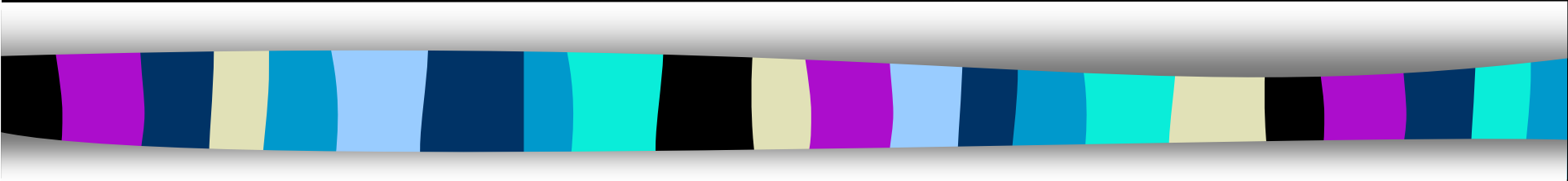


*First Year Curriculum Design: Biology at the
University of Melbourne*



Assoc Prof Dawn Gleeson
Director of First Year Studies in Biology
Department of Genetics
University of Melbourne

The Melbourne Model

- 6 undergraduate degrees
 - Bachelor of Arts
 - Bachelor of Biomedicine
 - Bachelor of Commerce
 - Bachelor of Environments
 - Bachelor of Music
 - Bachelor of Science
- In the transition stage several old degrees are still being offered for a finite period of time.



The broad objectives of the Melbourne Experience: should enable the graduates of the University to become:

- Leaders in communities.....
- Attuned to cultural diversity.....
- ** Active global citizens.....
- Academically excellent.....
- ** Knowledgeable across disciplines.....



Objectives for the study of Biology

After completing *The Biology of Cells and Organisms* it is expected that students will:

- ❑ have a knowledge of the basic processes of life;
- ❑ be familiar with the structure and function of both prokaryotic and eukaryotic cells;
- ❑ understand the structure and function of organisms, and how these features contribute to the overall functioning of organisms;
- ❑ understand the mechanisms of plant and animal reproduction and development;
- ❑ be able to complete basic manipulations with laboratory equipment, in particular the use of microscopes; and
- ❑ develop skills in recording observations, analysis and interpretation of data, and dissection techniques.

Generic Skills for Biology at first year

Students should be able to:

- ❑ plan effective work schedules to be prepared for tutorials, practical classes and examinations.
- ❑ be familiar with electronic forms of communication and be discerning in the use of the web for seeking information.
- ❑ integrate the computer software packages into the course to assist learning
- ❑ be able to complete basic manipulations with laboratory equipment, in particular use of microscopes.
- ❑ develop skills in recording observations, analysis and interpretation of data
- ❑ develop skills in dissection techniques.
- ❑ develop skills in preparing slides of fresh material.
- ❑ develop skills in completing biological drawings.
- ❑ access basic information from the library both electronically and in a traditional way.
- ❑ begin to develop skills in working collaboratively with other students in a practical class

First Year Biology Cohort

Percentage

Male	37%
Female	63
Commonwealth Funded Places	78
ENTER >90	44 (min 85)
Aboriginal/Torres Strait	0.3
Regional students	18
Interstate	6
Overseas	22

Expecting 1150 in 2009

N = 936 in 2008



First Year Biology

Survey conducted each semester

- Biology at year 12 53%
- No Biology at Year 12 47
- Work PT > 9hrs/week 39 (12% > 15hrs)
- Attend all 36 lectures 30 (10% < 25/36)
- Attend all tutorials 30 (7% < 3/10)
- Reasons for studying Biology - diverse

Biology at first year

Per week:

- 3 x 50 minute lectures
- 1 x 1 hour tutorial

Per fortnight:

- 1 x 3 hour practical class (6 per semester) (assessed) alternating with
- 6 Independent Learning Tasks (ILT) (assessed)

Per semester:

- an assignment
- a midsemester test
- a final examination



Curriculum design to

Assist student development
to support engagement with the
learning environment via
intentional integration and
sequencing of knowledge, skills
and attitudes



Curriculum design to

Assist student development

To support engagement with the learning environment via intentional integration and sequencing of knowledge, skills and attitudes



Holistic program approach to fostering student engagement

- Academic Advice Day
- Academic Orientation Day
- Welcome email
- Start with informal first lecture with Prof Peter Doherty
- *Meet and greet* tute in week
- Biology Learning Centre
 - Tutors on duty



Science 101

- 2 workshops weeks 2 and 3
 - Directors/coordinators of first year subjects in workshops
- Week 3 study groups formed based on subject areas with later year student as facilitator
- Timely information via facilitator



Curriculum design to

Assist student development
To support engagement with the
learning environment **via**
intentional integration and
sequencing of knowledge, skills
and attitudes



...via intentional integration and sequencing of knowledge, skills and attitudes

- Learning objectives and generic skills made clear
 - start of a lecture and a prac
- 4 components integrated
 - lectures
 - tutorials
 - practical
 - ILTS - have remedial and extension components



Teaching staff

- **Lecturers** - from Botany, Genetics & Zoology -
 - lecture in their field of research, 'cameos'
 - chosen for reputation of good teaching
 - most teach in later year subjects so spell out why a skill or piece of knowledge is important



Teachers of Large Classes guiding principles in Biology

- Should be the most talented teachers
 - lectures exciting
- Be prepared to handle lots of enquiries
- Make expectations very clear
- Know the background of the group
- When team teaching need to communicate so students see the course is cohesive



Teaching staff

- Lecturers - from Botany, Genetics & Zoology -
 - lecture in their field of research, 'cameos'
 - chosen for reputation of good teaching
 - most teach in later year subjects so spell out why a skill or piece of knowledge is important
- **Tutors**
 - Faculty based tutor training & demonstrator training
 - Biology unique with **continuing tutors**
 - Tutor community
- **Demonstrators**
 - PhDs or Honours students



...via intentional integration and sequencing of knowledge, skills and attitudes



- Regular staff meetings to discuss approach
- Director oversees the course and acts as conduit between all staff - provides information on the background of students
- Directors Science Faculty-wide of 1st year subjects meet regularly

Tutorials

- Smaller groups 25-30
- Same tutor for a semester
- Tutorial questions linked to lectures and practicals
- Interactive - small group discussion report back to larger group
- **Additional tutorials for those without Biology background**
- **Adjunct tutorials for those with ESL and low score in DELLA test**



Practicals

- Practical notes - clear objectives and outcomes
- Independent preparation expected
- Introduction from Head Demonstrator
- 3 hour class - may be 4 -5 activities
- Students plan their 3 hours
- Assisted by 7 staff per 110 students
- Knowledge **and** competencies tested



Practical Assessment

- Assessed on practical skills
 - DNA yield - work in pairs so requires collaboration
 - Dissection technique (*animal ethics*)
 - Chromosome preparation - including focusing the microscope
 - Drawing from a slide - matching observation with recording
 - Hand in prac report for marking - writing skills
 - Open prac book MC test





Independent Learning Tasks

Independent Learning Tasks (ILTs) will appear on here during semester. See the



Independent Learning Task 1: Compound Microscope Training

[Begin ILT 1: Compound Microscope Training](#)

While you may now use this ILT for revision, if you haven't already completed



ILT 2: Cell Biology

[Begin ILT 2: Cell Biology](#) (1.209 Kb)

GROUP A: Final test submission by **9am, Monday 31 March**.

GROUP B: Final test submission by **midnight, Friday 21 March**.



ILT 3: Harvesting Energy, Plant Growth and the Greenhouse Effect

GROUP A: Final test submission by **midnight, Friday 18 April**

GROUP B: Final test submission by **midnight, Friday 11 April**



Library Assignment

GROUP A: Submit in Prac 6

GROUP B: Submit in Prac 6



ILT 4: Mitosis and Meiosis

GROUP A: Final test submission by **9am, Monday 5 May**.

GROUP B: Final test submission by **midnight, Friday 2 May**.



ILT 5: The Basics of Blood

GROUPS A & B: Final submission for tests - **9am, Monday 5 May**



ILT 6: Development of the Toad

[Begin ILT 6: Development of the Toad](#) (2.11 Kb)

Due in Prac 6.



Prelabs



Prelab 1: Biological Drawing

[Begin Prelab 1: Biological Drawing](#)

If you have only recently enrolled you may have problems access



Prelab 2: Pipetting

[Begin the Pipetting prelab tutorial](#) (8.009 Kb)



Additional Activities



Working with Biological Terms



Catch Up Maths



Catch Up Chemistry



AIRport - Academic Interactive Resources portal

The Airport site is set up to have 3 Gateways. Gateway 3 is es
How to pull an essay question apart. How to look for key points

Independent Learning Tasks (ILTS) & prelabs

Other activities

Biology

- Staff Student Liaison Meetings
- Airport
- Library Assignment

Department

- Alumni - Careers night

Faculty

- Kick Start Your Career



Staff-student Liaison Committee Guidelines for student representatives in Biology

Thank you for volunteering to be a student representative for Biology. Below are some guidelines intended for the use of representatives of the Biology Staff Student Liaison Committee. They are based on the experience of past student representatives and provide a useful guide as to how best to approach this role, which incorporates obtaining feedback from the class, deciding how to deal with the issues raised and delivering a report at the Committee meeting. In your role as a student representatives we would like you to

1. Collect feedback from the class before the staff student liaison meetings meetings.
2. Attend up to two informal meetings of the Staff Student Liaison Committee during the semester.

How to obtain feedback from students.....etc



Categories

- ▶ Assignment
- ▶ I.T.
- ▶ Library
- ▶ Uncategorized

Recent Posts

- ▶ Assignment
- ▶ Computers
- ▶ Photocopying
- ▶ CAVAL Borrowing
- ▶ Searching the Catalogue
- ▶ Your Patron Record
- ▶ Email Accounts
- ▶ Student Card
- ▶ Placing a hold
- ▶ Reserve lists
- ▶ Inside the library
- ▶ Finding Science Direct
- ▶ Exam preparation
- ▶ Science Direct

Category Archives: Assignment

Assignment

March 15, 2008 - 10:56 am

The Library Research Assignment is designed to get you actually using some of (MS Word) (Right click and Save) / worksheet (PDF). In the assignment you will be using ScienceDirect, an online journals database.

By patrickc | Edit | Comments (0)

Here's a simple tutorial to help you find ScienceDirect and search journals for a specific term.
<http://www.lib.unimelb.edu.au>

Step 1

Use your web browser to open the Library homepage at <http://www.lib.unimelb.edu.au>

Step 2

Click on the link to "Databases"

Find Information

- Library catalogue books, print journals and more...
- SuperSearch journal and more...
- Journal titles, A-Z
- Databases
- Subject
- ReservesLibrary
- and Exam Papers
- alumni Repository
- more resources...

Step 3

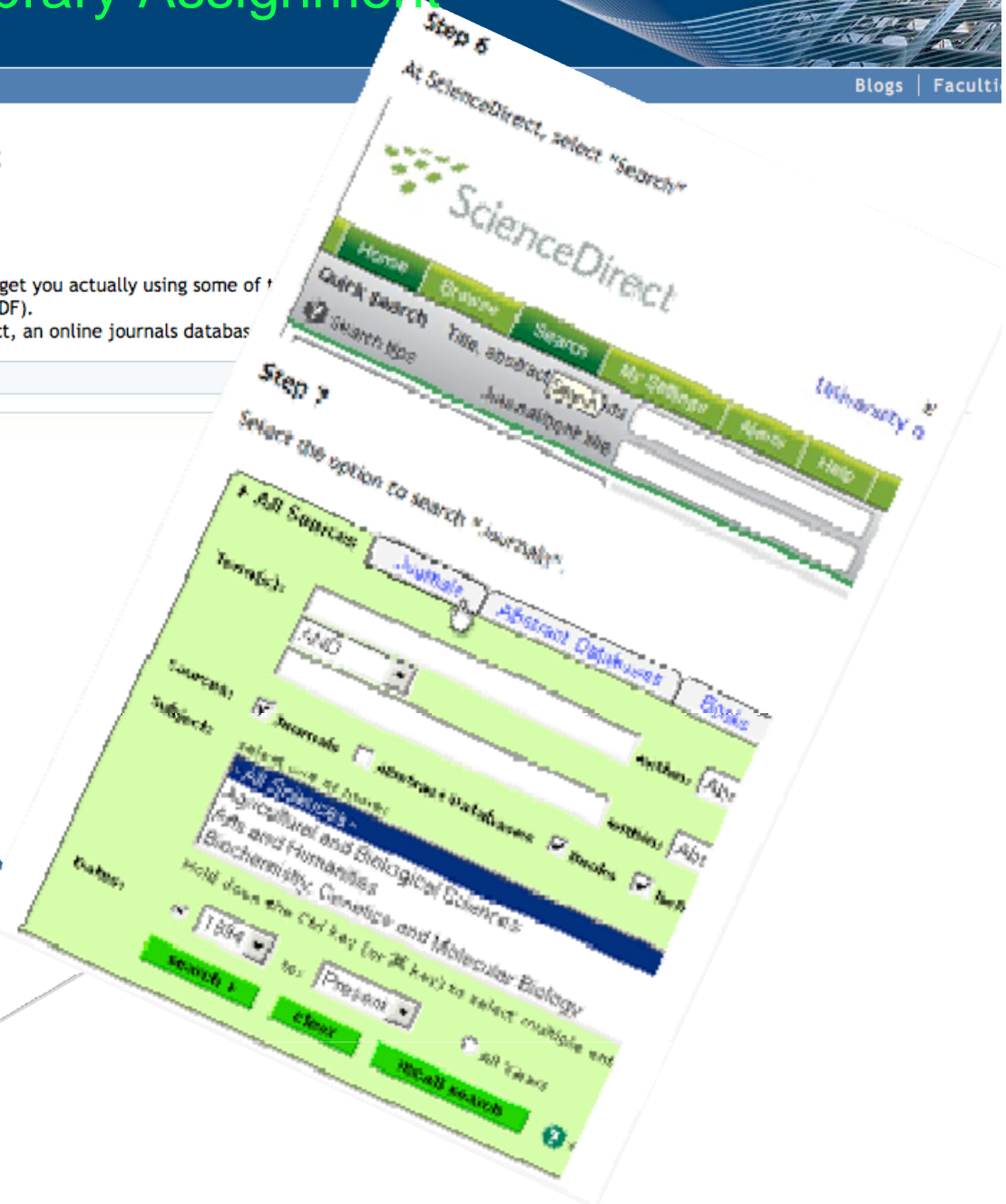
Search for "sciencedirect". Enter the search term as one word - no space. The search is not case sensitive.

Search for "sciencedirect"

Step 4

Connect to ScienceDirect via the search result.

SuperSearch : Database List



Step 5
At ScienceDirect, select "search"

Step 7
Select the option to search "journals"

The screenshot shows the ScienceDirect website interface. At the top, there are navigation buttons: Home, Browse, Search, My Settings, Alerts, Help. Below these are search options: Quick Search, Search type, Title, abstract, Journal/Book title. A search box contains the text "journals". To the right, there are buttons for Journals, Abstract Databases, and Books. Below the search box, there are sections for Journals, Subjects, and Dates. The Journals section has a dropdown menu with "All Journals" selected. The Subjects section has a dropdown menu with "Agricultural and Biological Sciences" selected. The Dates section has a dropdown menu with "1994" selected. There are also buttons for "search", "clear", and "small search".



About AIRport

- ▶ Contact us
- ▶ Copyright
- ▶ Project team
- ▶ Useful links



International Terminal

- ▶ Ready to leave?
- ▶ Ready for Melbourne?
- ▶ Ready for study?
- ▶ Student stories
- ▶ Ready to meet people?



CourseWorks

- ▶ Getting started
- ▶ Getting connected
- ▶ Scholarly life
- ▶ Getting organised
- ▶ Research and writing
- ▶ What next?



Gate 1 - Undergrad skills

- ▶ Transition
- ▶ Study skills
- ▶ Academic writing



Gate 2 - Short courses

- ▶ Essay writing
- ▶ Academic writing
- ▶ Academic writing (ESL)



Gate 3 - Discipline-specific

- ▶ Commerce
- ▶ Engineering
- ▶ Environments
- ▶ Science/Biomedicine



Academic Interactive Resources portal
AIRport

Gate 1 | Gate 2 | Gate 3 | International terminal | Useful links | Feedback | Login

Home > Gate 3 > Science/Biomedicine

DIRECTORY

- Gate 3
 - Science/Biomedicine
 - Scientific terms (Biology)
 - Exam essays (Biology)
 - Lab logbooks (Physics)
 - Exam essays (Earth Sciences)
 - Synthesising Learning (Chemistry)

Welcome to Science/Biomedicine

Welcome to Science and Biomedicine at AIRport. Here you will find resources to help you settle in to first year in the [Bachelor of Biomedicine](#) or [Bachelor of Science](#).

The activities in this section have been designed with specific Departments in mind, however, many of the lessons to be learned will apply to other disciplines. Analysing the question, breaking down scientific words and developing skills in documentation are all important aspects of your life as a Science or Biomedicine student.

- ➔ Scientific terms (Biology)
- ➔ Exam essays (Biology)
- ➔ Physics logbooks
- ➔ Exam essays (Earth Sciences)
- ➔ Synthesising learning (Chemistry)

- [Bachelor of Science](#)
- [Bachelor of Biomedicine](#)

4 / top of page

Airport: Scientific Terms

Sometimes both the *Greek* and *Latin* versions of a word are used in *Science* - for example *uni* (from *Latin* 'unus' meaning one) - e.g. *unicellular* (made of one cell) and *mono* (from *Greek* 'monos' meaning one or single) - e.g. *monosaccharide* (one sugar unit). Knowing the derivation of word meanings is another tool that helps us to remember the terms and also to understand the meaning of new terms when we first encounter them.

THE UNIVERSITY OF MELBOURNE Academic Interactive Resources portal **AIRport**

Gate 1 Gate 2 Gate 3 International terminal Useful links Feedback Login

AIRport home > Gate 3 > Science/Biomedicine > Scientific terms (Biology) > Millionaire biologist

DIRECTORY

- Gate 3
 - Science/Biomedicine
 - Scientific terms (Biology)
 - Millionaire biologist**
 - Billionaire biologist
 - Trillionaire biologist
 - Exam essays (Biology)
 - Lab logbooks (Physics)
 - Exam essays (Earth Sciences)
 - Synthesising learning (Chemistry)

Millionaire biologist

What does 'karyo' mean?

- around the perimeter
- nucleus
- membrane-bound
- coloured

Check your answer

Start again

Note that you start again with \$0 and a new set of questions.

You currently have \$0

- \$1,000,000
- \$500,000
- \$250,000
- \$125,000
- \$64,000
- \$32,000
- \$16,000
- \$8,000
- \$4,000
- \$2,000
- \$0**



Genetics Careers Night



Highlighting possible career pathways
after a Genetics major

Dr Anna Small,
Project Editor,
Pearson Education Australia.

"Taking off the white coat: a career in science publishing"

Dr Richard Burke
Research Fellow
Department of Genetics,
The University of Melbourne

"Fun, frustration, and fruit flies - the life of a research
scientist"

When: Thursday Sept 16th, 5.15pm
Where: Trikojus Theatre Biochemistry

Refreshments in the Genetics Department after the talks where you
can chat to the speakers and staff of the Department

KickStart Your Career



THE UNIVERSITY OF
MELBOURNE

FACULTY OF
SCIENCE

KickStart Your Career SCIENCE

Please register to attend via Careers Online
<http://careersonline.acs.unimelb.edu.au/cae/studentscae/>

Combine with *KickStart Skills 4 Work* sessions that interest you. Program available on *Careers Online*.

3 April
(1 – 2pm)

Lab Rat or Rat Pack

How do you approach questions about the type of work and workplace that fits with who you are, and what you like doing? Start to develop an action plan for your career.

Lyle Theatre, Redmond Barry Building

10 April
(1 – 2pm)

Finding Your Trajectory

How do you access information concerning possible career pathways, employment options and further study opportunities following on from your degree? Learn where graduates have gone before you and where Science could take you.

Lyle Theatre, Redmond Barry Building

17 April
(1 – 2pm)

Alien Encounters

Discover why now is the time to start networking with industry to help clarify career pathways, understand professional associations, and get exposure to, or experience in, career fields of interest to you. Hear from industry professionals.

Lyle Theatre, Redmond Barry Building

24 April
(1 – 3pm)

First Contact

Put yourself to the test in a supportive small group environment answering practice interview questions with an industry professional. You will also have an opportunity to ask questions about the selection process and network with the facilitators.

Room 619, Doug McDonnell Building

CAREERS &
EMPLOYMENT

www.services.unimelb.edu.au/careers/



Discussion

