



Course Outline

BABS7020

Biotechnology Commercialisation Strategy in Australia and Asia

Core

Graduate Certificate in Commercial Biotechnology
(7066)

Elective

Master of Professional Science
(8958)

Elective

AGSM MBA (Medical Technology & Pharmaceuticals)
(8625)

School of Biotechnology and Biomolecular Sciences
Faculty of Science

Term 2, 2021

1. Staff

Position	Name	Email	Locations	Consultation Times
Course Convenor	Lisa Selbie, PhD Senior Lecturer	l.selbie@unsw.edu.au		Online by appointment
Program Director	A/Prof Wallace Bridge	wj.bridge@unsw.edu.au	Room 420C, Bioscience North Building	By appointment

2. Course information

Units of credit: 6UOC

Core Course: Graduate Certificate in Commercial Biotechnology

Pre-requisite(s): None

Timetable details: TBC

2.1 Course summary (Handbook entry)

Through case studies, this course explores how scientific discovery is developed into intellectual property (IP) and how technology, product and service opportunities based on this IP are identified and evaluated for commercial potential. Using real IP for platform technologies, students will identify, define, strategise and prioritise pipelines for commercialisation in the major markets of the US and Europe as well as Australia and Asia. All aspects of commercialisation including intellectual property management, regulatory approval, marketing, funding, and product development will be considered in the business strategy.

2.2 Course aims

To give students an understanding of:

- how scientific discovery is developed into intellectual property (IP) and how product and service opportunities based on this IP are identified and evaluated for commercial potential
- how to consider all aspects of the commercialisation pathway which need to be addressed in developing a comprehensive global commercialisation strategy for a given biotechnology-based technology, product or service.

2.3 Course learning outcomes (CLO)

At the successful completion of this course students should be able to:

1. Analyse the interplay and contribution of science, technology and business disciplines on the innovation process and how they should be managed to optimise their impact for commercial success.
2. Critique the role of intellectual property management on innovation value and the translation of biotechnology opportunities in various global and regional markets.
3. Identify, evaluate and reflect on commercialisation strategies to translate biotechnology opportunities to sustainable and profitable products and services.
4. Develop a commercialisation strategy plan for a given technology, product or service in the Australian and Asian biotechnology markets that should maximise the potential for market success, meet organisational goals and objectives, and comply with the relevant legal, technical, ethical and regulatory frameworks.
5. Demonstrate effective teamwork skills through collaboration with peers, and by providing and receiving feedback.
6. Reflect on the learning experience and the feedback received for personal and professional development.

2.4 Relationship between course and program learning outcomes and assessments

Course Learning Outcome (CLO)	LO Statement	Related Tasks & Assessment
CLO 1	Analyse the interplay and contribution of science, technology and business disciplines on the innovation process and optimise the impacts for commercial success.	Lectures and discussions Assessments 1-4
CLO 2	Critique the role of intellectual property on commercial value and the translation of biotechnology opportunities in global markets.	Lectures and discussions Assessments 1-4
CLO 3	Identify, evaluate and reflect on commercialisation strategies to translate biotechnology opportunities to sustainable and profitable products and services.	Lectures and discussions Assessments 1-4
CLO 4	Develop a commercialisation strategy plan for a given technology, product or service in the Australian and Asian biotechnology markets that should maximise the potential for market success, meet organisational goals and objectives, and comply with the relevant legal, technical, ethical and regulatory frameworks.	Lectures and discussion Assessment 1 and 4
CLO 5	Demonstrate effective teamwork skills through collaboration with peers, and by providing and receiving	Assessment 4

	feedback.	
CLO 6	Reflect on the learning experience and the feedback received for personal and professional development.	Assessment 3

3. Strategies and approaches to learning

3.1 Learning and teaching activities

This course will be taught entirely in the online environment on the Course Website (Moodle). All students enrolled in courses offered at BABS automatically have access to the course Moodle site <https://moodle.telt.unsw.edu.au>. This site, detailed in section 7, will be used for the entire course to communicate with students, provide content, lectures, video links, quizzes and assessments and, importantly, facilitate all class discussion forums.

Throughout the course, students are encouraged to develop problem-solving skills and to critically evaluate concepts, ideas and research results by participating in all learning activities including the viewing of lectures and videos, reading relevant articles and websites, participating in the discussion learning forums, completing online timed quizzes, and completing the two assessment projects.

Lectures available on the course Moodle site serve to emphasize principles, provide an overview and connect the individual components of the course. The lectures provide a guide to the material that needs to be covered by the course. Students are encouraged to extend their knowledge by reading from a variety of sources.

More details on learning activities and how they are going to assist students to achieve the intended learning outcomes will be provided during the course (the course manual and Moodle).

3.2 Expectations of students

Students are expected to participate in the online course in a consistent and professional manner throughout each week of the class. Lectures, as well as providing facts, will provide an understanding of processes by which scientific enquiries and discoveries are made and commercialised. Learning activities are designed to help students to revise the lecture materials and complete assessment tasks.

Students who miss an occasional class due to illness or other approved absence should contact the course convenor. As a rule, there will be no extensions for assignments, unless you have approved special circumstances. <https://student.unsw.edu.au/special-consideration>

If you do foresee issues with submission of an assignment, immediately contact the instructor before the assignment deadline to see if any accommodations can be made.

Social networks (i.e. Facebook, Twitter etc) will not be used to share class materials and a way to contact academics including demonstrators/tutors involved in this course. If students have course-related questions, they are encouraged to use discussion forums on the course's Moodle website for questions and answers that might be of benefit to all students in the course.

If more help is needed, you may contact or email (from their UNSW email) the Course Convener or alternative contacts listed in the course website. When sending an email to the course coordinator, a student must state their name, student number and the course they are enrolled in.

Students are encouraged to consult with Wallace Bridge if in doubt as to their progress.

4. Course schedule Term 2 2021

Week(s)	Themes & Topics
1 31 May 2021	<p>Introduction to the course and</p> <p>Theme 1: Commercialisation process in Australian and Asian biotech markets</p> <p>Topic 1: Review of stages in the commercialisation process</p> <p>Topic 2: Opportunities and barriers to commercialisation in the distinct Australian and Asian biotech markets, including (1) the sources and mechanisms of funding commercialisation of innovation, and (2) clinical trials and regulatory bodies</p> <p>Assessment 1: Required Discussion Participation</p>
2-3 7 Jun	<p>Theme 2: Forms of Intellectual Property (IP) and their values in the Australian and Asian biotech sectors</p> <p>Topic 1: Determining Intellectual Property valuation (Wk 2)</p> <p>Topic 2: The impact of regional- and market-specific patent law, patent landscapes and government/industry approaches to dealing with infringement (Wk 2)</p> <p>Topic 3: Protecting and determining IP valuation of biotechnology innovations (Wk 3)</p> <p>Assessment 1: Required Discussion Participation; student-led quiz</p>
4 21 Jun	<p>Theme 3: IP analysis and a comprehensive IP management strategy</p> <p>Topic 1: Evaluation of IP management strategies</p> <p>Topic 2: Analysis of specific case studies involving management of IP to create value.</p> <p>Topic 3: Debrief of Assessment 3 Case study</p> <p>Assessment 1: Required Discussion Participation; student-led quiz</p> <p>Assessment 2: Quiz 1: Weeks 1, 2 & 3 Due end of Week 4</p>
5-6 28 Jun	<p>Theme 4: Types of commercialisation strategies and business models</p> <p>Topic 1: Biotechnology business models and commercialisation strategies (Wk 5)</p> <p>Topic 2: Commercialisation opportunities in Asia (Wk 5)</p> <p>Topic 3: Considerations when developing a commercialisation strategy for specific Asian and other markets (Wk 6)</p> <p>Topic 4: The value of partnering in Asia (Wk 6)</p> <p>Topic 5: Debrief of Assessment task 3 Commercialisation Strategy Plan – Team formation and planning (Wk 6)</p> <p>Assessment 1: Required Discussion Participation</p> <p>Assessment 3: Case Study due end of Week 7</p> <p>Assessment 2: Quiz 2: on Weeks 4, 5 & 6 due end of Week 6</p>
7-9 12 Jul	<p>Theme 5: Commercialisation Strategy Plan Development</p> <p>Topic 1: Components of a Commercialisation Strategy Plan (Wk 7)</p> <p>Topic 2: Analysis of specific case studies of commercialisation strategies (Wk 7 & 8)</p> <p>Topic 3: Considerations in implementing a Commercialisation Strategy Plan in Australia and Asia (Wk 8)</p> <p>Assessment 1: Required Discussion Participation; student-led quiz</p> <p>Assessment 4: Commercialisation Strategy Team <u>Written Plan</u> due end of</p>

	Week 9
10 2 Aug	<p>Theme 6: Professional development in the biotechnology industry</p> <p>Topic 1: How social, cultural, and regional issues and norms impact professional development in Asia</p> <p>Topic 2: Reflection to analyse how course learnings can be applied to current and/or future role and professional development</p> <p>Assessment 1: Reflection</p> <p>Assessment 4: Commercialisation strategy plan team <u>peer review feedback</u> due end of Week 10</p>
11 9 Aug	<p>Study Period to assess Assessment 3 peer review feedback into Commercialisation team strategy plan due in Week 12</p>
12 16 Aug	<p>Assessment 4: Individual formal reply to feedback on Commercialisation Strategy Plan due</p> <p>Course completed on Saturday 21 Aug</p>

5. Assessment

To pass the course, it is advised that you submit all the assignments. However, if you are confident of passing the course without submitting an assessment, you are not obliged to do so (notice that you will not receive a mark for any unsubmitted assessments).

5.1 Assessment tasks

Assessment task and methods	Weighting (%)		Submission methods	Mark and feedback style	Week Due
Assessment 1: Individual Weekly learning activities: Participation in weekly asynchronous class discussions, for the first 10 weeks of the course.	A. Weekly discussion forums & engagement with course content through discussions (Weeks 1-6, 8, 10)	16% (8 x 2%)			By Sunday 11:59 pm of each week.
Assessment 2: Individual Weekly learning activities: Participation in weekly asynchronous class discussions, for the first 10 weeks of the course.	Two student-led practice quizzes in Wk 3, 5 (2% each), followed by two online open book quizzes in Wks 4 & 6 (5% each)	14% (2x2%) 2x5%	Timed quizzes are completed online. Contributions to the discussion forums are posted online.	Quiz grades are entered into the Gradebook. Feedback given during the discussion, and after the end of the week. Discussion grades are posted in the Gradebook.	By Sunday 11:59 pm of each week.
Assessment 3 Individual. Case study Report	30%		Via Moodle/Turnitin	Feedback – Rubric comments in Week 9 All uploaded on Moodle	Week 7 By Sunday 11:59 pm

Assessment 4: Team Commercialisation Strategy Plan	A: Written Team Plan	25%	Via Moodle/Turnitin	Feedback – Rubric comments in Week 10	Week 9 By Sunday 11:59 pm
	B: Team review and feedback of another Team Plan	5%	Via Moodle/Turnitin	Peer Review feedback available Week 11.	Week 10 By Sunday 11:59 pm
	C: Participatio n in team discussion, and individual preparation reply to feedback.	10%	Participation in team discussion, and individual preparation of a response to feedback.	Feedback – Rubric comments available at end of course	Week 12 By end of the course

Further information

UNSW grading system: <https://student.unsw.edu.au/grades>

UNSW assessment policy: <https://student.unsw.edu.au/assessment>

5.2 Assessment criteria and standards

The major components of this course are the content which is delivered through lectures, readings and discussion forums. This will be assessed by written or oral assignments, and quizzes, and quality participation in discussion forums. More details on the assessment tasks and how they will be graded will be provided during the course (in the course manual or online via Moodle).

5.3 Submission of assessment tasks

Assessment submission

Details on assessment submission are given in the course manual or online via Moodle (also please refer to the table provided in section 5.1). Information on extension of deadline and penalties for late submission are explained in the course manual.

Special consideration

Applications must be made via Online Services in myUNSW. Students must obtain and attach Third Party documentation before submitting the application. Failure to do so will result in the application being rejected.

5.4. Feedback on assessment

Students will receive constructive feedback on their assignments in a timely manner (within 2 weeks after submissions as instructed in the UNSW assessment Policy). The delivery method of feedback may vary depending on the assessment type. Brief outline of assessment feedback is presented in the table provided in section 5.1. Full details are provided in Section 10.

6. Academic integrity, referencing and plagiarism

No particular recommended referencing style is required for this course; thus, students can choose a style they desire from an accepted journal in the field. However, the chosen style needs to be used throughout an assignment, keeping the consistency is valued the most.

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at

<https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage.¹ At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site <https://student.unsw.edu.au/plagiarism>, and
- The *ELISE* training site <http://subjectguides.library.unsw.edu.au/elise/presenting>

The *Conduct and Integrity Unit* provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

7. Readings and resources

Course Website (Moodle)

All students enrolled in courses offered at BABS automatically have access to the course Moodle site <https://moodle.telt.unsw.edu.au>. This site will be used for the entire course to communicate with students, provide content, lectures, video links, quizzes and assessments and importantly facilitate all class discussion forums.

This includes:

- Lectures, videos and website links
- Readings (available online through the library and Leganto (<https://subjectguides.library.unsw.edu.au/leganto>))
- Discussion Forums
- Assessments - detailed information
 - online timed quizzes

¹ International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

- marks
- further information resulting from special consideration
- Self-management resources

Resources

Literature Searching: <http://www.ncbi.nlm.nih.gov/pubmed>

UNSW Library: <http://www.library.unsw.edu.au>

8. Administrative matters

Biosciences Student Office

Student Advisor (BABS)

Email: BABStudent@unsw.edu.au

Tel: +61 (2) 9385 8047

School Contact (set up in progress)

Director of Teaching

Email: BABSteaching@unsw.edu.au

Faculty Contact

Dr Gavin Edwards

Associate Dean (Academic Programs)

Email: g.edwards@unsw.edu.au

Tel: +61 (2) 9385 4652

Additional Websites

- Biosciences Student Office: <https://www.babs.unsw.edu.au/contact/biosciences-student-office>
- School of Biotechnology and Biomolecular Sciences website for current students: <https://www.babs.unsw.edu.au/current-students/undergraduate-programs>
- UNSW Faculty of Science: <https://www.science.unsw.edu.au/>
- MyUNSW: <https://my.unsw.edu.au/>

9. Additional support for students

- The Current Students Gateway: <https://student.unsw.edu.au/>
- Academic Skills and Support: <https://student.unsw.edu.au/academic-skills>
- Student Wellbeing, Health and Safety: <https://student.unsw.edu.au/wellbeing>
- Disability Support Services: <https://student.unsw.edu.au/disability-services>
- UNSW IT Service Centre: <https://www.it.unsw.edu.au/students/index.html>
- UNSW Academic Calendar Key Dates: <https://student.unsw.edu.au/dates>
- UNSW Handbook: <http://www.handbook.unsw.edu.au/2018/index.html>
- UNSW Learning Centre: <http://www.lc.unsw.edu.au/>
- UNSW Student Equity and Disabilities Unit: <https://student.unsw.edu.au/disability>

- Counselling and Support: <https://www.counselling.unsw.edu.au/>
- University Health Service: <http://www.healthservices.unsw.edu.au/>
- The Hub: <https://student.unsw.edu.au/hub>
- UNSW Careers and Employment Service: <http://www.careers.unsw.edu.au/>
- ARC- Student Life: <https://www.arc.unsw.edu.au/>
- UNSW Student Life: <https://www.unsw.edu.au/life>

Course Manual

10. Assessment Tasks

Assessment 1: Weekly discussion forums

Due Date: Weekly for 8 weeks. Note: there are no discussion forums in Weeks 7 and 9

Type: Individual

Weighting: 16% (8 x 2%)

Length: a minimum of two postings, 100 to 200 words maximum each

Submission Details: Contributions are posted to the designated weekly discussion forums. Links are provided in each theme/topic.

Feedback Details: The discussion forum is facilitated by the course convenor and general class feedback will be provided after the end of the week.

Aligned CLOs: 1-6:

Rationale

The weekly learning activities are designed to explore, analyse and clarify the week's concepts, through facilitated discussions. The quizzes are designed to give you immediate feedback as to whether you are grasping the basics of the material. If they seem too easy, then you are on the right track!

Assessment 2: Quizzes

Due Date: Two student-led quizzes in Weeks 3 and 5; two open book quizzes in Weeks 4 and 6

Type: Individual

Weighting: Two student-led quizzes at 2% each; Two open book quizzes at 5% each.

Length: Student-led quizzes: Two MCQs each; Open book quizzes: 15-20 Multiple format questions (MCQ, short answer-SA, and long answer-essay).

Submission Details: Students will submit two questions to the Student-led quiz folder during the week the quiz is due. Open book quizzes will be accessible online, with a time out window of 90 minutes. The quiz will be automatically submitted after 90 minutes regardless of whether you have finished or not.

Feedback Details: You are encouraged to share your comments on the Student-led quiz questions and practice the questions to prepare for the subsequent open-book quiz. You are recommended to seek feedback on your performance in both quizzes from your course convenor.

Aligned CLOs: 1-4

Rationale

The quizzes are designed to assess and consolidate your understanding of the essential knowledge and skills covered in the course. They allow you to receive formative feedback on your performance and seek immediate remedial should there be a need. If they seem too easy, you are on the right track!

Assessment 3: Case study report

Due Date: Sunday 11:59 pm Week 7

Type: Individual

Weighting: 30%

Length: 700-1000 words

Submission Details: Via Moodle/Turnitin

Feedback Details: Students will receive written feedback two weeks after the submission date, together with the marking rubric. General feedback on the class strengths and weaknesses will be provided in the *What's up* forum.

Aligned CLOs: 1-6

Rationale

This assessment task aims to assess the ability to analyse IP strategy, apply a suitable tool to evaluate the relative value of different IP strategies and draw conclusions about their impact on commercialisation models.

Assessment 4: Commercialisation Strategy Plan

Due Date: Team Strategy plan Week 9 Sunday 11:59pm; Team review and feedback of another Team plan Week 10 Sunday 11:59pm; Individual response to feedback and improved final Strategy Plan Week 12 Sunday 11:59pm.

Type: Combination of both groupwork (Team plan; Team review and feedback) and individual (Response to feedback and improved final Strategy Plan)

Weighting: Written Team Strategy plan (25%); Team review and feedback of another Team Plan (5%); Individual response to feedback and improved final Strategy Plan (10%)

Length: 2000 words Report; completed review checklist and 150-word feedback summary feedback; 500-word individual response to feedback

Submission Details: All assignments must be submitted electronically to the Moodle site.

The Commercialisation Strategy Plan file should be named:

TEAMNAME_Assessment3_Report_BABS7020_2021.

Team review and feedback should be named:

TEAMNAME_Assessment3_PeerReview_BABS7020_2021.

Individual response to feedback and improved final Strategy plan should be named:

STUDENTNAME_STUDENTID_Assessment4_Response_BABS7020_2021.

Feedback Details: Written feedback will be provided on the returned work during the grade release period, together with the marking rubric. It is recommended that groups or individual students contact the course convenor with any specific questions.

Aligned CLOs: 1-6

Rationale

This assessment task aims to develop the skills needed to develop a comprehensive strategy plan for an Australian biotech start-up to enter the Australian and Asian markets. Students will also learn to provide and receive constructive feedback both within their team and with other teams in the class.

11. Special consideration/further assessment - Term 2 2021

Students who believe that their performance, either during the session or in the end of session assessments, may have been affected by illness or other circumstances may apply for special consideration. Applications can be made for compulsory class absences such as (laboratories and tutorials), in-session assessments tasks, and final examinations. **Students must make a formal application for Special Consideration** for the course/s affected as soon as practicable after the problem occurs and **within three working days of the assessment to which it refers**. Students should consult the A-Z section of the “Student Guide 2016”, particularly the section on “Special Consideration”, for further information about general rules covering examinations, assessment, special consideration and other related matters. This information is published free in your UNSW Student Diary and is also available on the web at: <https://student.unsw.edu.au/special-consideration>

HOW TO APPLY FOR SPECIAL CONSIDERATION

Applications must be made via Online Services in myUNSW. **You must obtain and attach Third Party documentation before submitting the application. Failure to do so will result in the application being rejected.** Log into myUNSW and go to **My Student Profile tab > My Student Services channel > Online Services > Special Consideration**. After applying online, students must also verify supporting their documentation by submitting to Student Central at <https://nucleus.unsw.edu.au/>

- Originals or certified copies of your supporting documentation. Visit <https://nucleus.unsw.edu.au/Studentadmin/special-consideration>. Student Central can certify your original documents), and/or
- A completed Professional Authority form which can be downloaded at <https://student.unsw.edu.au/sites/all/files/uploads/group47/forms/ProfessionalAuthority.pdf>

The supporting documentation must be submitted to Student Central for verification **within three working days** of the assessment or the period covered by the supporting documentation. Applications which are not verified will be rejected.

Students will be contacted via the online special consideration system as to the outcome of their application. Students will be notified via *their official university email once an outcome has been recorded.*

SUPPLEMENTARY ASSESSMENTS:

The University does not give deferred examinations. However, further assessments and/or exams may be given to those students who were absent from the final sessions through illness or misadventure. Special Consideration applications for final assessments/examinations and in-session tests will only be considered after the final examination period when lists of students sitting supplementary exams/tests for each course are determined at School Assessment Review Group Meetings. Students will be notified via the online special consideration system as to the outcome of their application. **It is the responsibility of all students to regularly consult their official student email accounts and myUNSW in order to ascertain whether or not they have been granted further assessment.**

12. UNSW Academic Honesty and Plagiarism

The University regards plagiarism as a form of academic misconduct and has very strict rules regarding plagiarism. For UNSW policies, penalties, and information to help you avoid plagiarism see: <https://student.unsw.edu.au/plagiarism>

What is Plagiarism?

Plagiarism is the presentation of the thoughts or work of another as one's own. *Examples include:

- direct duplication of the thoughts or work of another, including by copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

For the purposes of this policy, submitting an assessment item that has already been submitted for academic credit elsewhere may be considered plagiarism.

Knowingly permitting your work to be copied by another student may also be considered to be plagiarism.

Note that an assessment item produced in oral, not written, form, or involving live presentation, may similarly contain plagiarised material.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

The Learning Centre website is main repository for resources for staff and students on plagiarism and academic honesty. These resources can be located via:

<http://www.lc.unsw.edu.au/academic-integrity-plagiarism>

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;

- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.