



Course Outline

BABS7010

Introduction to Biotechnology Commercialisation

Core

Graduate Certificate in Commercial Biotechnology
(7066)

Elective

Master of Professional Science
(8958)

School of Biotechnology and Biomolecular Sciences

Faculty of Science

Term 1, 2020

1. Staff

Position	Name	Email	Locations	Consultation Times
Course Convenor	Lisa Selbie, PhD	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)

The course aims to provide you with an opportunity to develop managerial decision-making skills through investigating the global biotechnology industry, its infrastructure, and the barriers and opportunities. Specific attention will be given to the US, European, Australasian and Asian markets. You will be introduced to business theory, management tools and the fundamental principles of biotechnology enterprise. Through assignments and lectures, you will examine issues and challenges that leaders of public and private sector organisations, and communities face when seeking to achieve shared goals within the biotechnology sector. During the course you will also explore how multidisciplinary science and technology is integral to biotechnology product development. The need for intellectual property management, regulatory approvals, effective marketing, equity investment, partnerships and legal for successful biotechnology commercialisation will be discussed in a global context.

2.2 Course aims

To give students an understanding of:

- The scope and significance of the Australian and global biotechnology industry and the internal and external drivers that affect its performance
- The managerial decision-making skills required to examine issues and challenges that leaders of public and private sector organisations, and communities face when seeking to achieve shared goals within the biotechnology sector.

2.3 Course learning outcomes (CLO)

At the successful completion of this course you (the student) should be able to:

1. Synthesise the characteristics of the global biotechnology industry to identify influences and implications to the process of translating an opportunity to the marketplace globally and in the Australasian region.
2. Investigate opportunities and challenges facing global biotechnology companies, and strategies for a successful translation of these opportunities to the marketplace globally and in the Australasian region.
3. Evaluate how science, technology and business discipline interplay and contribute to the sustainability and profitability of a global biotechnology company to inform decision-making relating to the process of translating an opportunity to the marketplace.
4. Examine ethical considerations of biotechnology products and services in the global and Australasian regional markets and how to address them.
5. Develop and communicate a Business Analysis Report for a given biotechnology company to inform the company's development.
6. Demonstrate effective teamwork skills through collaborating with peers, and providing and receiving feedback.

2.4 Relationship between course and program learning outcomes and assessments

Course Learning Outcome (CLO)	LO Statement	Related Tasks & Assessment
CLO 1	Synthesise the characteristics of the global biotechnology industry to identify influences and implications to the process of translating an opportunity to the marketplace globally and in the Australasian region.	Lectures and discussions Assessments 1-3
CLO 2	Investigate opportunities and challenges facing global biotechnology companies, and strategies for a successful translation of these opportunities to the marketplace globally and in the Australasian region.	Lectures and discussions Assessments 1-3
CLO 3	Evaluate how science, technology and business discipline interplay and contribute to the sustainability and profitability of a global biotechnology company to inform decision-making relating to the process of translating an opportunity to the marketplace.	Lectures and discussions Assessments 1-3

CLO 4	Examine ethical considerations of biotechnology products and services in the global and Australasian regional markets and how to address them.	Lectures and discussion Assessment 1 and 3
CLO 5	Develop and communicate a Business Analysis Report for a given biotechnology company to inform the company's development.	Assessment 3
CLO 6	Demonstrate effective teamwork skills through collaborating with peers, and providing and receiving feedback.	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 lectures and videos, reading relevant articles and websites, participating in the discussion learning forums, completing online timed quizzes, and completing 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

Week(s)	Themes & Topics
1 17 Feb	Introduction to the course plus Theme 1: Overview of the biotechnology industry Topic 1: Introduction to the global biotechnology industry Topic 2: The landscape of the global biotechnology industry Assessment 1: Required Discussion Participation
2-3 24 Feb	Theme 2: Overview of the biotechnology commercialisation process Topic 1: Stages in the commercialisation process Topic 2: Science and business disciplines involved in the commercialisation process Topic 3: Leadership and entrepreneurship in the distinct global biotechnology markets Assessment 1: Required Discussion Participation Quiz 1: on Weeks 1, 2 & 3 due end of Week 4
4 9 Mar	Theme 3: Intellectual property (IP) management Topic 1: Identification of innovation potential Topic 2: IP opportunities and potentials in the marketplace Topic 3: IP management strategies Assessment 1: Required Discussion Participation Assessment 2: Critical Review due end of Week 5
5-6 16 Mar	Theme 4: Considerations in starting and operating a biotechnology business Topic 1: Regulatory and legal issues and considerations in global markets Topic 2: Marketing of biotechnology products and services Topic 3: Financial considerations in funding and operating a biotechnology business Topic 4: Debrief of Assessment task 3 Business Analysis Report – Team formation and planning Assessment 1: Required Discussion Participation Assessment 3: Business Analysis Team Report begins (due Weeks 9-12) Quiz 2: on Weeks 4 & 5 due end of Week 6
7 30 Mar	Theme 5: Business Analysis Plans Topic 1: Components of a Business Analysis Plan Topic 2: SWOT analysis Topic 3: Considerations in implementing a Business Analysis Plan Assessment 1: Required Discussion Participation
8 13 Apr	Theme 6: Professional ethics in the biotechnology industry Topic 1: Ethical principles and considerations in international research and business. Topic 2: Ethical considerations of biotechnology products and services Assessment 1: Required Discussion Participation Quiz 3: on Weeks 6, 7 & 8 due end of Week 9
9 20 Apr	Theme 7: Professional communication competency Topic 1: Professional communication methodologies Topic 2: Professional presentation skills: Pitching presentations Assessment 1: Required Discussion Participation Assessment 3: Business Analysis Team <u>Written Report</u> due end of Week 9
10 27 Apr	Theme 8: Professional development in the biotechnology industry Topic 1: Opportunities for professional development Topic 2: Reflection of learning and own professional development Assessment 3: Business Analysis Team <u>Peer Review Feedback</u> due end of Week 10
11 4 May	Study period to incorporate Assessment 3 Peer Review Feedback into Individual Oral Presentation due in Week 12
12 11 May	Assessment 3: Business Analysis Report <u>Individual Oral Presentations</u> due Course completed on Saturday 16 May

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. Three student-led practice quizzes in Wk 3, 5, 8 (1% each), followed by three online open book quizzes in Wks 4, 6 & 9 (4% each).	15 %	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.
	B: Discussion forums (2% x 10 weeks)	20 %			
Assessment 2: Individual. Critical review: A review of business issues discussed in an article from a scholarly source	20%		Via Moodle/Turnitin	Feedback – Rubric comments in Week 9 All uploaded on Moodle	Week 5 By Sunday 11:59 pm
Assessment 3: Team Business Analysis Report	A: Written Team Report	20 %	Via Moodle/Turnitin	Feedback – Rubric comments in Week 10	Week 9 By Sunday 11:59 pm
	B: Team review and feedback of another Team report	10 %	Via Moodle/Turnitin	Peer Review feedback available Week 11.	Week 10 By Sunday 11:59 pm
	C: Individual oral presentation of the Business Analysis	15 %	Individual Oral Presentation via Voicethread online	Feedback during class discussion	Week 12 By end of the course

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.

Further information

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

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

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
 - 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>

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

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 learning activities

Due Date: varied

Type: Individual

Weighting:

a, Three student-led practice quizzes in Weeks 3, 5, 8 (1% each), followed by three online open book quizzes in Weeks 4, 6 & 9 (4% each). The quizzes cover the content delivered during the previous weeks.

b, Discussion forums (2% x 10 weeks)

Submission Details: Students will submit practice 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 - quiz will be automatically submitted after 90 minutes regardless you have finished or not. Contributions to the weekly discussion forum are posted to the designated discussion forums; links are provided in each topic.

Feedback Details: General feedback summarising class strengths and weaknesses will be provided at the start of the following week. Quiz marks will be returned at the start of the following week after the quiz deadline. You are encouraged to seek feedback on quiz questions and answers in the general *What's up* forum, so that any discussions are available and can be of benefit to all students.

Assessment 2: Critical review

Due Date: Week 5, Sunday 11:59pm

Type: Individual

Weighting: 20%

Length: 700-1000 words

Submission Details: Students should submit their assignment electronically to the Critical review Assessment task folder. Assessment files should be named: STUDENTLASTNAME_Assessment2_BABS7010_2020

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

Assessment 3: Business Analysis Report

Due Date: Team report Week 9 Sunday 11:59pm; Team review and feedback of another Team report Week 10 Sunday 11:59pm; Individual oral presentation of the Business Analysis Week 12 Last day of class 11:59pm

Type: Combination of both groupwork (Team report; Team review and feedback) and individual (Oral presentation of the Business Analysis)

Weighting: Team report 20%; Team review and feedback of another Team report 10%; Individual oral presentation of the Business Analysis 15%

Length: 2000 words Report; completed review checklist and 150-word feedback summary; 15-minute presentation

Submission Details: All assignments must be submitted electronically to the relevant assessment folders.

The Business Analysis Report file should be named:

TEAMNAME_Assessment3_Report_BABS7010_2020.

Team review and feedback should be named:

TEAMNAME_Assessment3_Feedback_BABS7010_2020.

Presentation video, with any supplementary document such as PowerPoint slides should be named: STUDENTLASTNAME_Assessment3_OralPresentation_BABS7010_2020.

Feedback Details: Written feedback will be provided on the returned work during the grade release period, together with the marking rubric. General feedback will be provided in the *What's up* forum. It is recommended that students discuss the feedback in their group. Students may contact the instructor with any specific questions.

11. Special consideration/further assessment - Term 1 2020

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.