

HUBS2505: Human Pathophysiology

Callaghan and Ourimbah
Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	This course provides an introduction to the concept of human disease and the pathophysiological mechanisms underlying the causes. Students will be provided with an introduction to pathophysiology of the immune, endocrine, circulatory, respiratory, gastrointestinal, musculoskeletal, renal and nervous systems. Associated pathologies of these systems will be introduced and explored.
Assumed Knowledge	HUBS1403 Biomedical Science Part 1 and HUBS1404 Biomedical Science Part 2, or HUBS1401 Human Bioscience
Contact Hours	Callaghan Lecture Online modules – available via Canvas 3 hour(s) per Week for 12 Weeks Tutorial Face to Face On Campus 1 hour(s) per Week for 12 Weeks
Unit Weighting	10
Workload	Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

CONTACTS

Course Coordinator	All Locations Dr Daniel Beard Daniel.J.Beard@newcastle.edu.au Consultation: email for an appointment
Academic Online content	Dr Melissa Tadros (MT) Dr Kirsten Coupland Kirsten.Coupland@newcastle.edu.au Professor Neil Spratt Neil.Spratt@newcastle.edu.au Dr Daniel Beard Daniel.J.Beard@newcastle.edu.au
Tutorial staffing	Dr Daniel Beard Daniel.J.Beard@newcastle.edu.au Dr Erin Gardiner erin.gardiner@newcastle.edu.au
School Office	School of Biomedical Sciences and Pharmacy MS607 Medical Sciences Building Callaghan Biomedsci-Admin@newcastle.edu.au 02 49218679 or 49212058 8:30am-5pm (Mon-Fri)

COURSE OUTLINE

SYLLABUS

Course Content

Students will initially be introduced to the concepts of disease, some basic terminology of pathophysiology and to the mechanisms by which cells undergo injury and adapt to such insult.

This will be followed by a module comprising an overview of infection and immune responses to pathogenic agents, inflammation, and hypersensitivity, autoimmunity and immunodeficiency. Common endocrine disorders will also be discussed.

The second module will consider pathophysiological mechanisms underlying disorders of blood and the lymphatic system together with an introduction to mechanisms underlying neoplasms.

Module three explores cardiovascular disease and includes consideration of the consequences of structural abnormalities, disorders of electro-conduction, ischaemic heart disease, heart failure and common vascular disorders.

Module four involves the respiratory system and will focus on acute pulmonary syndromes, obstructive and restrictive disease.

Module five will discuss upper and lower gastrointestinal tract pathophysiology, and will also examine disorders of the accessory organs of the digestive system – liver, pancreas and gall bladder.

Module six considers pathophysiological mechanisms underlying disorders of the musculoskeletal system. Renal pathophysiology including aspects of acute and chronic renal failure and some common diseases that affect kidney function will also be considered in this module.

Module seven will explore the mechanisms underlying pathophysiology of neurological dysfunction; at both the cellular and systems level as occurs in stroke, space occupying lesions, degenerative disorders and with injury to peripheral and central elements of the nervous system.

Course Learning Outcomes

1. Develop an understanding of the concept of human disease.
2. Develop an understanding of the pathology and pathophysiology associated with disorders of the immune, endocrine, circulatory, respiratory, gastrointestinal, musculoskeletal, renal and nervous systems.
3. Develop an understanding of the pathophysiological mechanisms and processes underlying human diseases.

Course Materials

Recommended Text:

- Gould's Pathophysiology for Health Professions, 6th Edition (2017), Hubert & VanMeter, Elsevier. ISBN 9780323414425
- Study guide for Gould's Pathophysiology for Health Professions, 6th Edition (2017), Hubert & VanMeter, Elsevier.

COMPULSORY REQUIREMENTS

In order to pass this course, each student must complete ALL of the following compulsory requirements:

Course Assessment Requirements:

- Assessment 1 - In Term Test: Attempt / Submission Requirement - Students must attempt/submit this assessment item to be able to pass the course overall.
- Assessment 2 - Formal Examination: Attempt / Submission Requirement - Students must attempt/submit this assessment item to be able to pass the course overall.

ASSESSMENTS

This course has 2 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Intra-semester exams (x2)*	Week 5 – Monday 25 th March Week 9 – Monday 6 th May	Individual	50%	1-3
2	Final exam*		Individual	50%	1-3

* This assessment has a compulsory requirement.

Assessment 1 - Intra-semester exams (x2)

Assessment Type

In Term Test

Weighting

25% each

Compulsory Requirements

Attempt / Submission Requirement - Students must attempt/submit this assessment item to be able to pass the course overall.

Due Date

Week 5 - Monday 25th March - Online via Canvas
Week 9 – Monday 6th May - Online via Canvas

Online Exams

You must take the online exams at the specified times. We cannot open up the assessment if you miss the start. Please ensure you have a reliable internet connection. We are not responsible for any IT issues outside the University. Refer to the adverse circumstances section below for how to deal with missed exams due to illness or other legitimate reasons covered by University policy.

Submission Method

Online

Assessment Criteria

All assessment items will consist of Multiple Choice Questions (MCQs) with one best correct option

Mini-test 1: Week 5

This test will assess the material covered during **Weeks 1-3**, specifically:

- Concepts of disease
- Cell injury
- Infection
- Inflammation & healing
- Immunity & abnormal immune responses
- Endocrine disorders
- Blood dyscrasias
- Leukaemia & lymphatic disorders
- Neoplasms

Assessment Criteria

Mini-test 2: Week 9

This test will assess the material covered during **Weeks 4-7**, specifically:

- Structural abnormalities of the heart
- Electrical abnormalities of the heart
- Congestive heart failure
- Atherosclerosis & arterial disease
- Ischaemic heart disease & CAD
- Shock/Hypotension
- Respiratory tract infections
- Obstructive lung disorders I & II
- Restrictive & vascular lung disorders
- Respiratory expansion disorders, distress syndrome & failure

Assessment Criteria

Further details, will be placed on the Course CANVAS site prior to each of these assessments

Return Method

Not Returned

Feedback Provided

Yes

Assessment 2 - Final exam

Assessment Type

Formal Examination

Weighting

50%

Compulsory Requirement

Attempt / Submission Requirement - Students must attempt/submit this assessment item to pass the course overall.

Due Date

Formal Exam period

Submission Method

Online - TBC

Assessment Criteria

All assessment items will consist of Multiple Choice Questions (MCQs) with one best correct option

Return Method

Not Returned

Feedback Provided

No

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic ability; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Very Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic ability; reasonable development of skills*; and achievement of all assessment objectives.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic ability; satisfactory development of skills*; and achievement of most assessment objectives.
0-49	Fail (FF)	Failure to satisfactorily achieve assessment objectives or compulsory course requirements. A fail grade may also be awarded following disciplinary action.

Communication Methods	Communication methods used in this course include: - CANVAS Course Site: Students will receive communications via the posting of content or announcements on the CANVAS course site. - Email: Students will receive communications via their student email account.
Course Evaluation	Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.
Oral Interviews	As part of the evaluation process of any assessment item in this course an oral examination may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination Guidelines. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.
Academic Misconduct	All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to https://policies.newcastle.edu.au/document/view-current.php?id=35 .
Adverse Circumstances	You are entitled to apply for special consideration because adverse circumstances have had an impact on your performance in an assessment item. This includes applying for an extension of time to complete an assessment item. Prior to applying you must refer to the Adverse Circumstances Affecting Assessment Items Procedure, available at https://policies.newcastle.edu.au/document/view-current.php?id=236 . All applications for Adverse Circumstances must be lodged via the online Adverse Circumstances system, along with supporting documentation.
Supplementary Assessment for Fail Grades	Students may be eligible for a supplementary assessment if they fail the course. Refer to Section 138 in the Course Management and Assessment Manual for the criteria https://policies.newcastle.edu.au/document/view-current.php?id=183
Important Policy Information	The 'HELP for Students' tab in UoNline contains important information that all students should be familiar with, including various systems, policies and procedures.

Tutorial Group Week 2-4, 6-12 – No tutorial weeks 1 and 5

CALLAGHAN

Tut Group	Day	Time	Venue	Teaching Staff
Gp 1	Wed	5 pm -6 pm	V107	D Beard
Gp 2	Fri	12 pm – 1 pm	VG10	D Beard
Gp 3	Fri	4 pm – 5 pm	VG07	D Beard

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Tut Group	Day	Time	Venue	Teaching Staff
Gp 1	Wed	4 pm – 5 pm	CS218	E Gardiner

HUBS2505 - HUMAN PATHOPHYSIOLOGY LECTURE AND TUTORIAL SCHEDULE

Course Location	Week	Date	Teaching Contact	Duration (hrs)	Format	Topic	Location
All campuses	WK 1	26 Feb	D Beard	1	Lecture	(Brief Intro HUBS2505) Concepts of disease (MT)	Online
			D Beard	1	Lecture	Cell injury (MT)	Online
			D Beard	1	Lecture	Infection (MT)	Online
				1	Tutorial	No tutorial week 1	
	WK 2	4 Mar	D Beard	1	Lecture	Inflammation & healing (MT)	Online
			D Beard	1	Lecture	Immunity & abnormal immune responses (MT)	Online
			D Beard	1	Lecture	Endocrine disorders (MT)	Online
				1	Tutorial	<i>Cellular injury and infection</i>	
	WK 3	11 Mar	D Beard	1	Lecture	Blood dyscrasias (MT)	Online
			D Beard	1	Lecture	Leukaemia & lymphatic disorders (MT)	Online
			D Beard	1	Lecture	Neoplasms (MT)	Online
				1	Tutorial	<i>Inflammation, immunity and endocrine disorders</i>	
	WK 4	18 Mar	D Beard	1	Lecture	Structural abnormalities of the heart	Online
			D Beard	1	Lecture	Electrical abnormalities of the heart	Online
			N Spratt	1	Lecture	Congestive heart failure	Online
				1	Tutorial	<i>Blood, lymph, and neoplasm</i>	
	WK 5	25 Mar		1	TEST 1	Online via Canvas (open 5pm til 8pm)	
		25 Mar	N Spratt	1	Lecture	Atherosclerosis & arterial disease	Online
			N Spratt	1	Lecture	Ischaemic heart disease & CAD	Online
			N Spratt	1	Lecture	Shock/Hypotension	Online
				1	Tutorial	No tutorial week 5	
	WK 6	1 Apr	D Beard	1	Lecture	Respiratory tract infections (MT)	Online
			D Beard	1	Lecture	Obstructive lung disorders I (MT)	Online
			D Beard	1	Lecture	Obstructive lung disorders II (MT)	Online
				1	Tutorial	<i>Heart dysfunction</i>	
	WK 7	8 Apr	D Beard	1	Lecture	Restrictive & vascular lung disorders (MT)	Online
			D Beard	1	Lecture	Respiratory expansion disorders, distress syndrome & failure (MT)	Online
			D Beard	1	Lecture	MT1 feedback	Online
				1	Tutorial	<i>Vascular dysfunction</i>	
Mid semester break							
	WK 8	29 Apr	D Beard	1	Lecture	Gastrointestinal tract disorders I	Online
			D Beard	1	Lecture	Gastrointestinal tract disorders II	Online
			D Beard	1	Lecture	Liver & pancreatic disorders	Online
				1	Tutorial	<i>Respiratory dysfunction</i>	
	WK 9	6 May		1	TEST 2	Online via Canvas (open 5pm til 8pm)	
		6 May	D Beard	1	Lecture	Diabetes	Online
			D Beard	1	Lecture	Musculoskeletal disorders I (MT)	Online
			D Beard	1	Lecture	Musculoskeletal disorders II (MT)	Online
				1	Tutorial	<i>Gastrointestinal tract and liver disorders</i>	
	WK 10	13 May	D Beard	1	Lecture	Urinary infections & inflammation	Online
			D Beard	1	Lecture	Urinary tract obstructions & vascular disorders	Online
			D Beard	1	Lecture	Renal failure	Online
				1	Tutorial	<i>Musculoskeletal disorders and diabetes</i>	

Course Location	Week	Date	Teaching Contact	Duration (hrs)	Format	Topic	Location
	WK 11	20 May	N Spratt	1	Lecture	Acute neurological disorders	Online
			N Spratt	1	Lecture	Stroke	Online
			N Spratt	1	Lecture	Dysfunctional pain	Online
				1	Tutorial	<i>Renal dysfunction</i>	
Exam Period June 11th - June 21st							
	WK 12	27 May	N Spratt	1	Lecture	Chronic CNS disorders	Online
			K Coupland	1	Lecture	Dementia	Online
			N Spratt	1	Lecture	Disorders of thought & mood	Online
				1	Tutorial	<i>Neurological dysfunction</i>	
Rescheduled exam period July 15th – 19th July							

***Please note that all students are expected to be available during BOTH formal and rescheduled exam periods. In the event that you have an approved rescheduled or supplementary exam, this will be held in the rescheduled exam period. If you have made plans to travel or work during that period, you will not be offered another opportunity to sit the examination.**

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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