



**Faculty of Medicine & Health  
School of Medical Sciences**

# **PATH3209**

## **Clinical Immunology**

**Course Outline**

TERM 3, 2021

CRICOS Provider Code 00098G

# Clinical Immunology Course Outline

## PATH3209

2021

### **Preface**

This is the 1<sup>st</sup> edition of the course outline for PATH3209 Clinical Immunology course by the staff of the Department of Pathology at the University of New South Wales. It contains all the relevant information regarding this course.

We recognise that this course outline might contain some errors and may need further improvements in the future. Therefore, we welcome comments from staff and students and seek your co-operation in identifying errors of content or style, so that they may be corrected in subsequent editions.

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## Introduction

We would like to warmly welcome third year students to this **Clinical Immunology** course, offered by the Department of Pathology. The course covers Immunodeficiency, Hypersensitivity disorders, Autoimmunity, Immunotherapy, Systems Immunology and Vaccine development in clinical and research contexts.

This course will be beneficial to students wishing to pursue careers in the health sciences, especially medicine (particularly immunology, infectious diseases and immunopathology), a wide range of cutting-edge biomedical research including systems immunology, vaccine design and immunotherapy or pursue careers in clinical diagnostic laboratories. A sound understanding of clinical immunology should provide an effective framework from which to approach diagnosis and management of common clinical scenarios that you may well encounter in your future careers.

Staff of the Department of Pathology joins us in wishing you an interesting and enjoyable term.

Patsie Polly, Fabio Luciani and Rowena Bull  
Course Convenors – PATH3209

Please read this outline in conjunction with the following pages on the [School of Medical Sciences website](#)

- [Advice for Students](#)
- [Learning Resources](#)

(or see "STUDENTS" tab at [medicallsciences.med.unsw.edu.au](http://medicallsciences.med.unsw.edu.au))

## Official Communication by email

All students in course PATH3209 are advised that email is now the official means by which the School of Medical Sciences at UNSW will communicate with you. All email messages will be sent to your official UNSW email address (e.g., [z1234567@student.unsw.edu.au](mailto:z1234567@student.unsw.edu.au)) and, if you do not wish to use the University email system, you MUST arrange for your official mail to be forwarded to your chosen address. The University recommends that you check your mail at least every other day. Facilities for checking email are available in the School of Medical Sciences and in the University library. Further information and assistance are available at [Email for Students and Staff | UNSW IT | UNSW Sydney](#). The UNSW Library runs free email courses.

## Course Outline

### Campus based staff

Prof Patsie Polly (course convenor), A/Prof Rowena Bull (course co-convenor), A/Prof Fabio Luciani (course co-convenor), Prof Miles Davenport, Prof Nicodemus Tedla, A/Prof Cristan Herbert, A/Prof Cecile King, A/Prof Nadeem Kaakoush.

### Off campus contributors

A/Prof Elissa Deenick, A/Prof Cindy Ma, Dr Joanne Reed, Prof Denis Wakefield. Dr Orazio Vittorio, Dr Brynn Weinstein.

### Course administration

Administrative and general problems related to your attendance, or the content and conduct of the course, can in the first instance be addressed by consulting Prof Patsie Polly or A/Prof Rowena Bull or A/Prof Fabio Luciani by e-mail ([patsie.polly@unsw.edu.au](mailto:patsie.polly@unsw.edu.au); [r.bull@unsw.edu.au](mailto:r.bull@unsw.edu.au); [luciani@unsw.edu.au](mailto:luciani@unsw.edu.au)) and in the second instance be addressed by consulting A/Prof Cristan Herbert, Head of Teaching in the Department of Pathology ([c.herbert@unsw.edu.au](mailto:c.herbert@unsw.edu.au)) or A/Professor Shane Thomas, Head of the Department of Pathology ([shane.thomas@unsw.edu.au](mailto:shane.thomas@unsw.edu.au)). Students wishing to see their tutors or other members of staff should contact staff directly via email.

For SOMS student administrative matters, please submit enquiries online via UNSW Student Portal Web Forms <http://unsw.to/webforms>

Attendance is **mandatory** for all tutorial and practical classes in this course and students are **highly advised to attend all lectures** (<https://student.unsw.edu.au/attendance>). Students that fail to attend >80% of the tutorials and practical classes (especially where examinable assessment tasks are scheduled) may not be allowed to complete the course.

Complaints about the course that cannot be resolved through discussion with the course convenors, they may contact the School's Grievance Officer, Prof Nick Di Girolamo ([n.digirolamo@unsw.edu.au](mailto:n.digirolamo@unsw.edu.au)). If students have difficulties of a personal nature, they should contact UNSW Psychology and Wellness (formerly CAPS - Counselling & Psychological Services)

<https://nucleus.unsw.edu.au/en/student-wellbeing/counselling-and-psychological-services>

If a student(s) wants to have a result reviewed (checking of marks and/or reassessment), they should formally apply through <https://my.unsw.edu.au/student/academiclife/assessment/Results.html>

To appeal academic standing or ability to progress visit

<https://my.unsw.edu.au/student/academiclife/assessment/academicstandinghowtoappeal.html>

Should you feel that there are circumstances that have affected your performance and completion of assessment in the course, you should lodge an application for special consideration within the application timeframe. Please visit Special Consideration website for more details on eligibility and application procedures <https://student.unsw.edu.au/special-consideration>

Information on the different research units in the Department of Pathology and the research interests is available at <http://medicallsciences.med.unsw.edu.au/>

### Conditions for Course Enrolment

This course is offered during term 3 and carries six units of credit. Successful completion of basic immunology in term 1 of the third year (BABS3041) is the prerequisite for enrolment to this course.

An introduction to basic diseases processes in term 3 of the second year (PATH2201) and Molecular basis of Disease in term 1 of the third year (PATH3205) is highly recommended.

Basic understanding of cell and molecular biology and chemistry, as well as evolutionary and functional biology. These are available in level 1 courses including: BABS1201, BIOS1101, CHEM1011 and CHEM1021 or higher.

## Course Outline

Advanced knowledge of molecular biology, good understanding of pathological basis of diseases and sound knowledge of immunology, microbiology and biochemistry that are available in level 2 courses: BABS2202, PATH2201, MICR2011, ANAT2241, BIOC2181 or BIOC2101 and level 3 courses: BABS3041, PATH3205, BABS3081 and MICR3061.

The compulsory level 1 to 3 course pre-requisites leading to PATH3209 are:

Level 1: BABS1201 and CHEM1011 (equivalent or higher) \*CHEM1021 (equivalent or higher) is only needed if taking BIOC2101 in level 2

Level 2: BIOC2101 or (BIOC2181 and MICR2011<sup>^</sup>) or (BIOC2181 and BABS2202)

<sup>^</sup> MICR2011 is not part of Immunology major but all the other 3 courses are.

Level 3: BABS3041

PATH2201 and PATH3205 are advertised Recommended Courses in the Handbook.

### Course objectives

PATH3209 introduces students to current concepts, clinical practice and cutting-edge research in clinical immunology. This includes pathogenetic mechanisms of immunological disorders such as immunodeficiency, hypersensitivity reactions, autoimmunity, infection, cancer immunology, immunotherapy, systems immunology, big data analysis and vaccine designs.

### Graduate attributes

The students will be encouraged to develop the following Graduate Attributes by undertaking the selected activities and knowledge content. These attributes will be assessed within the prescribed learning outcomes and assessment tasks.

1. An in-depth engagement with the relevant disciplinary knowledge in its interdisciplinary context.
2. The capacity for analytical and critical thinking, as well as for creative problem solving
3. The ability to engage in independent, team-based and reflective learning
4. The skills of effective communication

### Student learning outcomes

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

1. Explain how immunological investigations are employed to establish a clinical diagnosis
2. Describe the sensitivity, specificity, cost effectiveness and availability of immunodiagnostic tools in the diagnosis of common immunological disorders
3. Evaluate the impact of recent advances in clinical immunology including systems immunology, big data analysis, immunotherapy and immunodiagnostics
4. Demonstrate written and oral skills in scientific communication
5. Demonstrate skills in peer review and assessment of scientific research

### Rationale for the inclusion of content and teaching approach

The intended learning outcomes are achieved through study of the common patterns of response(s) to disease, which are often referred to as pathological processes. In depth study of mechanisms and causes unique to the immune system are highlighted in context of the general pathological processes. To understand these processes, you will draw on your knowledge of normal immunology, histology, biochemistry, physiology, general pathology and cell biology.

## Teaching strategies

The course employs a variety of teaching modes in order to facilitate student learning:

1. A series of lectures will introduce students to: specific examples of disease processes affecting the immune system; current advanced immuno-diagnostic tools; and cutting-edge research and clinical practice. These lectures will be delivered by campus-based and invited discipline experts.
2. Tutorials will be designed around team-based collaborative learning. These small group tutorials will include a series of topical quizzes to be completed individually and as a team. It is anticipated that students will have an enhanced learning experience using team-based learning and peer teaching. The tutorials are intended to extend and amplify students' understanding of material presented in lectures in an interactive format. Students will have opportunities to seek clarification on any aspect of the topics covered, as well as to address concepts that might be difficult to grasp.
3. Practical classes that incorporate clinico-immunological correlation sessions that are intended to allow students to apply their understanding of immunological processes and current immunodiagnostics in context of relevant clinical conditions. Hands-on computational and statistical analyses will be utilised to assess host-pathogen interaction, vaccine design and efficacy.
4. Team project based on cutting edge topics in immunology, facilitated by one mentor per group, that includes submission of a written research project designed, delivered and evaluated by students working in small groups and assessed by student peers, mentors and course conveners.
5. Learning is supported via a Moodle module (accessible via student number and zPass at <https://moodle.telt.unsw.edu.au/>). Announcements, timetables, lecture slides and other resources will be made available during the course.
6. The PATH3209 student manual contains specific learning objectives for tutorials and practical classes, together with the course timetable and useful background information.

## Recommended Text

Students are expected to use the following texts:

*Abul K Abbas, Andrew H Lichtman and Shiv Pillai. Basic Immunology: Functions and Disorders of the Immune System. 6th Ed. 2019.* This textbook is recommended for students with limited exposure to immunopathology. It provides background on the immunopathology, clinical features and diagnosis of human diseases. Free access to a digital version is available through the UNSW library home page

Students who would like to study the clinical immunology in greater detail may wish to purchase the following textbook:

*Janeway's Immunobiology 9th Edition, Kenneth Murphy. 2017, Garland Science, Taylor & Francis Group, LLC.* The print version of the text is also available by searching for *Janeway's Immunobiology* on the UNSW library home page.

Print:

<https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780815345510>

Digital:

<https://unswbookshop.vitalsource.com/products/-v9781315533247>

## Additional Learning Resources

In addition, there are many resources available on the web, which vary from simple patient information brochures to on-line immunology courses to information on the latest research. Some general sites you may find useful are:

Medline Plus ('health topics' index of disease with information)

<http://www.nlm.nih.gov/medlineplus/healthtopics.html>



## Research opportunities

Opportunities exist for all students wishing to undertake undergraduate and postgraduate research programs within the School of Medical Sciences. Information can be accessed via the Faculty of Medicine and Health directory for the School of Medical Sciences at:

<https://medicallsciences.med.unsw.edu.au/research>

Students are also encouraged to communicate with invited guest lecturers directly or through the following sites: <https://kirby.unsw.edu.au/program/visp>; <https://kirby.unsw.edu.au/program/iap>;

<https://kirby.unsw.edu.au/program/ivpp>; <https://www.garvan.org.au/research/immunology>

## Course Evaluation and Development

Periodically student evaluative feedback on the course is gathered, using [myExperience](#), from student representatives and an in-house course evaluation questionnaire. Student feedback is highly valued, and continued improvements are made to the course based on such feedback.

## Equitable Learning Services

Students who have a health condition that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convenor prior to, or at the commencement of, their course, or with Equitable Learning Services (<https://student.unsw.edu.au/els>).

Issues that can be discussed may include access to materials, signers or note-takers, the provision of services and additional examination and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

Any student having trouble with the course should discuss this either with the Convenors of PATH3209 Prof Patsie Polly, A/Prof Rowena Bull or A/Prof Fabio Luciani, Head of Teaching A/Prof Cristan Herbert or the Head of Department A/Prof Shane Thomas.

## Important links for student services, systems and teaching technology

- Key Dates <https://student.unsw.edu.au/dates>
- Transitioning to Online Learning <https://www.covid19studyonline.unsw.edu.au/>
- Guide to Online Study <https://student.unsw.edu.au/online-study>
- UNSW Student Life Hub <https://student.unsw.edu.au/hub#main-content>
- Student Support and Development <https://student.unsw.edu.au/support>
- IT, eLearning and Apps <https://student.unsw.edu.au/elearning>
- Student Support and Success Advisors <https://student.unsw.edu.au/advisor>

## PATH3209 Course Timetable

Week	Date	Time	Location	Lecturer	Class	Title
1	13/09 Mon	9-10	MS Teams	Polly / Luciani / Bull	Seminar	Course orientation and prelude to student team projects
<b>Overview: Immunity, Immune Responses, Immunodeficiency</b>						
1	13/09 Mon	11-12	MS Teams	Bull	Lecture	Review of innate and adaptive immunity
	13/09 Mon	12-1	MS Teams	Luciani	Lecture	Immune responses: friends or foe?
	16/09 Thurs	12-1	MS Teams	Deenick	Lecture	Immunodeficiency
	17/09 Fri	9-11	MS Teams	Arroyo/Adikari	Tutorial/Quiz 1	Background knowledge Online immunodeficiency
<b>Module 1: Inflammatory Hypersensitivity (Innate) / Allergy – Lectures / Tutorial</b>						
2	20/09 Mon	11-12	MS Teams	Tedla	Lecture	Immunological basis of hypersensitivity and allergy
	20/09 Mon	12-1	MS Teams	Wainstein	Lecture	Clinical aspects of allergy and hypersensitivity reactions
	23/09 Thurs	12-1	MS Teams	Wakefield	Lecture	Immunodiagnostics for allergy, hypersensitivity and autoimmunity
	24/09 Fri	9-11	MS Teams	Arroyo/Adikari	Tutorial/Quiz 2	Online Immunopathology - Hypersensitivity Team Project
<b>Module 1 – Inflammatory Hypersensitivity (Innate) / Allergy – Practical Lessons</b>						
3	30/09 Thurs	10-1	MS Teams	Bull / Luciani	Laboratory	Practical Lesson: Common immunodiagnostics for allergy, hypersensitivity reactions and immunodeficiency
	01/10 Fri	9-11	MS Teams	Bull / Luciani	Expert Tutorial	Data analysis, interpretation of results, presentation of clinical cases and discussion
<b>Module 2: Immune Dysregulation in Autoimmunity and Cancer – Lectures / Tutorial</b>						
4	04/10 Mon		<b>Public Holiday</b>			
				Luciani Reed	Lectures – Online Pre-recorded	Overview of immune dysregulation Autoimmunity immunopathology and immune-phenotyping
	07/10 Thu	12-1	MS Teams	Luciani	Lecture	Cellular and molecular basis of immunotherapy
	08/10 Fri	9-11	MS Teams	Arroyo/Adikari	Tutorial/Quiz 3	Online Immunopathology - Autoimmunity
<b>Module 2: Immune Dysregulation in Autoimmunity and Cancer – Practical Lessons</b>						
5	14/10 Thurs	10-1	MS Teams	Bull / Luciani	Laboratory	Practical Lesson: <b>Autoimmunity and Cancer:</b> Immuno-pathology, immunotherapy, and current research <b>Demonstration on flow cytometry</b>
	15/10 Fri	9-11	MS Teams	Bull / Luciani	Expert Tutorial	Team presentation of clinical cases and discussion

## Course Outline

<b>6</b>	18-22/10		Flexibility week	No timetabled activities		No timetabled activities
<b>Module 3 – Host defence and Implications for Immunity – Lectures / Tutorial</b>						
Week	Date	Time	Location	Lecturer	Class	Title
<b>7</b>	25/10 Mon	11-12	MS Teams	King	Lecture	Systemic inflammation in infection
	25/10 Mon	12-1	MS Teams	Davenport	Lecture	Role of immunological memory in immunity and protection
	28/10 Thu	12-1	MS Teams	Kaakoush	Lecture	Interaction between gut microbiome and host immunity and their clinical implications
	29/10 Fri	9-11	MS Teams	Luciani/Bull/Arroyo/Adikari	Tutorial/Quiz 4	Course knowledge
<b>Module 3 – Host defence and Implications for Immunity – Practical Lessons</b>						
<b>8</b>	04/11 Thu	10-1	MS Teams	Bull / Luciani	Laboratory	Practical lesson: Introduction to host-pathogen interaction and vaccine efficacy
	05/11 Fri	9-11	MS Teams	Bull / Luciani	Expert Tutorial	Big gut microbiome data
<b>Student Research Team Presentations, Course Review and End of Course Practical Exam</b>						
<b>9</b>	08/11 Mon	11-12	MS Teams	Polly / Bull / Luciani	Student presentations	Team Project - Research Teams 1, 2
	08/11 Mon	12-1	MS Teams	Polly / Bull / Luciani	Student presentations	Team Project – Research Team 3, 4
	11/11 Thu	12-1	MS Teams	Polly / Bull / Luciani	Student presentations	Team Project - Research Teams 5, 6
	12/11 Fri	9-11	MS Teams	Luciani/Bull/Arroyo/Adikari	Tutorial – Interactive Forum	Review of the course - Feedback and Q&A
<b>10</b>	15/11 Mon	11-12	MS Teams	Polly / Bull / Luciani	Lecture	Briefing on practical and end of the year written exam
	15/11 Mon	12-1			Self-directed learning / study	
	18/11 Thurs	12-1			Self-directed learning / study	
	19/11 Fri	9-11	MS Teams	Polly / Bull / Luciani	Laboratory	End of the year Practical Exam

### KEY:

RB	A/Prof Rowena Bull	Leader, Viral Immunology Group, Dept of Pathology & Kirby Institute
MD	Prof Miles Davenport	Head, Infection Analytics Program, Kirby Institute
ED	A/Prof Elissa Deenick	Head, Lymphocyte Signalling and Activation Group, Garvan Institute
NK	Dr Nadeem Kaakoush	Leader, Host- microbiome interaction group, Dept of Pathology, UNSW
FL	A/Prof Fabio Luciani	Leader, Systems Immunology, Dept of Pathology & Kirby Institute, UNSW
CM	A/Prof Cecile King	Group leader, School of Biotechnology and Biomolecular Sciences (BABS),
PP	Prof Patsie Polly	Dept of Pathology, SoMS
JR	A/Prof Joanna Reed	Leader, Rheumatology and Autoimmunity Group, Garvan Institute
JR	Dr Joanne Reed	Immunogenomics Group, Garvan Institute & St Vincent's Clinical School
NT	Prof Nicodemus Tedla	Head, Immune Regulation Research Group, MDTR & Dept of Pathology, SoMS
DW	Prof Denis Wakefield	Director, The Sutherland Centre of Immunology and POWH Immunopathology

**NOTE:** Any changes in timetable will be announced on Moodle at <https://moodle.telt.unsw.edu.au/>

## Guide to Practical Classes

Practical classes are aimed at amplifying and extending students' understanding of the topics gleaned from attendance at lectures and reading of the recommended texts, correcting any misconceptions as well as introducing students to hands-on data acquisition, analysis and interpretation. Hence, adequate preparation and active participation are essential. Remember, it is much better to make a mistake in the relative safety of a practical class, than to make a critical error in an essay or exam because of misconception of basic immunological principles.

Practical classes will reinforce the clinico-immunological correlations involved with each topic and introduce students to cutting-edge research in practice. They are intended to help students to acquire the ability to design, perform, acquire, analyse and interpret common immunodiagnostic procedures and familiarise students to current research practice in immunology. The format of each practical class will be at the discretion of the tutor. Demonstration videos and/or virtual laboratory simulations may be used in conjunction with wet laboratory experiments and clinical scenarios. Materials for the practical classes are located on Moodle and can be accessed by logging in to <https://moodle.telt.unsw.edu.au>.

## Adaptive Tutorials

These consist of 3 online adaptive tutorials focusing on learning outcomes 1, 2, 3 and 4. These highly integrated on-line tutorials are excellent means for students to revise some of the key concepts in the course. The aim of these tutorials is to provide students with prompt feedback on their progress that will assist their preparation for the exams. They will allow independent learning and provide a guide to each student's strengths and weaknesses for a given topic. Each adaptive tutorial will be accessible via Moodle at <https://moodle.telt.unsw.edu.au/> throughout the course. Please use the latest version of Firefox or Chrome to view the interactive images, videos, simulations and/or questions.

## Assessments

Students will undertake multiple forms of assessment during the session:

### Written project and presentation

**20%**

This is a team-based written project submitted on **week 7** and presented on **week 9** and comprises **20%** of the final mark. Of the **20%**, **5%** will be determined by members of the team, **5%** by the project mentor and **10%** will be allocated by two academic staff based on the written submission (**5%**) and oral presentation (**5%**). A detailed guide on the tasks involved will be provided in the form of a 1-hour lecture by the course convener on **week 1**. Rubrics of the marking schemes for each assessment task (pages 5-8).

### Tutorial quizzes

**15%**

These tutorial quizzes are individual assessments and will comprise **15%** of the final mark (**5%** for each of 3 individual quizzes). In the first week there will be a non-assessable pre-course knowledge quiz consisting of 10 MCQs. On weeks 2 and 4 there will be assessable MCQ quizzes, each containing 5 multiple choice questions, primarily based on the lectures given during the same week and a pre-reading indicated in your course manual. On week 7 there will be an assessable post-course knowledge quiz consisting of 10 MCQs. You are therefore strongly advised to attend and review the lectures and perform the allocated pre-reading before you come to the tutorial. The recommended pre-readings are only a guide, additional reading on the subject from the prescribed textbooks is highly recommended. At the end of each quiz, the tutor will give structured feedback on the answers. *This will clarify challenging questions and concepts, provide tutorials that are tailored to each group and aims to encourage discussions.* Students who performed poorly in 1 or more tutorial quizzes may receive individual feedback either face-to-face or via e-mail. *The aim of this assessment is to provide timely feedback on your progress and provide you with remedial assistance if needed.*

### Practical Assessment

**15%**

Students will complete a practical quiz at the end of the course (see Timetable). This will be an online activity in week 10. This will constitute **15%** of the final mark of the course. The exam will consist of 5 questions, each with questions based on material presented during term focused on learning outcomes 1, 2, 3 and 4 (page 7).

### End of Course Written Exam

**50%**

At the end of the course there will be a written exam that accounts for **50%** of the final mark for the course. The questions assess all the learning outcomes and encourage an in-depth understanding of immunology in a clinical and research context. Marks will be weighted as follows: short answer questions 25%; and objective items 25%. The short answer questions vary in style but are intended to provide the opportunity to demonstrate an understanding of the topic and ability to integrate ideas rather than simple regurgitation of facts. The objective items consist of 25 multiple choice questions where the **best** or **most** appropriate answer is chosen from the alternatives provided. The final exam period for Term 3 2021 is Friday, 26 Nov to Thursday, 9 Dec 2021

### Expectations of Students

Tutorial attendance is mandatory. Students are required to attend a minimum of 80% of the Tutorials in order to sit the end of course examination. A courtesy email will alert students who are absent for 1 tutorial. Students missing more than 1 tutorial will be required to contact the course convener (Prof. Polly) to discuss their eligibility to sit the exam. Special Consideration <https://student.unsw.edu.au/special-consideration>

### Supplementary examination

If required, it is intended that supplementary exam period for Term 3 2021 is Monday, 10 January to Friday, 14 January 2022. Students should contact Prof. Polly or the Nucleus staff in Student Hub and Special Consideration website <https://student.unsw.edu.au/special-consideration> for advice.

## Team-Based Learning

At the commencement of this course students will be divided into four tutorial groups and each tutorial group will be subdivided into two teams. The aim of this teaching approach is to enhance students learning experience using small group tutorials, teamwork, peer-teaching and peer-evaluations.

The role of the tutor is not to give students another lecture; but to facilitate interactive discussions and assist students to clarify some challenging concepts presented in the lectures, practical classes and/or textbooks. Students are therefore strongly urged to make adequate preparation for these tutorials and encouraged to participate. Attendance to all these tutorials is mandatory and is assessable.

Pre-reading will be allocated prior to each tutorial. Each tutorial will commence with a quiz (based on the pre-reading), which will first be attempted individually, and the answers submitted to the tutor. At the end of each quiz, the tutor will guide students through the answers, encourage discussion and provide clarifications regarding the challenging questions and concepts. Each tutorial will have additional team activities to be completed on a worksheet in the course manual. **Please bring the course manual to all the tutorials and practical classes.**

Students will receive a maximum of **5%** towards their final course mark for each tutorial quiz. Over the course of 3 tutorials, this will contribute to **15%** of the final mark. Additionally, these multiple-choice questions are representative of what students should expect in their final written exams and they will also provide the tutors and the course convenors critical information on how students are progressing with the course that would allow timely remedial intervention.

The names in each tutorial group and team will be posted on Moodle at <https://moodle.telt.unsw.edu.au/>. The same teams will work together for their team project and presentation.

## Team Project

The team project includes a submission of a written research project proposal on an important research question in immunology modelled on the NHMRC Ideas Grant application as well an associated oral presentation modelled on the Shark Tank television series (i.e. pitching the research idea to expert judges [course convenors]). These tasks are aimed to enhance students' skills in teamwork, effective communication and peer-review processes in line with learning outcomes 3, 4 and 5. Each group will be allocated a mentor (a researcher/academic in relevant fields) that will guide/advise them about the process throughout the term.

Teams will be allocated a mentor from a pool of researchers/academics by a lottery on week 1. Each group is then expected to immediately meet/communicate with their mentor to negotiate/select a suitable research project, map a work plan and set milestones. Teams will then meet with their mentor on weeks 3, 5 and 7 for consultation and to discuss progress. The specific date, venue, agenda and duration of each meeting with the mentor are at the discretion of the group and their mentor.

Students will submit one pdf copy must also be submitted via Turnitin<sup>®</sup> on Moodle, week 8. Only a single submission to Turnitin<sup>®</sup> is permitted. The word limit is **2000 words** ( $\pm 10\%$ ) (excluding tables, figures and figure legends, in-text citation and the final reference list). If a submission exceeds the word limit, only the first **2200** words of the document will be examined. Late submission and/or inappropriately formatted document will not be accepted. The general guide on the written project is outlined below and an example of a written project will be posted on Moodle at <https://moodle.telt.unsw.edu.au/>.

In week 9, each team will give a 10-minute (maximum) talk pitching their research idea for funding. This will be followed by a 5-minute question time. Several one-hour sessions will be set aside for these activities. Presentation style is at the discretion of each group (examples include PowerPoint presentations, video, role play etc.). Teams can choose their spokesperson beforehand, although all students are expected to contribute equally, and poor performance by anyone may affect the team's overall score. At the end of the presentation, questions can be asked to any member of the team by two judges (course convenors) and student peers in the audience.

**This task is worth 20%** of the final mark for the course. Components will be:

- **5%** determined by members of the team, who will provide their collective score for each group member at the end of the submission of the written project and presentation,
- **5%** will be determined by the mentor of the team and
- **10%** will be allocated by the two examiners for the written (5%) and oral presentation (5%) components of the project.

**Detailed assessment criteria for each component of the project is described below.**

The timetable for the presentation of the group projects will be posted on Moodle at <https://moodle.telt.unsw.edu.au/>. Attendance to all the presentations is mandatory. Students will lose 2% for each day they did not attend.

## Guide for the written team project

The project has a maximum word limit of 2000 words. A recommended number of words are provided below for each section.

**Synopsis (max 250 words):** A summary of the project that includes brief introduction, explaining the research question and project rationale, outlining aims and describing the expected outcomes and significance.

**Background (700-1000 words):** This is a preamble to the hypothesis and aims of the project that should give a detailed account of published scientific investigations which are relevant to the project being undertaken. It should identify the limitations of the literature and/or areas of controversy and assess them critically. It should be adequately referenced with recent and appropriate studies and should have clear and logical flow.

**Hypothesis, aim(s) and methods (450 words):** This should include one hypothesis, maximum two aims and a brief description (list) of two to three relevant methods. The hypothesis and stated aim(s) should be derived from the literature review above and should be clear and valid. Methods are to be concisely and clearly summarised and to be appropriate for the stated aims(s).

**Expected outcome and significance (300 words):** This should include expected outcome(s) if the proposed studies/experiments were to succeed and provide an informed outline of the potential significance of the project in context of knowledge gain and/or impact on human health. The expected

outcome(s) and significance statements should clearly relate to the introduction, hypothesis and aims of the project.

**References and referencing style (maximum 30 references):** The whole written manuscript should have a minimum of 20 and a maximum of 30 relevant references. Direct reference of the original research sources should be used whenever possible.

The references should be within the text as follows: (Bolton and Kitamura, 1983) or 'Bolton and Kitamura (1983) showed that...'

When a paper written by two authors is cited, both names are given; for three or more authors only the first name is given, followed by 'et al.'

References to unpublished observations or personal communications should be mentioned in the text only, and not included in the list of references.

The reference list at the end of the manuscript must be arranged alphabetically according to the surname of the first author. When the names of first authors are identical, the alphabetical order of the surnames of subsequent authors takes precedence over the year of publication. The authors' names are followed by the year of publication in brackets. If more than one paper by the same authors in one year is cited, a, b, c, etc. are placed after the year of publication, both in the text and in the list of references. All authors should be quoted for papers with up to seven authors; for papers with more than seven authors, the first six should be quoted followed by et al.

The format for references to papers and books, and to chapters in books, is as follows:

Lipp P, Egger M & Niggli E (2002). Spatial characteristics of sarcoplasmic reticulum Ca<sup>2+</sup> release events triggered by L-type Ca<sup>2+</sup> current and Na<sup>+</sup> current in guinea-pig cardiac myocytes. *J Physiol* 542, 383-393.

Adrian ED (1932). *The Mechanism of Nervous Action*. Humphrey Milford, London.

Buchan AMJ, Bryant MG, Polak JM, Gregor M, Ghatei MA & Bloom SR (1981). Development of regulatory peptides in the human fetal intestine. In *Gut Hormones*, 2nd edn, ed. Bloom SR & Polak JM, pp. 119-124. Churchill Livingstone, Edinburgh.

For those articles published online ahead of print, that have not been assigned full publication details the DOI (digital object identifier) should be used. See example below:

Lipp P, Egger M & Niggli E (2002). Spatial characteristics of sarcoplasmic reticulum Ca<sup>2+</sup> release events triggered by L-type Ca<sup>2+</sup> current and Na<sup>+</sup> current in guinea-pig cardiac myocytes. *J Physiol*; DOI: 10.1113/jphysiol.2001.013382.



## Team project assessment forms

### Marking scheme for a team member assessment (5%)

Student being assessed: .....

Team number: .....

Names of the student assessors: .....

	/10
Participation in the planning, writing and presentation of the project	
Execution of allocated tasks effectively and on time	
Attendance to meetings called on by group members	
Contribution to group discussion	
Scientific quality of contribution	
Total	

Comment on the specific components of the project undertaken by this student

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Signature student assessor 1: .....

Date: .....

Signature student assessor 2: .....

Date: .....

Signature student assessor 3: .....

Date: .....

Signature student assessor 4: .....

Date: .....

Signature student assessor 5: .....

Date: .....

### Marking scheme for mentors (5%)

**Topic:**

Mentor's name..... Team number.....

	/10
Participation in the planning, writing and presentation of the project	
Ability to utilise the current medical literature to support proposal	
Attendance to meetings and execution of allocated tasks effectively	
Scientific quality and relevance of questions asked by the group to the mentor	
Addressed issues/comments/suggestions from the mentor	
Total	

**Comments:**

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**Signature:** .....

**Date:** .....

### Marking scheme for assessment of the written research proposal (5%)

Team number and assessor's name: .....

Criteria	Mark out of 10 for each marking criteria				
	0-4.9	5.0-6.4	6.5-7.4	7.5-8.4	8.5-10
<b>Synopsis (10 x 1)</b>	Lack of basic information.	Major lack of key information.	Some key information missing.	Detailed and focused.	Very comprehensive, detailed and focused.
<b>Background (10 x 2.5)</b>	Lack of significant detail in introduction.	Major lack of key basic information in introduction.	Some key basic information missing in introduction.	Detailed and focused introduction.	Very comprehensive, detailed and focused introduction.
<b>Critical Analysis (10 x1)</b>	Lack of critical analysis of the literature presented.	Very limited critical analysis of the literature.	Limited critical analysis of the literature, mostly descriptive.	Some critical analysis of the literature.	Comprehensive critical analysis of the literature.
<b>Hypothesis and Aims (10 x 1.5)</b>	No hypotheses or aims apparent.	Hypotheses and aims not at all clear.	No clear hypotheses. Aims outlined but not justified.	Hypotheses and aims outlined and justified.	Hypotheses and aims clearly outlined and comprehensively justified.
<b>Methods (10 x 0.5)</b>	No experimental summary provided.	Experimental summary provided but not linked to hypotheses & aims.	Experimental summary partially linked to hypotheses & aims.	Experimental summary fully linked to hypotheses & aims but not justified.	Experimental summary fully linked to hypotheses & aims & justified.
<b>Significance Statement (10 x 1.5)</b>	No clear significance statements.	Poor description of the significance. No links to the proposal.	Description of the significance; poorly linked to the proposal and/or expected outcome.	Clear description of the significance; partially linked to the proposal and expected outcome.	Comprehensive description of the significance; clear link to the proposal and outcome
<b>References (10 x 1)</b>	Poor attempt to explore literature.	Significant over-reliance on reviews or textbooks.	Some over-reliance on reviews or textbooks.	Predominant use of primary articles but lack of more recent or seminal publications.	Predominant and comprehensive use of current and primary articles.
<b>Presentation (10 x 1)</b>	Major grammatical and spelling errors.	Major grammatical and spelling errors. Professional expression used.	Minor grammatical errors and minor spelling errors. Professional expression used.	Minor grammatical or spelling errors. Professional expression used and was supported with informative figures	No grammatical or spelling errors. Professional expression was used consistently and was supported with accurate, focused and informative figures.

Comments:

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Signature: .....

Date: .....

**Marking scheme for assessment of presentation of the research proposal (5%)**

**Team number:** .....

**Assessor's name:** .....

	/10
Demonstrate an understanding of the topic and the research question	
Effectively communicated the most important aspects of the proposal	
Demonstrate an ability to utilise the current medical literature to support proposal	
Showed competence in effectively formulating the hypothesis and aims of the proposal	
Clear and justified articulation of the significance of the proposal	

**Comments:**

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**Signature:** .....

**Date:** .....



## PATH3209 Moodle course and MS Teams Classroom

The online module for the Clinical Immunology course can be found by logging in to Moodle at <https://moodle.telt.unsw.edu.au/>, using your student number as the user name (e.g. z1234567) and your zPass as the password. The PATH3209 Moodle module will contain information directly related to the course such as tutorial lists, revisions to the lecture timetable, examination timetables, links to lecture slides. **The MS Teams PATH3209 Classroom will be the location of all livestreamed and interactive lessons. You are expected to visit these sites regularly during your PATH3209 course.**

### Online lecture slides

PDF version of lecture slides will be uploaded to Moodle together with corresponding recorded lectures (MS Teams recording). However, large numbers of lecture slides in this course are images that are not annotated but explained/discussed in during the lecture. Therefore, you are **strongly advised to attend lectures**. Note that no online recordings will be available for lectures that are of sensitive nature and those where intellectual property is protected.

### Images of Disease (IOD) database

This database is a collection of images used for teaching within the Department. The latest version is available online, optimised for smart phones and tablet computers as well as Firefox4+, Chrome 13+ and Safari browsers on laptop and desktop computers at <http://iod.med.unsw.edu.au/> . An interactive Images of Disease app for iPhone and iPad is available to download from that website. Android and Windows phone versions will also be released shortly.

Students can also log into large collections of our macroscopic and diagnostic images, available in SLICE at the BEST Network linked to <https://www.best.edu.au>.

## Academic Honesty and Plagiarism

The Department of Pathology considers plagiarism in submitted written work as a serious academic misconduct and imposes severe penalties. Submitted abstract, papers and/or manuscripts will be routinely checked for editorial originality using UNSW approved software called Turnitin It is, therefore, advisable for students to check their papers prior to submission and confirm no professional and/or scholarly plagiarism is committed.

Evidence of plagiarism in submitted assignments, etc. will be thoroughly investigated and may be penalised by the award of a score of zero for the assessable work. Flagrant plagiarism will be directly referred to the Division of the Registrar for disciplinary action under UNSW rules.

<https://student.unsw.edu.au/conduct>  
[student.unsw.edu.au/plagiarism](https://student.unsw.edu.au/plagiarism)

Your attention is drawn to the following extract from the above website:

“The basic principles are that you should not attempt to pass off the work of another person as your own, and it should be possible for a reader to check the information and ideas that you have used by going to the original source material. Acknowledgment should be sufficiently accurate to enable the source to be located speedily”. If you are unsure about this consult your lecturer.

The following are some examples of breaches of these principles:

- a) Quotation without the use of quotation marks. It is a serious breach of these rules to quote another’s work without using quotation marks, even if one then refers to the quoted source. The fact that it is quoted must be acknowledged in your work.
- b) Significant paraphrasing, e.g. several sentences, or one very important sentence, which in wording are very similar to the source. This applies even if the source is mentioned, unless there is also due acknowledgment of the fact that the source has been paraphrased.
- c) Unacknowledged use of information or ideas, unless such information or ideas are commonplace.
- d) Citing sources (e.g. texts) which you have not read, without acknowledging the ‘secondary’ source from which knowledge of them has been obtained.

These principles apply to both text and footnotes of sources. They also apply to sources such as teaching materials, and to any work by any student (including the student submitting the work) which has been or will be otherwise submitted for assessment. You must obtain the prior approval of your lecturer if you wish to submit to that lecturer an essay substantially like one which has already been, or will be, submitted to another lecturer.

Using the principles mentioned above about proper acknowledgment, you should also proceed on the general assumption that any work to be submitted for assessment should in fact be your own work. It ought not be the result of collaboration.”

Appropriate citation of sources therefore includes surrounding any directly quoted text with quotation marks, with block indentation for larger segments of directly quoted text. The preferred format for citation of references is an author-date format with an alphabetically arranged bibliography at the end of the assignment. Note that merely citing textbooks or website URLs is unlikely to yield a bibliography of satisfactory standard. ***The internet should be avoided as a primary source of information.*** Inclusion of appropriate journal articles, both primary research publications and reviews, is usually expected.

## Workplace Health and Safety

For more information on matters related to workplace health and safety policies at UNSW, visit [safety.unsw.edu.au](https://safety.unsw.edu.au)

## Teaching Laboratories Risk Assessments

Teaching Laboratories

Student Risk Assessment



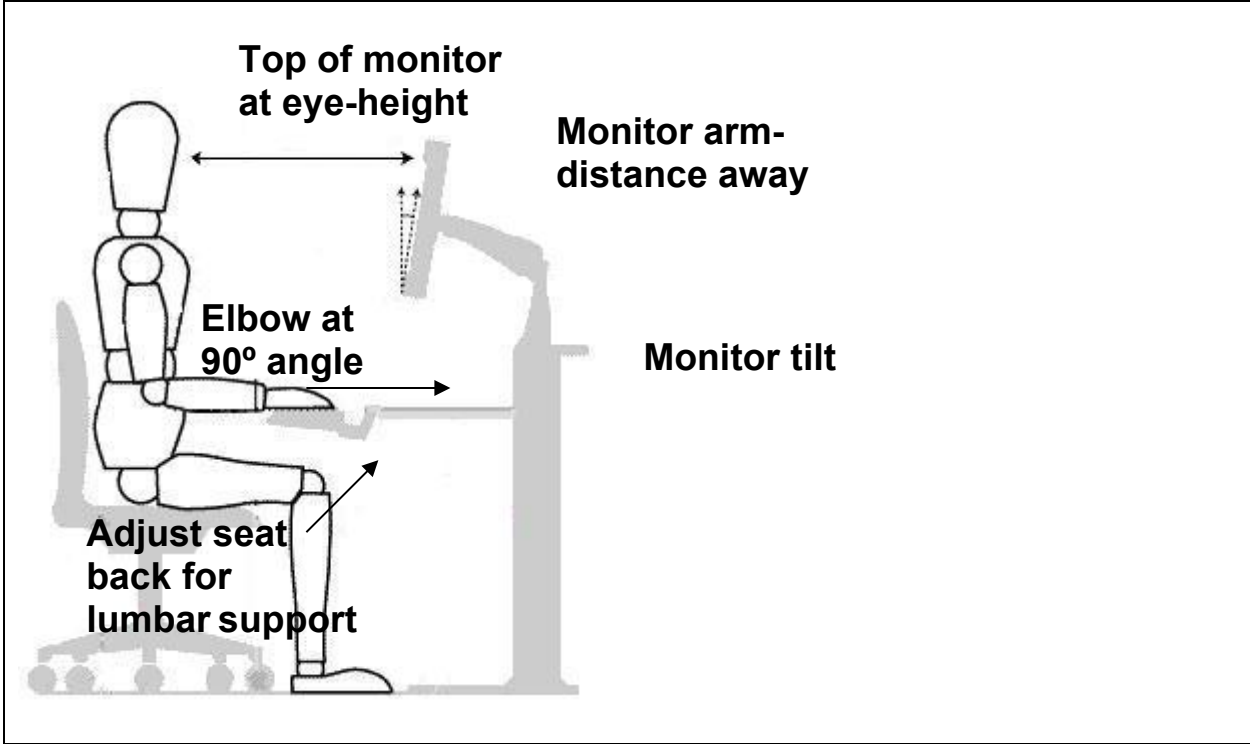
**UNSW**  
SYDNEY

Immunology practicals for PATH3209, 2021 in G115, G116, G118 and G120 at level 1, Wallace Wurth building.

Hazards	Risks	Controls
<b>Ergonomics computing</b>	Musculoskeletal	<ul style="list-style-type: none"> <li>• Correct workstation set-up.</li> <li>• Adjust your chair or stool so that your elbow is at a 90° angle while pipetting; adjust the height and position of sample holders, solution container, and waste receptacle so that they are all approximately the same; try to work with your hands below shoulder height; let go of the pipette from time to time and give the fingers/hand a break; do not twist or rotate your wrist while pipetting; Use minimal pressure while pipetting; try to switch periodically between different types of work. <i>For more information on preventing repetitive strain</i> <a href="https://www.anachem.co.uk/Protect-Yourself-from-RSI">https://www.anachem.co.uk/Protect-Yourself-from-RSI</a>.</li> <li>• Check electrical equipment in good condition before use. All portable electrical equipment tested and tagged.</li> <li>• Wear disposable gloves and PPE, dispose in sharps bins</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Do not eat, drink or smoke in the lab; wear disposable gloves and PPE; dispose waste in biowaste containers</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> <li>• Low concentrations of chemicals used; wear disposable gloves and PPE</li> </ul>
<b>Ergonomics pipetting</b>	Pain	
	Repetitive strains	
<b>Electrical</b>	Electric shock/fire	
<b>Physical</b>		
Sharp pipette tips	Stabbing wound of hands	
<b>Biological</b>		
Antibody	Inoculation	
BSA	Inoculation	
Human serum	Inoculation	
Cell line	Inoculation	
Human PBMC	Inoculation	
<b>Chemicals</b>		
1% Formaldehyde	Irritant	
0.01% Azide	Irritant	
70% ethanol	Irritant/flammable	
PBS	Mild irritant	
1% bleach	Mild irritant	



**Workstation set-up**



**Personal Protective Equipment required**

 Closed in Footwear	 Lab. Coat	 Gloves	 Safety Goggles
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**Emergency Procedures**

In the event of an alarm sounding, stop the practical class and wait for confirmation to evacuate from demonstrators. Then wash your hands and pack up your bags. Follow the instructions of the demonstrators regarding exits and assembly points.

**Clean up and waste disposal**

- Remove your gloves and dispose in the biowaste bins provided.
- Dispose of all pipette tips in the bin provided.

**Ethics Approval**

These practical classes do not require ethics approval.

**Declaration**

I have read and understand the safety requirements for the practical classes, and I will observe these requirements.

Signature:.....Date:.....

Reviewed on 09/09/21