

VICTORIA UNIVERSITY OF WELLINGTON
SCHOOL OF BIOLOGICAL SCIENCES

COURSE OUTLINE:
BIOL 244/BMSC 244: INTRODUCTORY BIOCHEMISTRY
Trimester One 2013

Course description

An introduction to: the relationship between structure and function of proteins, including catalysis and its regulation; and mechanisms and roles of metabolic processes.

Prerequisites: BIOL 111; CHEM 113 or 114

Restrictions: BIOL/BMSC 209, 210, 239, 240, BMSC/BIOL 244

Staff

Dr Bill Jordan	Alan MacDiarmid Building 303 (Course Coordinator)
Dr Darrren Day	Kirk 802
Dr Ian Hermans	Malaghan Institute of Medical Research
Dr Lifeng Peng	Alan MacDiarmid Building 302
Dr Paul Teesdale-Spittle	Alan MacDiarmid Building 308

Office hours: Staff are generally available Monday-Friday but are sometimes off-campus or otherwise occupied. Preferred times for Bill Jordan are generally Monday-Thursday 2-4 pm.

For assistance or advice on any aspect of the course contact Bill Jordan email bill.jordan@vuw.ac.nz

Trimester dates

- Lectures: March 4 - June 7
- Practical course. There are five four-hour laboratories in weeks 8-12 of the course, see below
- Study and Examination time: June 10 – July 3. *You must be available to sit the final exam that will be scheduled in these weeks*

Course delivery This course is taught by four lectures per week for twelve weeks, plus five four-hour laboratories.

Lectures

Mon, Tue, Thu, Fri 12:00 – 12:50 Maclaurin MCLT101

Practical laboratory course (Weeks of 29 April to 27 May) Laboratory KK401

Choose one or the other laboratory stream

Either Monday 1.10-5.00 pm

Or Tuesday 1.10-5.00 pm

A sign-up sheet for choice of laboratory day will be outside the laboratory Kirk401

Required materials The Laboratory Manual will be available for purchase from week 6 of the course from *vicbooks*, Level 3 of the Student Union Building. A laboratory coat, also available for purchase from *vicbooks*, and closed footwear, are necessary for laboratory work.

Course Content and Learning Objectives

The goal of this course is to provide an introduction to biochemistry, focusing on proteins, enzymes and the functions of metabolic processes. In the in-term tests and final examination you will be expected to recall and use information to show that you understand and have an overall appreciation of the course content.

Workload

Four lectures per week plus approximately four hours personal study lecture revision weekly throughout the course.

Four hours practical laboratory class per week plus an average of approximately four hours laboratory write-up per week, second half of the course only.

The recommended text is Garrett and Grisham “Biochemistry” 5th edition. References will be given to the 4th and 5th Editions of this textbook. Other previously used Biochemistry textbooks such as earlier editions of Garrett and Grisham, Voet and Voet, or Zubay, may be available second hand.

Attendance at all lectures is essential to satisfactorily complete the course. Some abbreviated course notes may be made available on Blackboard. The complete course material will not be posted on Blackboard.

Assessment The course is assessed by a 60% final examination at midyear and 40% in-term components.

The in-term mark will be calculated (out of a total 40%):

- Theory Test I (10%). Covers first four weeks lectures (proteins and enzymes) Monday 15 April 12:00-12:50 am
- Theory Test II (10%). Covers weeks five to ten lectures (carbohydrate, energy and lipid metabolism) Tuesday 4 June 12:00-12:50 am
- Four laboratory reports, 5% each

Compulsory Course Requirements The requirements for passing this course are: at least 50% total marks for the course with at least 45% in the final examination.

To sit the final examination a greater than 40% average must be achieved for the two Theory Tests, plus at least 40% averaged over the four laboratory reports with a minimum mark of 30% for any of the laboratory reports. In exceptional circumstances students not meeting these requirements may be allowed to sit the final examination at the discretion of the Course Coordinator.

The in-term theory tests and laboratory reports are compulsory If for any reason you feel you are unable to comply or your performance is likely to be impaired consult Dr Jordan before the tests or report hand-in dates.

Additional Information Any additional information about this course will be communicated during lectures and will be posted on blackboard.

LECTURES

WEEKS 1 - 5	DRS TEESDALE-SPITTLE AND PENG	PROTEINS AND ENZYMES
WEEKS 6 - 7	DR JORDAN	CARBOHYDRATE METABOLISM
WEEKS 8 - 9	DR DAY	MITOCHONDRIAL METABOLISM: TCA CYCLE, BIOENERGETICS, OXIDATIVE PHOSPHORYLATION
WEEKS 10 – 11	DR HERMANS	LIPID METABOLISM
WEEKS 12 – 13	DR JORDAN	NITROGEN METABOLISM, METABOLIC INTEGRATION

LABORATORY SCHEDULE

Practical laboratory course (course weeks 8-12)

Choose one or the other laboratory stream

Either Monday 1.10-5.00 pm

Or Tuesday 1.10-5.00 pm

WEEK 8 (29, 30 APRIL)	PROTEIN PURIFICATION, REPORT DUE FRIDAY 10 MAY
WEEK 9 (6, 7 MAY)	ENZYME KINETICS I, REPORT DUE FRIDAY 31 MAY
WEEK 10 (13, 14 MAY)	ENZYME KINETICS II, REPORT DUE FRIDAY 31 MAY
WEEK 11 (20, 21 MAY)	ENZYME KINETICS, DATA PROCESSING AND WRITE-UP (FOR 31 MAY)
WEEK 12 (27, 28 MAY)	TRANSAMINATION, REPORT DUE FRIDAY 7 JUNE

VUW requires that the following information be supplied

Withdrawal from courses, information and deadlines

See <http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

Penalties

The marks given for laboratory reports will be discounted 5% per day for late submission of work, unless prior approval for late hand-in is given by the staff member marking the laboratory report.

Class Representative

A class representative will be elected in the first class, and that person's name and contact details will be available to VUWSA, the Course Coordinator and the class. The class representative provides a communication channel to liaise with the Course Coordinator on behalf of students.

Where to find more detailed information

Find key dates, explanations of grades and other useful information at www.victoria.ac.nz/home/study. Find out about academic progress and restricted enrolment at www.victoria.ac.nz/home/study/academic-progress. The University's statutes and policies are available at www.victoria.ac.nz/home/about/policy, except qualification statutes, which are available via the Calendar webpage at www.victoria.ac.nz/home/study/calendar (See Section C).

Academic integrity and plagiarism

Academic integrity means that University staff and students, in their teaching and learning are expected to treat others honestly, fairly and with respect at all times. It is not acceptable to mistreat academic, intellectual or creative work that has been done by other people by representing it as your own original work.

Academic integrity is important because it is the core value on which the University's learning, teaching and research activities are based. Victoria University's reputation for academic integrity adds value to your qualification.

The University defines plagiarism as presenting someone else's work as if it were your own, whether you mean to or not. 'Someone else's work' means anything that is not your own idea. Even if it is presented in your own style, you must acknowledge your sources fully and appropriately. This includes:

- **Material from books, journals or any other printed source**
- **The work of other students or students or staff**
- **Information from the internet**
- **Software programs and other electronic material**
- **Designs and ideas**
- **The organisation or structuring of any such material**

Find out more about plagiarism, how to avoid it and penalties, on the University's website: www.victoria.ac.nz/home/studying/plagiarism.html

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an online plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and subject to checking by Turnitin. Turnitin will retain a copy of submitted material on behalf of the University for detection of future plagiarism, but access to the full text of submissions is not made available to any other party.