report critique assignment will test your understanding of the steps and features of an economic evaluation and your critical thinking and development of arguments around decision making in healthcare. |
| Return Method | Online via course CANVAS site |
| Feedback Provided | General feedback will be provided in class for reflection and improvement. |

## Assessment 3 – Evaluation Design

| | |
|---|---|
| Assessment Type | Written Assessment – short answer |

| | |
|---|---|
| **Purpose** | To assess and evaluate understanding and application of the principles of economic evaluations, budget impact analyses and preference elicitation measures. |
| **Description** | Students must perform the steps of an economic evaluation of the described health intervention, including steps of decision analytic modelling and budget impact analysis. |
| **Weighting** | 40% |
| **Length** | Refer to course CANVAS site |
| **Due Date** | Friday - Week 13 by 11:59 pm (week following last week of class) |
| **Submission Method** | Online via course CANVAS site |
| **Assessment Criteria** | The evaluation design assignment will test your ability to use data and perform the steps of economic evaluations, budget impact analyses and preference elicitation measures. |
| **Return Method** | Online via course CANVAS site |
| **Feedback Provided** | Feedback will be made available for review by students, upon request, in a controlled and monitored setting. |

# SYLLABUS

**Course Content**

**Topics in the course include but are not limited to the following:**

1. An introduction to economic evaluation principles and their application to health care decision making.
2. Costs and consequences.
3. The process and steps of performing a health economic evaluation
4. Using economic evaluation for decision making
5. Value based health economics and decision making

**Course Materials**

**Required Text:**

Drummond, Michael F., et al. *Methods for the economic evaluation of health care programmes*. Oxford university press, 2015.

**ISBN**: 9780191643583

Please refer to the course CANVAS site for details of additional recommended texts.

# SCHEDULE

| Week | Topic | Class Preparation | Workshop Activities |
|---|---|---|---|
| 1 | Introduction to course, decisions in healthcare, introduction to health economics | **Read:** chapter 1 and 2 of required text | |
| 2 | Frameworks of Health Technology Assessment (HTA) and economic evaluation | **Read:** chapter 8, section 8.1 and 8.2, of required text<br>**Read:** Padwal, R. S., Majumdar, S. R., Klarenbach, S., Birch, D. W., Karmali, S., McCargar, L., ... & Sharma, A. M. (2010). The Alberta population-based prospective evaluation of the quality of life outcomes and economic impact of bariatric surgery (APPLES) study: background, design and rationale. *BMC Health Services Research*, *10*(1), 1-11. | |
| 3 | Measures of cost, Capital costs, inflation, exchange rates | **Read:** chapter 7 of required text | |
| 4 | Cost exercises and discounting of costs and benefits | **Read:** chapter 7 of required text<br>**Read:** Multicentre Aneurysm Screening Study Group. (2002). Multicentre aneurysm screening study (MASS): cost effectiveness analysis of screening for abdominal aortic aneurysms based on four year results from randomised controlled trial. *BMJ: British Medical Journal*, *325*(7373), 1135. | Costing a pharmaceutical trial<br><br>**Assessment 1 due**: Friday – Week 4 by 11:59 pm |
| 5 | Measuring health effects from clinical studies for cost-effectiveness analyses | **Read:** chapter 5, section 5.1 and 5.2 of required text<br>**Read article for critical appraisal workshop activity:** Sabatine, M. S., Giugliano, R. P., Keech, A. C., Honarpour, N., Wiviott, S. D., Murphy, S. A., ... & Pedersen, T. R. (2017). Evolocumab and clinical outcomes in patients with cardiovascular disease. *New England Journal of Medicine*, *376*(18), 1713-1722. | Critical appraisal of randomised controlled trials (RCTs) |
| 6 | Direct and indirect (generic) utility measurement and contingent valuation for cost-utility and cost-benefit analyses | **Read:** chapter 5 and 6 of required text | |
| 7 | Types of economic evaluation and steps | **Read:** chapter 4 of required text | Performing a cost effectiveness analysis |
| 8 | Decision analytic modelling, decision trees, markov models and monte-carlo simulations | **Read:** chapter 8 and 9 of required text | Decision modelling exercises |
| 9 | Uncertainty and sensitivity analyses | **Read:** chapter 3 and 11 of required text<br><br>**Read article for critical appraisal workshop activity:** Kuznik, A., Bégo-Le-Bagousse, G., Eckert, L., Gadkari, A., Simpson, E., Graham, C. N., ... & Sullivan, S. D. (2017). Economic evaluation of dupilumab for the treatment of moderate-to-severe atopic dermatitis in adults. *Dermatology and therapy*, *7*(4), 493-505. | Critical appraisal of economic evaluation<br><br>**Assessment 2 due**: Monday – Week 9 by 11:59 pm |

| 10 | Budget Impact Assessment (BIA) | **Read the two articles for the BIA workshop activity:** Plunkett A, Merlin K, Gill D et al. The frequency of common non-malignant skin conditions in adults in central Victoria, Australia. International Journal of Dermatology (1999) 38, 901-908.<br>Sullivan SD, Mauskopf JA, Augustovski F et al. Budget Impact Analysis – Principles of Good Practice: Report of the ISPOR 2012 Budget Impact Analysis Good Practice II Task Force. Value in Health 17 (2014): 5-14. | Budget Impact Assessment (BIA) exercises | |
|---|---|---|---|---|
| 11 | Priority setting tools and methods; Value based healthcare and a value based approach to economic evaluation; regulatory and reimbursement bodies | **Read:** chapter 5 and 6 of required text | | |
| 12 | Preference elicitation exercises, discrete choice experiments (DCEs) and their integration with economic evaluation | **Read the following two articles:** Soekhai, V., de Bekker-Grob, E. W., Ellis, A. R., & Vass, C. M. (2019). Discrete choice experiments in health economics: past, present and future. *Pharmacoeconomics*, *37*(2), 201-226.<br><br>Soekhai, V., Whichello, C., Levitan, B., Veldwijk, J., Pinto, C. A., Donkers, B., ... & de Bekker-Grob, E. W. (2019). Methods for exploring and eliciting patient preferences in the medical product lifecycle: a literature review. *Drug discovery today*, *24*(7), 1324-1331.<br><br>Watch additional video on DCEs. | | |
| | | | **Assessment 3 due**: Friday of week 13 by 11:59 pm (week following last week of classes). | |
| **Please note: Assessment submission methods may vary depending upon COVID-19 restrictions.** | | | | |
| **Please note: if a class/lecture is scheduled on a public holiday, a make-up lecture may be announced by the course coordinator on the course CANVAS site.** | | | | |
| | | | | |

# CONTACTS

**School Office**

**Newcastle Business School – Callaghan, Newcastle City & Online**
NU Space
409 Hunter Street
Newcastle
nbs.enquiries@newcastle.edu.au
+61 2 4921 5511

**Newcastle Business School - Ourimbah**
BO1.13, Business Offices
Ourimbah
cccbusiness-school@newcastle.edu.au
+61 2 4349 4453

**Newcastle Business School - Sydney**
55 Elizabeth Street
Sydney
nbs-sydney@newcastle.edu.au
+61 2 82626432

**PSB Academy Enquiries**
Log your question or request to the PSB Program Executives at the following website:
http://www.psb-academy.edu.sg/enq
+65 6390 9000

**Newcastle Australia Institute of Higher Education Pte Ltd**
100 Victoria Street #13-01/02
National Library Building
Singapore
Singapore-StudentCentral@newcastle.edu.au
+65 6221 3306

# ADDITIONAL INFORMATION

**Grading Scheme**

This course is graded as follows:

| Range of Marks | Grade | Description |
|---|---|---|
| 85-100 | High Distinction (HD) | Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives. |
| 75-84 | Distinction (D) | Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives. |
| 65-74 | Credit (C) | Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes. |
| 50-64 | Pass (P) | Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes. |
| 0-49 | Fail (FF) | Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action. |

*Skills are those identified for the purposes of assessment task(s).

| | |
|---|---|
| **Communication Methods** | Communication methods used in this course include: |
| | - CANVAS Course Site: Students will receive communications via the posting of content or announcements on the CANVAS course site. |
| | - Email: Students will receive communications via their student email account. |
| | - Face to Face: Communication will be provided via face to face meetings or supervision. |
| **Course Evaluation** | Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement. |
| **Oral Interviews (Vivas)** | As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule. |
| **Academic Misconduct** | All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35. |
| **Adverse Circumstances** | The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where: |
| | 1. the assessment item is a major assessment item; or |
| | 2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system; |
| | 3. you are requesting a change of placement; or |
| | 4. the course has a compulsory attendance requirement. |
| | Before applying you must refer to the Adverse Circumstances Affecting Assessment Items Procedure available at: https://policies.newcastle.edu.au/document/view-current.php?id=236 |
| **Important Policy Information** | The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at https://www.newcastle.edu.au/current-students/no-room-for/policies-and-procedures that support a safe and respectful environment at the University. |

*This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.*