

BTEC 101: INTRODUCTION TO BIOTECHNOLOGY

2013

Lecturers:

Assoc. Prof. David Ackerley (Course coordinator) KK803; david.ackerley@vuw.ac.nz

Dr Stephen Cordiner (Forensic Science Leader, Environmental Science & Research Ltd.)

Dr Diane Ormsby (School of Biological Sciences, VUW)

Dr Emma Dangerfield (Scientist, Malaghan Medical Research Institute)

Dr George Slim (CEO of NZBIO – the New Zealand Biotechnology Organisation)

Course Objectives:

The aims of this course are to provide a solid understanding of the pure and applied science underlying the biotechnology industry, and to provide insight into the cultural and ethical values, and economic and political issues, that this science must align with. Particular focus in lectures will be given to the techniques and applications of recombinant biotechnology in microbes, plants and animals; the harnessing of natural resources; reproductive and health-related biotechnology, including drug discovery and development; and the regulation of biotechnology, in particular in New Zealand.

Lectures:

Time, Dates and Rooms: There are 44 scheduled class sessions. These will be held Tuesdays 12.00-12.50 pm in HMLT002; Wednesdays 2.10-3.00 pm in HULT119; Thursdays 2.10-3.00 pm in COLT122; and Fridays 2.10-3.00 pm in MCLT102. Please note that there are **no classes scheduled for the first four Tuesdays after mid-semester break**. Also note that the class will be divided into two groups for Reproductive Biotechnology workshops to be held on May 29th/30th, with only one group having to attend each day.

Additional activities: Movie screening (non-mandatory) Friday March 8th through to 3.45 pm (in HMLT105); and Exam tutorial Thursday June 6th, 2.10-3.00 pm in COLT122. Otherwise **there are no tutorials** for this course.

Text Books:

There is no required text for this course; however, the following may provide useful reference material. The core text for BTEC 201 and 301 will be "Molecular Biotechnology: Principles and Applications of Recombinant DNA" (3rd or 4th Edition) by Glick & Pasternak. Other general references are "Introduction to Biotechnology" by Thieman & Palladino; and "Molecular Biology of the Cell" (4th Edition) by Alberts, Johnson, Lewis, Raff, Roberts and Walter. These books may all be purchased from the University Book Store and a number of copies are also available on close reserve in the library. Additional reference materials will be provided in lectures.

Lecture material:

The class timetable is scheduled as follows. Any changes to this timetable will be announced in class and on the course Blackboard site

Date	Block	Example topics	Lecturer
05/03/2013 (14 Lectures)	Setting the Scene: Introduction to Biotechnology and Molecular Biology	Course introduction. What is biotechnology? Types of biotechnology. Molecular Biology: DNA, RNA and proteins as tools for biotechnology. Introduction to recombinant and microbial biotechnology. PCR. Generation of transgenic plants.	Dr David Ackerley
28/03/2013	Easter break		
04/04/2013 (4 Lectures)	Recombinant and Medical Biotechnology; Bioprospecting	Generation of transgenic animals. Medical biotechnology: animal models, clinical trials, genetics. Bioprospecting.	Dr David Ackerley
11/04/2013 (2 Lectures)	Forensic Biotechnology	Just how silly <u>is</u> CSI?	Dr Steve Cordiner
16/04/2013	Terms Test I (worth 20% of final grade)		
17/04/2013 (3 Lectures)	Society, Ethics, and Regulation	Social history of biotechnology. Social and ethical concerns. Political dimensions of biotechnology. Future trends.	Dr George Slim
22/04/2013	Mid-trimester break		
01/05/2013 (3 Lectures)	Society, Ethics, and Regulation	Social history of biotechnology. Social and ethical concerns. Political dimensions of biotechnology. Future trends.	Dr George Slim
08/05/2013 (7 Lectures)	Biodiscovery and Innovation.	International and national examples of innovation. Pharmacology and clinical trials. Successes and failures.	Dr Emma Dangerfield
23/05/2013 (6 lectures, 2 workshops)	Reproductive Biotechnology	Human reproductive technologies: introduction, underlying science, topical issues, ethics and regulation.	Dr Diane Ormsby
06/06/2013	Exam Tutorial	Format, priorities, study and exam techniques.	Dr David Ackerley
07/06/2013	Terms Test II (worth 20% of final grade)		

Assessment:

The final grade will be based upon contributions from:

Assessment item	Weighting	Date
Terms Test I (DA, SC; 50 min)	20%	16/04/2013
Reproductive Biotechnology Assignment ¹	5%	31/05/2013
Terms Test II (JM, DO, GS, ED; 50 min)	20%	06/06/2013
Examination (All but SC; 2 hours)	55%	to be announced

¹*An in-class assessment, to be held during the usual lecture slot*

As well as contributing to your total mark, these assessments are intended to give you an indication as to your progress through the course and your command of the material presented in the course. The final exam is intended to test your overall mastery of the subject. **To obtain a pass in this course, a student must have obtained terms (see below) and have obtained an overall mark of at least 50%, with a better than 40% mark in the final exam.**

Terms: Before students can be credited with a pass in the final examinations they must qualify for terms (i.e. they must have met mandatory requirements) by satisfactory attendance and performance in the in-term test and assignment. Terms will be awarded on the last day of lectures (June 2). Note that it is a mandatory requirement that a student obtain more than 40% in final examinations.

Calculators: Numerical problems may be set in the terms test and final examination. Only simple, non-programmable calculators will be permitted in these assessments, and only when students have been informed in advance that there will be a need for them.

Notices: Notices for this course will be posted on the notice board next to the School of Biological Sciences Office 5th Floor, New Kirk building, and on the Blackboard site for this course.

Dead-lines, extensions and penalties: Requests to sit a 'making up' terms test, or an extension of the due date for an assignment, can be granted *only* if you have been prevented from attending a test (or completing an item of assessment) because of an illness or injury; personal bereavement; or some other critical personal circumstance or exceptional circumstance. The illness or impairment must be verified at the time by supporting documents from a registered health professional (medical practitioner, midwife, dental surgeon, psychologist, or counsellor approved by the Convener of the Academic Committee). In other exceptional circumstances some form of official documentation will be required. Applications must be made within a reasonable time of the assessment date, or in circumstances beyond your control on the day of the assessment.

Without adequate excuse, late assignments will be penalised up to 5% per day overdue.

Work load: Students should plan, on average, to spend the time devoted to this course in the following fashion.

Lectures	3-4 h/week
Lecture revision	4-5 h/week
Assignment	1 h/week (on average)

Total 8-10 h/week

Further time is expected to be spent in revision for tests and exams, giving an overall 150 hours for the 15 point course.

How to Deal with Problems

A system of Class Representatives was initiated by VUWSA in 1990. The role of the Class Representative is to make student opinion about the course available to the academic staff. Individual students should also feel free to make these concerns known at any time. Options are to post opinions or concerns on the Blackboard Discussion Board, or to go approach the Class Representative or go directly to an academic staff member. In the case of a major concern, either about course standards or treatment of individual students, the following people can be contacted.

Dr David Ackerley	(KK804)	Programme Coordinator
Dr Simon Davy	(KK502)	Head of School of Biological Sciences
Ms Shona de Sain	(CB331)	Dean of Students (Science)

General University policies and statutes

Students should familiarise themselves with the University's policies and statutes, particularly the Assessment Statute, the Personal Courses of Study Statute, the Statute on Student Conduct and any statutes relating to the particular qualifications being studied; see the *Victoria University Calendar* or the University's policy website, <http://www.victoria.ac.nz/home/about/policy>.

Student Conduct and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps are to be taken if there is a complaint. For information about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor or refer to the statute on the Victoria policy website at: <http://www.victoria.ac.nz/home/about/policy>.

The Policy on Staff Conduct can be found at: <http://www.victoria.ac.nz/home/about/policy>.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned; class representatives may be able to help you in this. If you are not satisfied with the result of that meeting, see the Head of School or the relevant Associate Dean; The VUWSA Student Advocate is available to assist in this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievance Policy, published on the Victoria website at: <http://www.victoria.ac.nz/home/about/policy>. There is also a leaflet explaining the grievance process available from the AVC(Academic) website at: <http://www.victoria.ac.nz/home/about/avcacademic/Publications.aspx#grievances>.

Students with Impairments

Refer to the "Meeting the Needs of Students with Impairments Policy", available on the University's policy website. <http://www.victoria.ac.nz/home/about/policy>. The University has a policy of reasonable accommodation of the needs of students with impairments. The policy aims to give students with disabilities the same opportunity as other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, please contact the course coordinator as early in the course as possible. Alternatively, you may wish to approach a Student Adviser from Disability Support Services (DSS) to discuss your individual needs and the available options and support on a confidential basis. DSS are located on Level 1, Robert Stout Building, telephone: 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person is in the relevant prospectus or can be obtained from the School Office or DSS.

Student Support

Staff at Victoria want students to have positive learning experiences at the University. There are a number of support services available to help you directly if your academic progress is causing concern or if there are elements in your life that are affecting your ability to study. These include:

- Your course coordinator or programme director;
- Staff in your Faculty Student Administration Office Student Dedicated learning support through Student Learning Support Service; Kaiwawao Māori ;Maanaki Pihiphipinga; Disability Support Services and Victoria International;
- Wider holistic support through the Health Service; Counselling Service; Financial Support and Advice; Accommodation Service and Career Development and Employment. Find out more at www.victoria.ac.nz/st_services/ or email student-services@vuw.ac.nz;
- VUWSA employs a Student Advocate who deals with academic problems and provides support, advice and advocacy services, as well as training and supporting class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building. Email education@vuwsa.org.nz or tel. 463-6716 or 463-6984.

Academic Integrity and Plagiarism

Academic integrity is about honesty – put simply it means **no cheating**. 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 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.

Be aware that staff marking your assignments also use Google and the internet! And note also that 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.