BIOL10005 Genetics & The Evolution of Life

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Contact Hours: 3 x one hour lectures per week, 1 hour per week of tutorials or workshops, 2 hours of practical work per fortnight and 3 hours per week of e-learning including independent learning tasks, pre and post laboratory activities. Total Time Commitment: Estimated total time commitment of 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit cannot be gained for this subject and: **Subject** / **Study Period Commencement:** / **Credit Points:** BIOL10003 Genes and Environment / Semester 2 / 12.50 Students who have passed BIOL10005 may not enrol into **GENE10001 Genetics in the Media (../../view/current/Gene10001)**
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Assoc Prof Dawn Gleeson
Contact:	Biology Laboratory Level 5 Redmond Barry Building **Tel:** (03) 8344 4881 **Fax:** (03) 9347 0604 **Email: biology-info@unimelb.edu.au (mailto:biology-info@unimelb.edu.au)**
Subject Overview:	The objective of this subject is to familiarise students with modern concepts of genetics, animal and plant diversity and evolution. Topics studied include the nature of variation, inheritance, genes and chromosomes, human genetics, DNA replication, gene action and expression, population genetics, selection, the genetics of speciation, molecular evolution, evolutionary biology and the origin of life, classification of organisms diversity of life, communities, ecosystems and the relationship of organisms to their environment, human impact, preserving habitats and genetic variation.
Learning Outcomes:	At the completion of this subject, students should be able to understand:

	# the basic mechanisms of inheritance, recombination and mutation; # the structure of DNA, its replication and the molecular basis of gene action; # the nature of genetic variation in populations, natural selection, microevolution, reproductive isolation and speciation; # the evidence for the evolution of life # and apply the principles of classification; # the diversity of organisms and their relationship to each other and the environment; and # the basic concepts of population ecology, community structure and ecosystem.
Assessment:	a 20 minute, multiple choice test held mid-semester (5%); work related to practical classes during the semester with a combination of assessment of practical skills within the practical class, completion of 4 or 5 on-line pre-practical tests; written work within the practical not exceeding 500 words; and 4 or 5 short multiple choice tests (25%); completion of 5 Independent Learning Tasks throughout the semester (5%); a written assignment not exceeding 500 words (5%), a 3 hour examination on theory and practical work in the examination period (60%). Satisfactory completion of practical work is necessary to pass the subject (i.e. an 80% attendance at the practical classes together with a result for the assessed practical work of at least 50%).
Prescribed Texts:	R B Knox, P Y Ladiges, B K Evans and R Saint, Biology, An Australian Focus 5th Ed, McGraw-Hill, 2014
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2015/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS)** 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:	Students should develop generic skills in: # manipulating laboratory equipment, in particular using microscopes and gel electrophoresis; # the recording of observations and the analysis and interpretation of data; # the statistical analysis of genetic data; and # accessing information sources and discerning use of the world wide web.
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. Many second year subjects require the completion of this subject and BIOL10004 Biology of Cells and Organisms This subject involves the use of animals that form an essential part of the learning objectives for this subject. Please note: There are some non-dissection alternatives for those who have strong philosophical objections and these and other alternatives can be discussed with the subject co-ordinator. This is a joint botany, genetics and zoology subject. Required equipment - laboratory coat.
Related Majors/Minors/ Specialisations:	Production Animal Health Science-credited subjects - new generation B-SCI and B-ENG. Sustainable Production
Related Breadth Track(s):	Microbiology and immunology General Genetics

	Biotechnology Cell & Developmental Biology Genetics and Society Human Genetics Ecology