



Course Outline

BABS3041

Immunology

School of Biotechnology and Biomolecular
Sciences

Faculty of Science

Term 1, 2019

1. Staff

Position	Name	Email	Location	Consultation Times
Course Convenor and lecturer	Dr Li Zhang	l.zhang@unsw.edu.au	Room 4106, Bioscience South E26	By appointment
Lecturer	A/Prof Andrew Collins	a.collins@unsw.edu.au	Room 138, Biological Sciences Link Wing	By appointment
Lecturer	Prof Anthony Kelleher	t.kelleher@cfi.unsw.edu.au	By appointment	
Lecturer	Prof Stuart Tangye	s.tangye@garvan.org.au		
Lecturer	A/Prof William Sewell	w.sewell@garvan.org		

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

2. Course information

Units of credit: 6

Pre-requisite(s): BIOC2101 or (BIOC2181 and MICR2011) or (BIOC2181 and BABS2202)

Teaching times and locations: Please refer to the course manual.

2.1 Course summary

BABS3041 provides a broad and in-depth coverage of immunology. The course is for students majoring in Medical Microbiology, Medical Microbiology and Immunology, Biotechnology, Biomolecular Science, Medical Science and other areas related to human health who are interested in gaining knowledge in Immunology.

BABS3041 consists of 24 one-hour lectures and 9 four-hour practical classes. The course will first introduce the multiple components of the immune system, their functions, interactions and regulations during immune responses. Then the applied and clinical aspects of immunology will be introduced, including allergy, immunodeficiency, immune system and cancer, vaccination, autoimmunity, engineering antibodies, diagnostic immunology and immunological research strategies. The practical classes introduce students to critical immunological techniques such as immune cell stimulation, immunological assays and flow cytometry. The course also introduces students to critical evaluation of immunological issues of community importance and literature.

2.2 Course aims

This course provides students with a broad and in-depth understanding of the immune system and its functions. It also introduces students to the applications related to the immune system and immunology research.

2.3 Course learning outcomes (CLO)

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

1. Describe different components of the immune system and their responses to infection and cancer.
2. Explain how immunological abnormalities may cause human diseases and how immunological interventions may prevent and treat human diseases.
3. Apply diagnostic laboratory techniques to diagnose immunological disorders.
4. Plan laboratory experiments and interpret experimental data on research in immunology.
5. Critically evaluate scientific literature in immunology and immunological issues of community importance.

2.4 Relationship between course and program learning outcomes and assessments

Course Learning Outcome (CLO)	CLO Statement	Program Learning Outcome (PLO)	Related Tasks & Assessment
CLO 1	Describe different components of the immune system and their responses to infection and cancer		Test 1, test2 and final exam
CLO 2	Explain how immunological abnormalities may cause human diseases and how immunological interventions may prevent and treat human diseases.		Test 1, test 2 and final exam
CLO3	Apply diagnostic laboratory techniques to diagnose immunological disorders.		Test1, test2 and final exam
CLO 4	Plan laboratory experiments and interpret experimental data on research in immunology		The assignment and final exam
CLO 5	Critically evaluate scientific literature in immunology and immunological issues of community importance		The assignment and final exam

3. Strategies and approaches to learning

3.1 Learning and teaching activities

BABS3041 uses Blended Learning strategy, combining face to face teaching with online learning materials and activities.

Lectures are delivered face to face and lecture notes are available on the course Moodle website. All lectures are recorded and available via Moodle course site, providing flexibility and further assisting students' learning. Practical classes consist of laboratory-based experiments and computer-based classes. Other on-line learning activities and materials will be provided during the course.

You can access Moodle site for this course via the UNSW website using your UniPass.

3.2 Expectations of students

Students are expected to be regular and punctual in attendance at all classes. The external lecturers in this course are esteemed clinicians and researchers and are taking time from their research to give lectures, so it is common courtesy to show appreciation by being present in the lectures.

Lectures, as well as providing facts, will provide an understanding of processes by which scientific enquiries and discoveries are made. By referring to examples, lecture material should illustrate how scientific theories can be developed from experimental results. The possibilities for alternative interpretations yielding controversy in theories, especially in certain fields of current interest will be presented. Following such examples, students are encouraged to undertake similar enquiry themselves, depending on their interests.

Laboratory classes will complement lecture materials and will provide opportunities for students to have hands-on experience and gain deeper understanding of biological systems. Therefore, attendance laboratory class is mandatory. By participating in the laboratory investigations, students are encouraged to think about processes of experimental enquiry.

All students are required to achieve a satisfactory performance in all components of the subject. Students who have achieved an aggregate mark of 50% or more overall, but only obtain a mark of 45% or less in the final theory examination or have an unsatisfactory performance in other components of the subject, may fail outright or be required to undertake further assessment (the special circumstances need to be taken into consideration).

Students are encouraged to consult with the course authority if in doubt as to their progress.

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. These are 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.

4. Course schedule and structure

This course consists of 7 hours of class contact hours. Additional non-class contact hours will be required to complete assessments, readings and exam preparation.

Week	Lecture 1	Lecture 2	Lecture 3	Practical (4hrs)
Week 1	Overview and Innate immunity I	Innate immunity 2	Adaptive immunity	
Week 2	Anatomy of the immune system	Antibody structure and function 1	Antibody structure and function 2	Cells and tissues of the immune system
Week 3	Study time for test 1	T cell function 1	T cell function 2	Modelling the immune system and tetanus tutorial Test 1
Week 4	Cytokines	MHC and antigen presentation	Mucosal immunity	Bioinformatics
Week 5	Study time for test 2	The immune response to infection 1	The immune response to infection 2	Cell counting Test 2
Week 6	Immune evasion	Inherited Immunodeficiency	Tolerance and autoimmunity	Isolating and activating splenocytes
Week 7	Vaccination	Secondary immunodeficiency	Consultation time for the assignment	Measurement of IL-2
Week 8	Allergic disease	Diagnostic Immunology	Immune system and cancer	Flow cytometry

Week 9	Engineering antibodies	Immunological research strategies	Course review	Taking care of your immune system
Week 10				Clinical cases

5. Assessment

5.1 Assessment tasks

Assessment task and methods	Weighting (%)	Submission methods	Mark and feedback style	Week Due
Assessment 1: Test 1	15	Course coordinator and tutors collect the test paper during a prac class time.	Assessed by the course convenor. Mark and feedback released online in Moodle in week 5. Individual feedback provided upon students' request.	3
Assessment 2: Test 2	15	Course coordinator and tutors collect the test paper during a prac class time.	Assessed by the course convenor. Mark and feedback released online in Moodle in week 7. Individual feedback provided upon students' request.	5
Assessment 3: Practical Assignment	15	On-line in Moodle and a hard copy to the student office.	Assessed by the course convenor. Mark and feedback released online in Moodle in week 10. Individual feedback provided upon students' request.	8
Assessment 4: Final Exam	55	Written examination conducted during final examination period.	Mark/grade released to students on official assessment results release date.	

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 lectures and on-line materials. This will be assessed by written assignments and exams. The laboratory work which will be assessed by written assignments. 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

Assignment submission

Details on assignment submission are given in the course manual or online via Moodle (also please refer to the table provided in section 5.1). For assignments that are to be submitted to the Biosciences Student Office (BSO, G27, Biological Sciences Building), students are required to attach and complete a cover sheet which is available from both Student Office and online via Moodle.

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.

Further information is provided in the course manual.

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 will be provided in the course manual and on the course Moodle site.

6. Academic integrity, referencing and plagiarism

Students are recommended to use 'Journal of Immunology'. Students will be provided with more information during the course.

Journal of Immunology: <http://www.jimmunol.org/>

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'

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

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

Text Books and Course Manuals

This course offers a text book to assist students' learning:

- **Janeway's Immunobiology 9th Edition. Kenneth Murphy. 2017. Garland Science, Taylor & Francis Group, LLC.**

This text book is available from UNSW bookshop and UNSW library at open reserve/ high use collection. The course manual containing materials for tutorial and practical classes is available for purchase through the UNSW bookshop or through download via Moodle. Any additional resources will be provided by individual lectures during lectures and online via Moodle.

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>. This site will be used to distribute course notes and information and should be checked at regular intervals. This includes:

- Announcements
- Lecture handouts
- Practical notes
- Tutorial notes
- Assessments - detailed information
 - marks
 - further information resulting from special consideration
- Information about examination arrangements
- Self-management resources
- Discussion forums

Resources

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

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

Study Areas

There are study areas where students can study or relax on the ground floor and first floor of the Biological Sciences Building, E26.

8. Administrative matters

Biosciences Student Office

Student Advisor (BABS)

Email: BABStudent@unsw.edu.au

Tel: +61 (2) 9385 8915

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>
- 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>