

534-306 Drug Discovery

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 12 lectures (two per week for six weeks) and 36 hours of practical workshops (one 6-hour session per week for six weeks) during the second half of Semester 2 Total Time Commitment: 120 hours
Prerequisites:	534-301 Cellular and Molecular Pharmacology; exemption may be given at the discretion of the Head of Department. Some 200-level chemistry is desirable, preferably 610-210 or 610-221.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
Coordinator:	Dr Richard Anthony Hughes
Subject Overview:	The teaching program will introduce students to the means by which new drugs can be discovered. The lectures will cover the following topics: historical background; choice of therapeutic target; screening; rational drug design; molecular modelling; quantitative structure-activity relationships; the emerging role of combinatorial chemistry; peptide-based drug design; recombinant proteins as drugs; novel delivery systems; in-vitro and in-vivo assays; high throughput assays; and the impact of molecular biology on drug discovery. In the practicals, students will develop skills in the use of computer-aided molecular modelling to understand drug and receptor structure and how this knowledge can be applied to the design of new drugs, and examine case studies of modern drug discovery. Students will be encouraged to integrate knowledge from different parts of the subject, reinforcing the need for a multidisciplinary approach to the discovery and development of new drugs.
Objectives:	By the end of this subject a student will have: <ul style="list-style-type: none"> # knowledge of the different approaches to drug discovery including rational drug design through structure activity relationships; # an understanding of the emerging role of combinatorial chemistry in drug discovery; # applied laboratory techniques including computational drug design; and # gained experience in the written and oral presentation of scientific data and developed an appreciation of the scientific literature.
Assessment:	Ongoing assessment of practical work during the semester (25%); a 2-hour written examination in the examination period (75%).
Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04) # Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)

	You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Upon completion of this subject students should develop skills in: <ul style="list-style-type: none"> # making use of information technology resources in knowledge building and data presentation; # participating effectively in group work; and # organising information into a clear report.
Notes:	Students enrolled in the BSc (pre-2008 BSc), BAsC or a combined BSc course will receive science credit for the completion of this subject.
Related Course(s):	Bachelor of Biomedical Science Graduate Diploma in Biotechnology
Related Majors/Minors/ Specialisations:	Biotechnology Pharmacology