



PATH3205

Molecular Basis of Disease

Course Outline
Term 1, 2023

School of Biomedical Sciences
Faculty of Medicine & Health

Table of Contents

| | |
|---|-----------|
| 1. Staff | 3 |
| 2. Course information | 3 |
| 2.1 Course summary | 4 |
| 2.2 Course aims | 4 |
| 2.3 Course learning outcomes (CLO) | 5 |
| 2.3.1 Graduate Attributes Developed in this Course | 5 |
| 2.4 Relationship between course and learning outcomes (CLOs) and assessments | 6 |
| 3. Strategies and approaches to learning | 7 |
| 3.1 Learning and teaching activities | 7 |
| 3.1.1 Teaching strategies | 7 |
| 3.1.2 Research experience | 7 |
| 3.2 Expectations of students | 8 |
| 4. Course schedule and structure | 9 |
| 4.1 PATH3205 Course Timetable | 10 |
| 5. Assessment | 14 |
| 5.1 Assessment tasks | 14 |
| 5.2 Assessment criteria and standards | 17 |
| 5.3 Submission of assessment tasks | 19 |
| 5.4. Feedback on assessment | 19 |
| 6. Academic integrity, referencing and plagiarism | 19 |
| 7. Use of Generative Artificial Intelligence (AI) – such as ChatGPT – in UNSW Assessments – Expectations | 20 |
| 7.1 No assistance – e.g. exams and quizzes | 20 |
| 7.2 Simple editing assistance | 20 |
| 7.3 Planning assistance – e.g. research tasks | 20 |
| 7.4 Full assistance with attribution | 20 |
| 8. Readings and resources | 21 |
| 8.1 Recommended Text | 21 |
| 8.2 Reference | 21 |
| 9. Administrative matters | 22 |
| 10. Additional support for students | 22 |
| 11. Computer Laboratories or Study Spaces | 23 |
| 12. The Museum of Human Disease | 24 |
| 12.1 Security in the museum | 24 |
| 12.2 Safety in the museum | 25 |

1. Staff

| Position | Name | Email | Consultation times and locations | Contact Details |
|--------------------|--|--|--|-----------------|
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| Course Co-Convenor | Dr Chaturaka Rodrigo | c.rodrido@unsw.edu.au | | |
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2. Course information

Units of credit: This course is offered during term 1 and counts for six units of credit (6UOC).

Pre-requisite(s): PATH2201/PATH2202 (Processes in Disease/Processes in Disease for Health and Exercise Science) are prerequisites for the course. It is also advantageous for students to have undertaken previous or concurrent study in BABS3041 Immunology I, BABS3121 Molecular Biology of Nucleic Acids, BIOC3111 Molecular Biology of Proteins, BIOC3261 Human Biochemistry and BIOC3271 Molecular Cell Biology 2.

Teaching times and locations: <http://www.timetable.unsw.edu.au>

2.1 Course summary

The intended learning outcomes are achieved through the study of the common patterns of inflammatory and immune responses to chronic disease, which are often referred to as pathological processes. To understand these processes, you will draw on your knowledge of normal anatomy, histology, biochemistry, molecular biology and physiology. PATH2201 Processes in Disease has introduced the fundamental concepts for the diseases to be addressed in PATH3205. This will involve more detailed discussion and integration of your understanding of recent advances in knowledge pertaining to the molecular basis of inflammation and immune responses in lectures and tutorials, as well as research techniques and analysis of experimental findings demonstrated in practical lessons.

2.2 Course aims

The course **PATH3205 Molecular Basis of Disease** aims to:

1. Promote and apply an understanding of the molecular basis of systemic inflammation for example of cardiovascular systems and immune responses to infection, allergy, and autoimmunity. These concepts are introduced in the context of examples of common human diseases or disease processes and are fortified with recent developments in medical research.
2. Relate and integrate the above disease themes and concepts as molecular processes in human disease with medical research within 'Modules'. Modules will typically inter-relate lectures, practical lessons and tutorials.
 - a. **Lectures** will be sequenced as an overview of the disease topic and associated concepts, followed by research challenges and topic integration/feedback sessions.
 - b. **Tutorials** will further integrate theoretical concepts and will provide a forum for collaborative learning.
 - c. **Practical lessons** designed in a workshop format, will introduce students to state-of-the-art areas of medical research that link theoretical to technical laboratory learning.
3. Develop and integrate oral and written communication skills to disseminate discoveries in human disease and the relevance of medical research. Communication skills are developed by engagement with assessment tasks and practical or tutorial lessons.
4. Identify and develop professional skills and graduate attributes for future real-world application such as teamwork, critical thinking and reflective practice via assessment tasks and practical or tutorial lessons.

These aims will be achieved by specialist teaching of core concepts, clinico-pathological correlation and research techniques by academic pathologists and specialist guests who are scientifically and/or clinically trained. This will involve integration of many resources, which will be presented both face-to-face and online in order to support and promote student learning and understanding of core Pathology concepts, medical research and practice, as well as address UNSW graduate attributes.

The course aims to place the molecular aspects of chronic human disease in context with the interpretation of histopathology and macroscopic specimens for each above disease topics outlined in the timetable and in Moodle. Furthermore, course aims mesh well with other disciplines including Anatomy, Biochemistry, Molecular Biology, Immunology, Microbiology, Pharmacology and Physiology.

2.3 Course learning outcomes (CLO)

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

1. Describe and distinguish between the causes, pathogenic molecular mechanisms, macroscopic and microscopic appearances and clinical consequences of inflammation, immune responses to infection, allergy, autoimmunity, and effects of systemic inflammation on the body.
2. Demonstrate capabilities in teamwork and communication within collaborative teams.
3. Discuss and debate state-of-the-art research and concepts of disease.
4. Engage in research and work integrated learning via mentorship by a research scientist.
5. Understand and explain the relevance of laboratory techniques and analysing outcomes in the diagnosis of human disease.
6. Demonstrate and engage in teamwork, communication and reflective practice to evidence professional skills development within ePortfolios/reflective blogs.

2.3.1 Graduate Attributes Developed in this Course¹

| UNSW Graduate Attributes* | Level of FOCUS | Activities / Assessment |
|---|----------------|--|
| Scholars | 0 = NO FOCUS | |
| Professionals | 1 = MINIMAL | |
| Leaders | 2 = MINOR | |
| Global Citizens | 3 = MAJOR | |
| Information acquisition, evaluation and synthesis | 3 | <ul style="list-style-type: none">• Lectures (online and face-to-face), tutorials and practicals• Tutorial Quizzes• Research Impact Symposium• ePortfolio |
| Research, inquiry and analytical thinking abilities | 3 | <ul style="list-style-type: none">• Research Impact Symposium• ePortfolio |
| Communication | 3 | <ul style="list-style-type: none">• Research Impact Symposium• Tutorials• Tutorial Quizzes• ePortfolio |
| Teamwork, collaborative and management skills | 3 | <ul style="list-style-type: none">• Research Impact Symposium• Team-based learning in tutorials and tutorial quizzes |

¹ teaching.unsw.edu.au/graduate-outcomes

2.4 Relationship between course and learning outcomes (CLOs) and assessments

| Course Learning Outcome (CLO) | LO Statement | Related Tasks & Assessment |
|-------------------------------|--|---|
| CLO 1 | Describe and distinguish between the causes, pathogenic molecular mechanisms, macroscopic and microscopic appearances and clinical consequences of inflammation, immune responses to infection, allergy, autoimmunity, and effects of systemic inflammation on the body. | Quizzes Mid-Term Exam Research Impact Symposium Final exam |
| CLO 2 | Demonstrate capabilities in teamwork and communication within collaborative teams. | Quizzes Research Impact Symposium |
| CLO 3 | Discuss and debate state-of-the-art research and concepts of disease. | Mid-Term Exam Research Impact Symposium Final exam |
| CLO 4 | Engage in research and work integrated learning via mentorship by a research scientist. | Research Impact Symposium |
| CLO 5 | Understand and explain the relevance of laboratory techniques and analysing outcomes in the diagnosis of human disease. | Mid-Term Exam Research Impact Symposium Final exam |
| CLO 6 | Demonstrate and engage in teamwork, communication and reflective practice to evidence professional skills development within ePortfolios/reflective blogs. | Quizzes Research Impact Symposium |

3. Strategies and approaches to learning

3.1 Learning and teaching activities

3.1.1 Teaching strategies

The course is comprised of lectures, tutorials, practical lessons, integration/feedback modules and assignments, which cover general and specialist aspects of the molecular basis of disease.

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

- 1) A **collaborative, team-based approach** to learning. It is anticipated that students will have an enhanced learning experience through team quizzes, peer teaching, engaging in the research impact symposium team assessment task and skills building sessions. Students are encouraged to work with their allocated teams and mentors as study teams and build reflective blogs.
- 2) A series of **lectures** introduce you to pathological processes, as well as specific examples of those processes affecting organs and tissues. The integration/feedback modules provide an opportunity for self-directed learning and revision of concepts. The tutorials are designed to be complementary to lectures and place these topics in the larger context of human disease. A list of aims and objectives is included for each lecture and tutorial, along with points for discussion and a list of suggested additional resources available on the web.
- 3) Small group **tutorials** are intended to extend and amplify student understanding of material presented in lectures in an interactive format. Students are encouraged to clarify any difficulties regarding the concepts discussed. Students will be allocated into teams and will complete individual and team quizzes and work collaboratively on interpretation of disease processes. Pre-tutorial learning objectives and reading will be assigned for each tutorial.
- 4) **Practical lessons** employ demonstration-style laboratory stations, computer-based virtual microscopy and virtual laboratories, in order to permit correlation between disease processes, changes in cells and tissues at the molecular and microscopic levels and the manifestations of disease. Practical lessons and tutorials in Molecular Basis of Disease are aimed at amplifying and extending student understanding of the topics gleaned from attendance at lectures and reading of the recommended text, as well as correcting any misconceptions. Practical and tutorial classes will reinforce the molecular basis and disease effects for each topic. Practical lessons will demonstrate 'state-of-the-art' molecular techniques that are key in diagnosis of disease.
- 5) The course also provides the opportunity to be mentored by a research scientist. The innovative **Research Mentoring Experience** component of the course introduces the 'world of medical research' to undergraduate students. We hope it will provide you with an exciting and inspiring glimpse of current challenges and approaches in medical research.
- 6) Integration/feedback sessions which employ digital technology to engage students in performing interactive activities to clarify misconceptions and fortify key concepts presented in each module.

3.1.2 Research experience

Opportunities exist for all students wishing to undertake undergraduate and postgraduate research study within the School of Medical Sciences. Information can be accessed via the directory for the School of Biomedical Sciences at: <https://medicalsciences.med.unsw.edu.au/>

3.2 Expectations of students

Students are reminded that UNSW recommends that a 6 units-of-credit course should involve about 150 hours of study and learning activities. The formal learning activities total approximately 50 hours throughout the term and students are expected (and strongly recommended) to do at least the same number of hours of additional study.

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 convenor (Prof. Polly) to discuss their eligibility to sit the exam.

There are online components of the course that students are required to access or attend. For example, in **Week 7 attendance at Research Impact Symposium** (either as presenters or an audience) is **compulsory**.

Students are expected to demonstrate professional language and behaviour when e-mailing peers and course staff and when interacting in digital spaces that require social learning networks and discussion forums.

4. Course schedule and structure

This course consists of 6.5 hours of class contact hours per week. You are expected to take an additional 6.5 hours of non-class contact hours per week to complete assessments, readings and exam preparation.

Iterative improvements have been made each year based on student feedback.

| Week [Date/Session] | Topic [Module] | Activity [Learning opportunity] | Related CLO |
|------------------------|--|---|----------------|
| Week 1 | <i>Introduction/Overview Module 1: Cardiovascular Disease and Chronic Inflammation</i> | Orientation Lecture Overview Cardiovascular Disease, Research Challenges Lectures, Tutorial and Research Impact Symposium Resources Science Communication I Online Workshop | 1, 4-6 1-6 |
| Week 2 | <i>Module 1: Cardiovascular Disease and Chronic Inflammation</i> | Cardiovascular Disease, Clinical-pathological correlation, Lipid Transport Lectures, Tutorial and Practical Lesson Integration Feedback Session, Quiz | 1-6 |
| Week 3 | <i>Module 2: Cancer and Chronic Inflammation</i> | Overview: Inflammation and Cancer, Clinical-pathological correlations of cancer Lectures, Tutorial and Self-Directed Learning Research Impact Symposium- RIS Science Communication II Online Workshop | 1-6 |
| Week 4 | <i>Module 2: Cancer and Chronic Inflammation</i> | Molecular Hallmarks and Targeted Therapies of Cancer Pancreatic Cancer Lectures, Research Challenges, Tutorial and Practical Lesson Integration Feedback Session, Quiz | 1-6 |
| Week 5 | <i>Module 3: Hypersensitivity and Allergy</i> | Overview immune system and hypersensitivities, Allergy Lectures Mid-term exam (Inspira) Tutorial | 1-6 |
| Week 6 | <i>Flexibility Week</i> | | |
| Week 7 | <i>Research Impact Symposium</i> <i>Module 3: Hypersensitivity and Allergy</i> | Team Presentations Attendance by all teams is compulsory Asthma Lecture, Practical Lesson | 2, 3 1-6 |
| Week 8 | <i>Module 4: Immune Dysregulation and Inflammation in infections and autoimmunity</i> | Lung Disease Allergy and Asthma Lectures, Tutorial, Quiz and Feedback Sessions | 1-6 |
| Week 9 | <i>Module 4: Immune Dysregulation and Inflammation in infections and autoimmunity</i> | Public Holiday Immune dysregulation and Autoimmune Disease Tutorial, Research Challenges and Practical Lesson | 1-6 |
| Week 10 | <i>Module 4: Immune Dysregulation and Inflammation in infections and autoimmunity</i> | Autoimmunity and Immune termination Lecture, Tutorial and Practical Lessons Integration Feedback Session, Quiz, Revision and Self-Directed Study | 1-6 |

Final Exam Period: 28 April – 11 May

Supplementary Exam Period: 22 May – 26 May

4.1 PATH3205 Course Timetable

NOTE: Changes in the timetable will be announced on Moodle.

| Week | Date | Time | Learning Activity/ Location | Lecturer | Title |
|---|---------------|---------|-------------------------------------|---|---|
| 1 Introduction | 13/2 Mon | 9-10am | Lecture 0 MS Teams | Polly | Introduction: Molecular Basis of Disease Overview: Key Principles in Disease: Inflammation and Immune Responses <i>**Research Impact Symposium topics announced**</i> |
| Module 1: Cardiovascular Disease and Chronic Inflammation | | | | | |
| 1 RIS Workshop | 13/2 Mon | 10-11am | Lecture MS Teams | Champion | Lecture 1.1: Overview of cardiovascular disease Unanswered questions in atherosclerosis |
| | | 12-1pm | Lecture MS Teams | Thomas | Lecture 1.2: Research Challenges: Molecular basis of endothelial dysfunction |
| | 15/2 Wed | 1-2pm | Tutorial In Person | Tutors SH/CVD Tutorial <i>See tutorial group allocation and room location on Moodle</i> | Tutorial 1 Cardiovascular Disease - Specimens and histology (SH) |
| | 16/2 Thurs | 1-2pm | Skills Building | Jones/Polly | Science Communication I: Presentation and collaborative learning skills |
| | | 2-3pm | | Self-Directed Learning | Research Impact Symposium (RIS) Resources |
| 2 | 20/2 Mon | 9-10am | Lecture MS Teams | Champion | Lecture 1.3: Clinical - pathological correlations of cardiovascular disease Heart disease, strokes and more |
| | | 10-11am | Lecture MS Teams | Rye | Lecture 1.4: Molecular basis of Lipid Transport |
| | | 12-1pm | In Person | Champion | Integration/Feedback Session Cardiovascular Disease |
| | 22/2 Wed | 1-2pm | Tutorial In Person | Tutors <i>See tutorial group allocation and room location on Moodle</i> | Tutorial 2 Cardiovascular Disease - Molecular Basis (MB) |
| | 23/2 Thurs | 1-3pm | Practical Lesson 1 In Person | Thomas | Quiz 1 Practical Lesson 1: Cardiovascular Dysfunction |

| Module 2: Cancer and Chronic Inflammation | | | | | |
|--|-------------------|---------|--------------------------------------|---|---|
| 3 | 27/2 Mon | 9-10pm | Lecture MS Teams | Polly | Lecture 2.1: Overview of cancer related health problems Overview: Inflammation and Cancer |
| | | 10-11pm | Lecture MS Teams | Polly | Lecture 2.2: Clinico - pathological correlations of cancer Paraneoplastic Syndromes with focus on Cancer Cachexia |
| | | 12-1pm | Online Workshop (recorded) | Jones/Polly | Science Communication II: Presentation and collaborative learning skills |
| | 1/3 Wed | 1-2pm | Tutorial In Person | Tutors <i>See tutorial group allocation and room location on Moodle</i> | Tutorial 3 Cancer – Specimens and histology (SH) |
| | 2/3 Thurs | 1-3pm | Skills Building MS Teams | Self-Directed Learning | Research Impact Symposium Meet ECR Mentors Revise Workshop Materials Research on Topic |
| 4 | 6/3 Mon | 9-10am | Lecture MS Teams | Rodrigo | Lecture 2.3: Molecular hallmarks of cancer and its relevance to cutting edge treatment |
| | | 10-11am | Lecture MS Teams | Phillips | Lecture 2.4: Tumour-Stromal Interactions in Pancreatic Cancer and Future Treatment Strategies |
| | | 12-1pm | In Person | Polly/Rodrigo | Integration/Feedback Session Cancer and Chronic Inflammation |
| | 8/3 Wed | 1-2pm | Tutorial In Person | Tutors <i>See tutorial group allocation and room location on Moodle</i> | Tutorial 4 Cancer Related Inflammation - Molecular Basis (MB) |
| | 9/3 Thurs | 1-3pm | Practical Lesson 2 In Person | Polly <i>See teaching lab location on Moodle</i> | Quiz 2 Research Challenges: Cancer Cachexia - Inflammation and Muscle Effects Practical Lesson 2: Muscle Wasting in Cancer Cachexia Research Lab |
| Module 3: Hypersensitivity and Allergy | | | | | |
| 5 | 13/3 Mon | 9-10am | Lecture MS Teams | Rodrigo | Lecture 3.1: Overview of the immune system and hypersensitivities |
| | | 10-11am | Lecture MS Teams | Herbert | Lecture 3.2: Molecular Basis of Allergy |
| | | 12-1pm | Lecture MS Teams | Herbert | Lecture 3.3: Clinico-pathological correlations of Asthma |
| | 15/3 Wed | 1-2pm | Tutorial In Person | Tutors <i>See tutorial group allocation and room location on Moodle</i> | Tutorial 5 Hypersensitivity and Allergy |
| | 16/3 Thurs day | 1-3pm | Online Mid-Term Exam | Polly/Rodrigo | Mid-Term Exam (Inspira) |
| 6: Flexibility Week – lessons not timetabled | | | | | |
| Research Impact Symposium: Team Presentations | | | | | |

| | | | | | |
|--|---------------|-------------------------------------|---|--|---|
| 7 | 27/3 Mon | 9-10am 10-11am 12-1pm | MS Teams | Polly/Rodrigo Luciani/Herbert | Research Impact Symposium (RIS) <i>*attendance is compulsory</i> |
| | 29/3 Wed | 1-3pm | MS Teams | Polly/Rodrigo Luciani/Herbert | Research Impact Symposium (RIS) <i>*attendance is compulsory</i> |
| Feedback | | | | | |
| 7 | 30/3 Thurs | 1-3pm | Practical Lesson 3 | Herbert | Examples and Research Challenges: Asthma |
| | | | In Person | See teaching lab location on Moodle | Practical Lesson 3: Asthma Research |
| Module 4: Immune Dysregulation and Inflammation in infections and autoimmunity | | | | | |
| 8 | 3/4 Mon | 9-10am | Online Recorded Lecture Moodle | Online Wakefield | Lecture 4.1: Autoimmunity (Recorded) |
| | | 10-11am | Lecture MS Teams | Rodrigo | Lecture 4.2: Clinico-pathological correlations of autoimmune diseases |
| | | 12-1pm | Lecture MS Teams | Bull | Lecture 4.3: Pathogens in Autoimmunity |
| | 5/4 Wed | 1-2pm | Tutorial | Tutors See tutorial group allocation and room location on Moodle | Tutorial 6 Immune Dysregulation and Inflammation in infections and autoimmunity – Specimens and Histology (SH) Quiz 3 |
| | 6/4 Thurs | 1-3pm | Online Workshop | Polly/Rodrigo | Feedback – Mid-term exam/RIS Student / Teacher Forum – Q & A session |
| 6/4/23 **Research Experience Reflections due** by 11:59pm in Turnitin | | | | | |
| 9 | 10/4 Mon | | | | Public Holiday Easter Monday |
| | 12/4 Wed | 1-2pm | Tutorial | Tutors See tutorial group allocation and room location on Moodle | Tutorial 7 Immune Dysregulation and Inflammation in infections and autoimmunity – Molecular Basis (MB) |
| | 13/4 Thurs | 1-3pm | Practical Lesson 4 | Nguyen See teaching lab location on Moodle | Examples and Research Challenges: Rheumatoid Arthritis Practical Lesson 4: Autoimmune Disease Mechanisms |
| 10 | 17/4 Mon | 9-10am | Lecture MS Teams | Tedla | Lecture 4.4: Molecular basis of immune termination |
| | | 10-11am | In Person | Tedla /Bull | Integration/Feedback Session Immune Dysregulation |
| | | 12-1pm | | | Self-study |
| | 19/4 Wed | 1-2 pm | Tutorial | Tutors | Tutorial 8 |

| | | | | | |
|--|------------|-------|--|--|---|
| | | | | <i>See tutorial group allocation and room location on Moodle</i> | Revision and questions Quiz 4 |
| | 20/4 Thurs | 1-3pm | | | Self-directed study and exam preparation |

KEY:

| | | |
|----------|------------------------|---|
| Bull | A/Prof Rowena Bull | Kirby Institute and Department of Pathology, UNSW |
| Champion | Dr Sophia Champion | Department of Pathology, UNSW |
| Herbert | A/Prof Cristan Herbert | Mechanisms of Disease and Translational Research; Department of Pathology, UNSW |
| Luciani | A/Prof Fabio Luciani | Kirby Institute and Department of Pathology, UNSW |
| Nguyen | Dr Matthew Nguyen | Department of Pathology, UNSW |
| Phillips | Prof Phoebe Phillips | Adult Cancer Program, Lowy Cancer Centre and Department of Pathology, UNSW |
| Polly | Prof Patsie Polly | Mechanisms of Disease and Translational Research; Department of Pathology, UNSW |
| Rodrigo | Dr Chaturaka Rodrigo | Kirby Institute and Department of Pathology, UNSW |
| Rye | Prof Kerry-Anne Rye | Mechanisms of Disease and Translational Research; Department of Pathology, UNSW |
| Tedla | Prof Nicodemus Tedla | Mechanisms of Disease and Translational Research; Department of Pathology, UNSW |
| Thomas | A/Prof Shane Thomas | Mechanisms of Disease and Translational Research; Department of Pathology, UNSW |

5. Assessment

5.1 Assessment tasks

| | | |
|----------------|--|------------|
| Quizzes | Individual and Team performance | 10% |
|----------------|--|------------|

The format of the quizzes will be 4 MCQs in 5 mins online for an individual attempt followed by 5 MCQs in 5 mins for a team attempt. Students attempt this assessment as individuals and as teams at the beginning of each tutorial. This forms the basis of collaborative learning for understanding complex molecular mechanisms and disease processes. Students will be required to complete pre-reading and tutorial objectives prior to the tutorial. Therefore, quizzes in the tutorials will form the basis of the tutorial itself, thus encouraging a flipped classroom approach.

Verbal feedback is given once the quiz has been marked by the Tutor. Marks are given to students at the time of quiz completion

Quizzes will take place within tutorial timeslots (see course timetable).

| | | |
|----------------------|-------------------------------|------------|
| Mid-Term exam | Individual performance | 20% |
|----------------------|-------------------------------|------------|

The focus will be on pathological process three (3) short answer questions (two (2) theory and one (1) practical questions). This assessment task provides students with an opportunity to gauge how they are tracking in their learning and understanding of the course material **at the mid-point of the course** (i.e. course content in weeks 1-4). This is an open book exam which is online in Inspira.

Verbal feedback is given once the exam has been marked by the lecturer in charge of each topic.

Assessment outcomes will be posted on Moodle

| | | |
|----------------------------------|--------------------------|------------|
| Research Impact Symposium | Team Presentation | 30% |
|----------------------------------|--------------------------|------------|

Students will design a collaborative presentation to pitch a 'research problem or issue' from the last 15 years. The style of presentation will be a **panel discussion**. The mode of delivery will be determined by the team and every member of the team will be given the opportunity to speak. This task addresses research integrated learning and to a lesser extent work integrated learning. Research on a disease topic with supporting medical research literature is required. Students will be mentored throughout the course by researchers in the areas of immunology, infection and inflammation. Mentors should ideally be early career research (ECR) scientists who can guide and advise students on their research thinking and practice. This builds community by building working relationships between students and staff and addresses ECR development within SoMS. Students will be required to reflect and blog on these experiences.

The marks for the assessment task (**total worth = 30%**) will be broken down in the following way:

- | | |
|---|------------|
| • Assessment/Evaluation (of content) by academics (75%) and peers (25%) | 20% |
| • Team Peer and Self Evaluation on Team Roles and Contribution | 5% |
| • ePortfolio / Research Experience blog | 5% |

Graduate attributes in teamwork, research enquiry, critical thinking (reflective practice) and communication will be addressed.

Feedback on assessment progress will be given to each group by the mentor for research thinking and practice.

Feedback on assessment outcomes will be given in **week 8 in a 1hr interactive session** between students, the mentors, academic staff and Prof. Patsie Polly.

Assessment outcomes will be posted on Moodle.

ePortfolio Submissions

Students are required to post their ePortfolio reflection entries to OU Blog and submit the same blog to Turnitin for originality checks and marking. Instructions on how to submit blog entries to OU Blog and Turnitin are available within the PATH3205 Moodle site.

Please note that UNSW has a **standard late submission** penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours), after which a student cannot submit an assessment, and
- no permitted variation

Keeping to a deadline is part of the assessment. In exceptional circumstances, (where a student has missed at least 3.5 weeks of university during the period of the assignment AND have documents to this effect AND have notified the Course Convenor (Prof. Polly) in writing at least 2 weeks before the deadline), some concession may be offered and is provided on a case-by-case basis.

Final examination

Individual performance

40%

Examination assessing theoretical and practical content knowledge. It is proposed that the examination will consist of 5 short answer questions, 15 MCQs (both assessing theoretical content) and 2 images that are retrieved from the practical course content (assessing practical aspects of the course). This is an open book exam which is online in Inspira.

Students attempt this assessment as individuals in 2hrs during the end of term examination period. The final exam will be held during the Exam Period between: **29 April – 12 May**

Examines understanding of disease processes and their relevance to an underlying example of disease that has been covered throughout the course. Feedback can be provided on an individual basis if students seek it.

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 convenor (Prof. Polly) to discuss their eligibility to sit the exam.

Supplementary examination

If required, it is **intended** that supplementary exams for the School of Biomedical Sciences in Term 1, 2023 will be held between **22-26 May 2023**. Special considerations sought outside the 24-hour time period WILL NOT be accepted except in TRULY exceptional circumstances.

Students who believe that they are eligible for further assessment must contact Prof. Polly to seek further information.

| Assessment task | | Length | Weight | Mark | Due date and time |
|--|------------------|---|----------------------------|-------------|---|
| Assessment Quizzes | 1: | Total 50 mins 50 MCQs 10 MCQs per quiz | Total 10% | Total 10 | Throughout Term during Tutorial times, <i>See Timetable</i> Weeks 2, 4, 8, 10 |
| Assessment Mid-Term exam | 2: | 60 mins 3 SAQs | Total 20% | Total 20 | Week 5 |
| Assessment Research Symposium | 3: Impact | 15 mins/ Research Team Oral Presentation | Total 30% | Total 30 | Week 7 |
| Assessment Final End of Course Exam | 3: | 2 hrs 15 MCQs 5 SAQs | Total 40% | Total 40 | UNSW Exam Period |

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

Assessment criteria are statements of performance attributes or qualities that guide students to see what is important in undertaking each component of assessment in a program or course, and that guide assessors when they are judging students' responses to the assessment component.

Two Rubrics are used for the Research Impact Symposium Team Presentation:

1. Assessment/Evaluation (of content) by academics (75%) and peers (25%)

Marking Criteria

| | 0 | 1 | 2 | 3 | 4 |
|--|---|---|---|---|---|
| Clear explanation of the issue | | | | | |
| Structure of content – introduction, logical flow, conclusions | | | | | |
| Effective use of media | | | | | |
| Ability to answer questions | | | | | |
| Overall impression | | | | | |
| Subtotal | | | | | |
| Total | | | | | |

Comments:

2. Team Peer and Self Evaluation on Team Roles and Contribution

For the Research Impact Symposium Team Presentation, students should be able to:

- Demonstrate understanding of the core issue
- Understand a cutting-edge research technique that addresses and supports the core disease issue both at local and global levels (the impact of the research findings and appreciate the international nature of medical research)
- Demonstrate an understanding of the micro-issues
- Panel discussion is actually a hybrid discussion of student understanding of research issues presented from multiple perspectives for that core issue i.e. the micro-issues and how they feed into or support the core issue
- Discussion of the latest and greatest /strengths and weaknesses
- Negotiated script needed, roles need to be taken by each team member as they will self an peer evaluate teamwork skills

UNSW Teamwork Skills Development Framework

| Criteria | Levels | | | |
|---|--|--|--|---|
| Fosters constructive team climate | <ul style="list-style-type: none"> ● Supports a constructive team climate by doing any ONE of the following: <ul style="list-style-type: none"> • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. | <ul style="list-style-type: none"> ● Supports a constructive team climate by doing any TWO of the following: <ul style="list-style-type: none"> • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. | <ul style="list-style-type: none"> ● Supports a constructive team climate by doing any THREE of the following: <ul style="list-style-type: none"> • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. | <ul style="list-style-type: none"> ● Supports a constructive team climate by doing any FOUR of the following: <ul style="list-style-type: none"> • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. |
| Contribution to team meetings | <ul style="list-style-type: none"> ● Shares ideas but does not advance the work of the group. | <ul style="list-style-type: none"> ● Offers new suggestions to advance the work of the group. | <ul style="list-style-type: none"> ● Offers alternative solutions or courses of action that build on the ideas of others. | <ul style="list-style-type: none"> ● Helps the team move forward by articulating the merits of alternative ideas or proposals. |
| Facilitates the contribution of team members | <ul style="list-style-type: none"> ● Engages team members by taking turns and listening to others without interrupting. | <ul style="list-style-type: none"> ● Engages team members in ways that facilitate their contributions to meetings by restating the views of other team members and/or asking questions for clarification. | <ul style="list-style-type: none"> ● Engages team members in ways that facilitate their contributions to meetings by constructively building upon or synthesizing the contributions of others. | <ul style="list-style-type: none"> ● Engages team members in ways that facilitate their contributions to meetings by constructively building upon or synthesizing the contributions of others as well as noticing when someone is not participating and inviting them to engage. |
| Individual contributions outside of team meetings | <ul style="list-style-type: none"> ● Completes all assigned tasks by deadlines. | <ul style="list-style-type: none"> ● Completes all assigned tasks by deadline; work accomplished advances the project. | <ul style="list-style-type: none"> ● Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. | <ul style="list-style-type: none"> ● Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence. |
| Adaptability and negotiation | <ul style="list-style-type: none"> ● Awareness of the need to adapt to the changing demands of the task. Beginning to develop negotiation skills and willingness to compromise. | <ul style="list-style-type: none"> ● Can sometimes adapt to the changing demands of the task. Demonstrates some negotiation skills; willingness to compromise and suggests alternative solutions. | <ul style="list-style-type: none"> ● Can usually adapt to the changing demands of the task. Demonstrates good negotiation skills; attempts to achieve a win-win outcome. | <ul style="list-style-type: none"> ● Consistently adapts to the changing demands of the task. Demonstrates mastery of negotiation skills; routinely achieves a win-win outcome. |
| Responds to conflict | <ul style="list-style-type: none"> ● Not applicable. | <ul style="list-style-type: none"> ● Passively accepts alternate viewpoints/ideas/opinions. | <ul style="list-style-type: none"> ● Redirecting focus toward common ground, toward task at hand (away from conflict). | <ul style="list-style-type: none"> ● Addresses destructive conflict directly and constructively helping to manage/resolve it in a way that strengthens overall team cohesiveness and future effectiveness. |

<https://www.aacu.org/value/rubrics/teamwork>, adapted by UNSW Medical Sciences Team, 2015

5.3 Submission of assessment tasks

Late Submission

UNSW has standard late submission penalties as outlined in the UNSW Assessment Implementation Procedure, with no permitted variation. All late assignments (unless extension or exemption previously agreed) will be penalised by 5% of the maximum mark per day (including Saturday, Sunday and public holidays). For example, if an assessment task is worth 30 marks, then 1.5 marks will be lost per day (5% of 30) for each day it is late. So, if the grade earned is 24/30 and the task is two days late the student receives a grade of 24 – 3 marks = 21 marks.

Late submission is capped at 5 days (120 hours). This means that a student cannot submit an assessment more than 5 days (120 hours) after the due date for that assessment.

Special Consideration

If you experience a short-term event beyond your control (exceptional circumstances) that impacts your performance in a particular assessment task, you can apply for Special Considerations.

You must apply for Special Consideration **before** the start of your exam or due date for your assessment, except where your circumstances of illness or misadventure stop you from doing so.

If your circumstances stop you from applying before your exam or assessment due date, you must **apply within 3 working days** of the assessment, or the period covered by your supporting documentation.

More information can be found on the [Special Consideration website](#).

5.4. Feedback on assessment

Progressive feedback is provided after each assessment task indicated in section 5.1 Assessment tasks.

6. Academic integrity, referencing and plagiarism

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.

Please use APA referencing style for this course.

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.² 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 <https://subjectguides.library.unsw.edu.au/elise>

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>.

² International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

7. Use of Generative Artificial Intelligence (AI) – such as ChatGPT – in UNSW Assessments – Expectations

7.1 No assistance – e.g. exams and quizzes

It is prohibited to use any software or service to search for or generate information or answers. If its use is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

7.2 Simple editing assistance

For this assessment task, you may use standard editing and referencing software, but not generative AI. You are permitted to use the full capabilities of the standard software to answer the question (e.g. you may wish to specify particular software such as Microsoft Office suite, Grammarly, etc.).

If the use of generative AI such as ChatGPT is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

7.3 Planning assistance – e.g. research tasks

As this assessment task involves some planning or creative processes, you are permitted to use software to generate initial ideas. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e. only occasional AI generated words or phrases may form part of your final submission. It is a good idea to keep copies of the initial prompts to show your lecturer if there is any uncertainty about the originality of your work. [Alternative wording: You are required to submit the original AI generated responses as set out below]

If the outputs of generative AI such as ChatGPT form a part of your submission, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

7.4 Full assistance with attribution

You can use generative AI software in this assessment to the extent specified in the assessment instructions. Any output of generative software within your assessment must be attributed with full referencing.

If the outputs of generative AI such as ChatGPT form part of your submission and is not appropriately attributed, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

* To cite: OpenAI (Year Accessed). ChatGPT. OpenAI. <https://openai.com/models/chatgpt/>

* Please note that the outputs from these tools are not always accurate, appropriate, nor properly referenced. You should ensure that you have moderated and critically evaluated the outputs from generative AI tools such as ChatGPT before submission.

Guidance provided by UNSW Pro Vice-Chancellor, Education & Student Experience 8 February 2023

8. Readings and resources

8.1 Recommended Text

You are expected to acquire or purchase the following text:

Robbins. Basic Pathology, 10th Ed. V. Kumar, RA.K. Abbas & J. Aster (2018). Saunders & Co. Philadelphia PA; Elsevier Saunders (eBook available via UNSW Library website).

Print: <https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780323353175>

Digital: <https://unswbookshop.vitalsource.com/products/-v9780323394130>

8.2 Reference

Students wishing to study the molecular biology or clinical features of diseases in greater depth might consider the following texts:

Robbins and Cotran Pathologic Basis of Disease. 10th edition. Eds. V. Kumar, A.K. Abbas, N. Fausto and J. Aster. (2020) Elsevier Saunders (eBook available via UNSW Library website).

Print: <https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780323531139>

Digital: <https://unswbookshop.vitalsource.com/products/-v9780323609937>

Janeway's Immunobiology 9th Edition. Kenneth Murphy. 2016. Garland Science, Taylor & Francis Group, LLC.

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

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

See also: [Learning Resources](#)

Leganto within the PATH3205 Moodle Site

9. Administrative matters

Student enquiries should be submitted via student portal <https://portal.insight.unsw.edu.au/web-forms/>

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 (patsie.polly@unsw.edu.au) and A/Prof. Cristan Herbert (c.herbert@unsw.edu.au; Head of Teaching in Pathology) by e-mail. Students wishing to see other members of staff should make an appointment via e-mail.

Should you feel that there are particular circumstances that have affected your performance in the course then you should lodge an application for special consideration online via [myUNSW](#). The special consideration procedures are outlined here <https://student.unsw.edu.au/special-consideration>. Please use the following link for student policy/resource information <https://medicalsciences.med.unsw.edu.au/students/undergraduate/advice-students>

Information on the different research units in the Department of Pathology and the research interests of each staff member is available at Department of Pathology's home page at <https://medicalsciences.med.unsw.edu.au/>

10. 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 and Health* <https://www.student.unsw.edu.au/wellbeing>
- UNSW IT Service Centre: <https://www.myit.unsw.edu.au/services/students>
- *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/advisors>
- *Equitable Learning Services (Formerly Disability Support Unit)*: <https://student.unsw.edu.au/els>
- *Transitioning to Online Learning* <https://www.covid19studyonline.unsw.edu.au/>
- *Guide to Online Study* <https://student.unsw.edu.au/online-study>

11. Computer Laboratories or Study Spaces

Students wishing to revise macroscopic specimens (pots) can access the Museum of Human Disease, 9 am – 5 pm, Mon – Fri. Note that all students must be inducted into the Museum before access is granted.

Students wishing to review Histopathology and Macroscopic images via the BEST Network can use computers located in G06/G07 or G16/17, Wallace Wurth West Building.

| | | |
|-----------------------------|---|---|
| Science Teaching Laboratory |  UNSW SYDNEY | Pathology practicals in G6/G7 & G16/G17 in Wallace Wurth for PATH3205 MBD, 2023 |
| Student Risk Assessment | | |





| Hazards | | |
|--|---|--|
| Physical Sharp plastic | 'Stabbing' wound of hand | <ul style="list-style-type: none"> Use disposable gloves |
| Biological Antibody | Inoculation/Irritant | <ul style="list-style-type: none"> Do not eat, drink or smoke in the teaching laboratory Use disposable gloves |
| Chemical Acrylamide Azide ...PBS | Corrosive/Flammable Irritant/neurotoxic Irritant Mild Irritant | <ul style="list-style-type: none"> Low concentrations of chemicals used Use disposable gloves |

Pipetting ergonomics

Pipetting is another work aspect that can cause aches and pains. Here are some handy hints:

- 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.

For more information on preventing repetitive strain while pipetting click on <https://www.anachem.co.uk/Protect-Yourself-from-RSI>

| Personal Protective Equipment required | | | |
|---|---|---|---|
|  Closed In Footwear |  Lab Coat optional |  Gloves |  Safety Goggles optional |
| 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 | | | |
| <ul style="list-style-type: none"> Remove your gloves and dispose in the biowaste bins provided. Dispose of all pipette tips in the bin provided. | | | |
| Ethics Approval | | | |
| This type of practical does not require ethics approval. | | | |
| I have read and understand the safety requirements for this practical class and I will observe these requirements. | | | |
| Signature:.....Date:..... | | | |

Date for review: 14/2/2024

12. The Museum of Human Disease

The Donald Wilhelm Museum of Human Disease is located on the ground floor of the Samuels Building (Building F25). Originally located on the 5th floor of the Wallace Wurth Building, it was established by Professor Donald Wilhelm, the Foundation Professor of Pathology at this university. Thanks to his foresight, and to the tireless efforts of Dr G. Higgins (the Museum Curator until 2004), the Museum has been meticulously maintained and updated over the years to reflect the changing patterns of disease in our society. The Museum contains over 2,700 specimens (or “pots”), which display diseased human tissue at the macroscopic level, usually preserved in formalin. Specimens are obtained both from organs removed surgically and from tissue obtained at autopsy, where the natural history of disease is in full view.

Please take note that some specimens of diseases, which have become rare, e.g. diphtheria, are over 60 years old, and are irreplaceable. Each specimen is numbered and is accompanied by a clinical history (when known), a macroscopic description of the abnormalities displayed, and a histopathological description of changes at the microscopic level (where relevant). That information, specific to each of thirty areas (or “bays”), can be found in the Museum catalogues located in a bracket within each bay.

All the specimens in the museum are arranged in one or other of two major groups. One group comprises collections of specimens according to pathological processes such as congenital, inflammation and healing, vascular, neoplasia etc. The second group comprises collections of specimens under organ systems, such as cardiovascular, central nervous, renal etc. As responsible adults, we expect you to maintain decorum in the Museum, behave with care and respect for the integrity of the specimens, and help to keep the Museum tidy at all times. This means no eating or drinking in the Museum, and always returning specimens and catalogues to their allocated places. **Do not shake the pots!** This activity conveys no useful information, but often damages the specimens. If you discover that a specimen is leaking or broken, follow the instructions listed in the safety notice below. **Remember that the Museum is a precious learning resource, of which you are encouraged to make full use.**

12.1 Security in the museum

It is a crime under the Human Tissue Act to steal or mistreat material preserved in the Museum or practical class laboratories. Anyone who contravenes the Act will be prosecuted.

In order to protect the collection of specimens, access to the Museum is restricted for students in Medicine and PATH3205 during weekdays from 8 a.m. to approximately 8 p.m. The Museum is security locked and can only be entered by using your student card to enable the doors to be opened. The Museum Manager and the Museum Technical Officer play a supervisory role during office hours.

The Museum and practical class laboratories are under constant electronic surveillance.

12.2 Safety in the museum

- Always handle museum specimens with care and respect. All specimens consist of generously donated human tissue.
- The specimens are preserved in fixative solutions which contain a variety of toxic compounds:

| Chemical | Max. Percentage Composition |
|-------------------|-----------------------------|
| Glycerol | 17 (v/v) |
| Pyridine | 0.8 (v/v) |
| Sodium Acetate | 7 (w/v) |
| Formalin | <2 (v/v) |
| Sodium Dithionate | 0.4 (w/v) |

- For reasons of hygiene, never take food or drink into the museum.
- Never leave a museum specimen on the floor, or in any precarious position.
- If a specimen is leaking, turn it upside down to prevent further leakage, then immediately inform the Museum Technical Officer or a member of academic staff.
- If a specimen is broken, do not attempt to wipe up the spillage. Use the kitty litter provided in the central cupboards to absorb the fumes, then clear the area and immediately inform the Museum Technical Officer or a member of academic staff.
- Remember that the museum is here for your benefit - your cooperation in maintaining neatness and safety at all times is appreciated.

See <https://safety.unsw.edu.au/> for more Health & Safety resources