



Course Outline

BABS3031/ BABS3631

Biotechnology and Bioengineering
Biotechnology and Bioengineering (Advanced)

School Biotechnology and Biomolecular Sciences

Faculty of Science

Term 2, 2021

1. Staff

Position	Name	Email	Locations	Consultation Times
Course Convenor	A/Prof. Christopher Marquis	c.marquis@unsw.edu.au	D26, Level 3 320A	By appointment

Please refer to the course manual or Moodle site for demonstrators/ tutors involved in this course.

2. Course information

Units of credit: 6

Pre-requisite(s): General science background in biosciences to stage 2

Standard Grading (HD, DN, CR, PS, FL) will apply to this course in 2021

Teaching times – Note, at the time of writing this document, it was assumed that the course will be delivered entirely on-line in 2021

- Lectures: Mon 9-11, Tues 9-10
 - Online via Collaborate Ultra in Moodle – Attendance expected, sessions recorded for asynchronous access. Lectures will be live: not pre-recorded
- Tutorials: Open Q&A sessions to be organised for on-line interaction in Week 1 to assist with understanding solutions to tutorial questions or help with assignments. Likely Mondays and/or Tuesdays
 - Extra ad hoc tutorials to be organised for BABS3631
- Labs: Wed 10-1 or Wed 2-5 : Attend one only
 - In class attendance and On-line Delivery (Weeks 1-9) – Attendance compulsory

2.1 Course summary

In order to bring new biotechnology products to the market, scalable bioprocesses must be developed and validated. This course covers the bioprocessing and economic principles involved in the operation,

3. Strategies and approaches to learning

3.1 Learning and teaching activities

Throughout the course, students are encouraged to develop problem-solving skills and to critically evaluate concepts, ideas and research results by participating in all face-to-face activities such as lectures, tutorials and practical classes. As a result of the current restrictions due to COVID-19, the course in 2021 is designed for hybrid delivery. Course resources will all be made accessible via the course Moodle page.

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students are encouraged to think about processes of experimental enquiry.

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, which is monitored regularly. If more help is needed, students may send enquiries or requests for appointments from their UNSW email. 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 the course authority if in doubt as to their progress.

4. Course schedule and structure

This course consists of 57 hours of class contact hours. You are expected to take an additional 60-80 hours of non-class contact hours to complete assessments, readings and exam preparation.

Week	Lecture 1 (1hrs) Monday 9 -11	Lecture 2 (2hr)
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Week 8	Filtration and Diafiltration	Calculations on cross-flow filtration and diafiltration	1h/wk Problem-Solving Tutorial Sheet 6	Wet Lab (Lab 11, E26) Cellulose Hydrolysis I and II
Week 9	Process Chromatography	Calculations for sizing and running chromatography processes. Purification cases studies	1h/wk Problem-Solving Tutorial Sheet 7	Lab Review
Week 10	Biotherapeutics Processing	Biotherapeutics, validation and single-use bioprocess units. Course Summary	1h/wk Problem Solving Tutorial Sheet 8	No Class
Week 11	Stuvac No class	No class	No class	No class
Week 12	Exam Period No class	No class	No class	EXAM/QUIZ (Weeks 7,8,9,10)

5. Assessment

5.1 Assessment tasks

BABS3031

Assessment task and methods	Weighting (%)	Submission methods	Mark and feedback methods	Week due
Formative assessments				
Assessment : On-line Stack Questions on Units and Dimensionless Numbers	0	Online submission by the end of week 2 though not compulsory	No mark. Work checked for completion	2

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Assessment task and methods	Weighting (%)	Submission methods	Mark and feedback methods	Week due
Formative assessments				
Assessment 1: On-line Stack Questions on Units and Dimensionless Numbers	0	Online submission by the end of week 2	No mark. Work checked for completion	2
Summative assessments				

Assessment 1: A) Kinetics solutions using Berkley Madonna
 Assessment on bioprocess kinetics and mRNA processes

B) Project:2u6.1 (ess02 Tc 0.0025 TD [(M)1.8 TD [(E 8[94 (e)6.1(us)-2 ((eyg6 (on))Tj -0.00

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 scientific content which is delivered through on-line lectures and other on-line material. This will be assessed by two quizzes and one exam, all undertaken on-line in Moodle, which will take the form of multiple choice and short answer questions. Another component is the laboratory work which will be assessed by written assignments since this is considered relevant to this material. 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).

All assessments must be completed/attempted in order to pass the course though it is not essential to pass each course component. The course will have standard grading (HD, DN, CR, PS, FL) in 2021.

5.3 Submission of assessment tasks

Assignment submission

All assignments and quiz questions (multiple choice and short answer) will be submitted via Turnitin on Moodle (also please refer to the table provided in section 5.1). Requests for an extension of assignment deadline must be made direct to the course convenor. A request may not be granted unless evidence for the reason for late submission is supplied. Standard penalties for late submission are 5% per day including weekends.

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.

A document will be posted on the Moodle Site to fully explain the Special Consideration Procedure. Information can also be accessed [here](#). In particular, for issues relating to on-line quizzes please note the following:

If a student experiences a technical or connection problem during an online assessment, they should take the following steps:

1. *Take screenshots of as many of the following as possible:*
 - *error messages*
 - *screen not loading*
 - *timestamped speed tests*
 - *power outage maps*
2. *If the Course Coordinator or Tutor is present online during the assessment in chat, make contact immediately and advise them of the issue.*
3. *Submit a Special Consideration application immediately at the conclusion of your assessment and upload your screenshots*

5.4. Feedback on assessment

Students will receive constructive feedback

6. Academic integrity, referencing and plagiarism

There's no recommended referencing style 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 [1.3 \(t\)3.6 \(he\)6.129.1 \(r\)-1001 Tc -0.003 Tw -4 -02 Tc 0.00r 1 Tfnu/reft 9 Tw -44.55](#)

8. Readings and resources

Text Books and Course Manuals

This course has a suggested textbook to assist students' learning Bioprocess Engineering Principles (2nd Edn. Preferably) by Pauline Doran (Elsevier). This is available from UNSW bookshop and UNSW library at open reserve/ high use collection. It is not essential to purchase this book. A week-by-week course reading list is provided, which includes some sections from the main text, whereby recommended readings for each week are specified. All readings can be accessed here:

https://ap01-a.alma.exlibrisgroup.com/leganto/public/61UNSW_INST/lists/32765799800001731?auth=local

Course Website (Moodle)

All students enrolled in courses offered at BABS will have access to the course Moodle site <https://moodle.telt.unsw.edu.au>. Please check this site regularly! This site will be used to distribute course notes and information and should be checked at regular intervals. This includes:

- Lecture handouts and lecture recordings
- Practical notes

- pre-

9. Administrative matters

Biosciences Student Office

Student Advisor (BABS)

Email: BABStudent@unsw.edu.au

Tel: +61 (2) 9385 8047

School Grievance Officer

Dr. Megan Lenardon

Email: m.lenardon@unsw.edu.au

Tel: +61 (2) 9385 1780

School Contact

Director of Teaching

Email: BABSteaching@unsw.edu.au

Faculty Contact

Associate Dean Teaching

Email: a.beavis@unsw.edu.au

Additional Websites

- BABS Office: <https://www.babs.unsw.edu.au/contact-babs>
- School of Biotechnology & Biomolecular Sciences: <https://www.babs.unsw.edu.au/>
- MyUNSW: <https://my.unsw.edu.au/>

10. Special Consideration

Students who believe that their performance, either during the session or in the end of session exams, 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.

You must submit the application prior to the start of the relevant exam, or before a piece of assessment is due, except where illness or misadventure prevent you from doing so. If you become unwell on the day of the exam or fall sick during an exam, you must provide evidence dated within 24 hours of the exam, with your application. You must obtain and attach Third Party documentation before submitting the application. Failure to do so may result in the application being rejected.

UNSW has a fit to sit/submit rule which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so.

Further information on special consideration can be found at <https://student.unsw.edu.au/specialconsideration>

HOW TO APPLY FOR SPECIAL CONSIDERATION

The application must be made through Online Services in [myUNSW](#) (My Student Profile tab > My Student Services > Online Services > Special Consideration).

Students will be contacted via

11. Additional support for students

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