

## BIOL90001 Microscopy for Biological Sciences

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| <b>Credit Points:</b>                    | 12.50  |
| <b>Level:</b>                            | 9 (Graduate/Postgraduate)  |
| <b>Dates &amp; Locations:</b>            | 2011, Parkville<br>This subject commences in the following study period/s:<br>Semester 1, Parkville - Taught on campus.  |
| <b>Time Commitment:</b>                  | Contact Hours: 36 hours comprising 1 four-hour workshop per week (9 workshops over the semester). Total Time Commitment: Not available   |
| <b>Prerequisites:</b>                    | None   |
| <b>Corequisites:</b>                     | None   |
| <b>Recommended Background Knowledge:</b> | None   |
| <b>Non Allowed Subjects:</b>             | None   |
| <b>Core Participation Requirements:</b>  | 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. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.   |
| <b>Coordinator:</b>                      | Dr Andrew Drinnan  |
| <b>Contact:</b>                          | Email: a.drinnan@unimelb.edu.au  |
| <b>Subject Overview:</b>                 | Microscopy is the key technique for imaging fine structure in biological specimens. This subject will introduce the range of methods and capabilities of light microscopy, scanning and transmission electron microscopy, and laser scanning confocal microscopy, as well as the methods of specimen preparation for standard histochemical and immunocytochemical techniques. The principles and scientific basis underpinning the various methods and techniques will be explained, and applications to current cutting-edge science and technology will be discussed. Practical and project work will include demonstration of equipment and analysis of images and data. |
| <b>Objectives:</b>                       | The objectives of this subject are to provide students with <ol style="list-style-type: none"> <li>1. Increased knowledge and understanding of the techniques of involved with microscopy;</li> <li>2. A theoretical and practical background to permit informed choice of appropriate imaging technology and analysis; and</li> <li>3. Enhanced individual investigative skills, critical thought and the ability to evaluate and analyse microscopy images and data.</li> </ol>  |
| <b>Assessment:</b>                       | Five assignments 1,000 words each, due during semester and contributing 50% to the final mark, plus one two-hour written take home examination at the end of the subject contributing 50% to the final mark.   |
| <b>Prescribed Texts:</b>                 | None.  |
| <b>Recommended Texts:</b>                | None.  |
| <b>Breadth Options:</b>                  | This subject is not available as a breadth subject.  |
| <b>Fees Information:</b>                 | Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>  |
| <b>Generic Skills:</b>                   | At the completion of this subject, students should gain skills in:   |

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|                           | <ol style="list-style-type: none"><li>1. Problem solving, including engaging with unfamiliar problems and identifying relevant strategies;</li><li>2. Analytical skills, including the ability to work with images and data sets;</li><li>3. High level written report presentation skills; and</li><li>4. Working in a team, through interactions in group projects.</li></ol> |
| <b>Notes:</b>             | Students undertaking this subject will be expected to regularly access an internet-enabled computer, and will need to be competent computer users. The subject will involve the use of Photoshop, confocal microscope operating software, and other image analysis software.  |
| <b>Related Course(s):</b> | Bachelor of Science (Degree with Honours)<br>Master of Biotechnology<br>Master of Science (Genetics)  |