General

The objective of this course is to give Biology majors and non-majors alike a comprehensive introduction to molecular biology, biochemistry, cell biology, genetics, microbiology, evolution and ecology.

Your instructional staff for the 2008-2009 full-year course are:

Dr. Logan Donaldson  
Dr. Julie Clark  
Dr. Tamara Kelly  
Dr. Roberto Quinlan  
Course Director  
Lab Director  
Instructor  
Instructor  
047 Farq  
108 Farq  
108 Farq  
211 Lumber  
x22823  
x22973  
x22972  
x40076  
logand@yorku.ca  
jclarkj@yorku.ca  
tljkelly@yorku.ca  
rquinlan@yorku.ca

For very important issues, please contact either Logan Donaldson. If you have missed a lab/need to schedule a makeup lab, please contact the TA Lab Coordinator as soon as possible. For other important issues with the laboratory portion of the course, please contact the Laboratory Director.

Switching Sections and Laboratories

Due to considerable enrollment in BIOL 1010, it’s almost impossible for us to place a student in a different section since all sections are typically full.

Textbook and General Syllabus

This is a full year course. Section A and Section C students will be taught the course in the following order: Biochemistry (Unit 1), Cell Biology (Unit 2), Genetics (Unit 3) and Ecology (Unit 4). Section B students will be taught the course in the following order: Genetics (Unit 3), Ecology (Unit 4), Biochemistry (Unit 1) and Cell Biology (Unit 2). From our past experience, it doesn’t matter what order the sections are completed since the units do not depend on each other.

We follow a customized textbook that is based upon Biology by Campbell and Reece. This text is currently in its 8th edition. The customize textbook is packaged with an additional paperback book, A Short Guide to Writing About Biology 6th ed by Jan Pechenik on scientific writing and interpretation of scientific data. It’s a book that will be useful throughout your entire undergraduate education and beyond. We consult portions of Pechenik in class and in the laboratory sections.

If you have the custom edition of Campbell for York University, the syllabus is easy: One volume corresponds to everything that will be covered in one semester. For those who have earlier editions of Campbell or the general 7th edition, the following chapters will likely be covered:

- Biochemistry and Cell Biology
  - Ch 01 - Introduction to Biology
  - Ch 02 - The chemical context of life
  - Ch 03 - Water and environment
  - Ch 04 - Molecular diversity of life
  - Ch 05 - Macromolecules

- Genetics, Evolution and Diversity
  - Ch 13 - Meiosis and sexual life cycles
  - Ch 14 - Mendel and genes
  - Ch 15 - Chromosomal basis of inheritance
  - Ch 16 - Molecular basis of inheritance
  - Ch 22 - Darwinian view of life
Ch 06 - A survey of the cell
Ch 07 - Membrane structure and function
Ch 08 - Metabolism
  09 - Cellular respiration
Ch 10 - Photosynthesis
Ch 11 - Cellular communication
Ch 12 - The cell cycle
Ch 17 - Genes to protein

Ch 23 - Evolution of populations
Ch 24 - Origin of species
Ch 25 - Phylogeny and systematics
Ch 26 - Biological Diversity
Ch 27 - Prokaryotes
Ch 28 - Eukaryotic diversity
Ch 50 - Ecology and the biosphere
Ch 51 - Behavioral ecology
Ch 52 - Population ecology
Ch 54 - Ecosystems
Ch 55 - Conservation ecology
Exams

Academic Integrity

In Biology 1010, we place a strong emphasis on academic integrity. Please take a moment to review the University's policy on plagiarism.

Exam Dates

There will be an exam scheduled after each of the four units. Exam 1 and Exam 3 are held mid-term outside of the regularly scheduled class time. It is your responsibility to ensure that you attend. We will not accept any excuses other than medically related issues. As it gets closer to the exam date, we will post room allocations. Exam 2 and Exam 4 are held during the regularly scheduled exam period set by the Registrar’s Office (dates will be announced in class and on the blog).

The grade for the academic section is derived from 30% of the best exam, 20% from the next two exams and 10% from the worst exam. The laboratory counts towards the remaining 20%. Both the academic and laboratory sections of the course must be passed in order to pass the course.

```
Exam 1 - 1.5 hours
   am 2 - 1.5 hours
Exam 3 - 1.5 hours
Exam 4 - 1.5 hours
   Makeup - 1.5 hours
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Exam 1: Sunday February 15 / 2:30 - 4:00 pm
Exam 2: Saturday February 28 / 8:30 - 10:00 am
Exam 3: Sunday April 26 / 1:00-2:30 pm
Exam 4: Thursday May 28 / 12:00 - 1:30 pm
Makeup: Tuesday June 2 / 9:00 - 10:30 am / Steadman “B”

Missed exams

A missed Exam 1 will be written immediately after Exam 2.
A missed Exam 2 will be written immediately after Exam 3.
A missed Exam 3 will be written during the makeup session on June 2.
A missed Exam 1/2/3/4 will be written during the makeup session on June 2.

Don’t miss exams! We can demonstrate statistically that you will not perform better with the extra time. If you have missed an exam, you must provide a medical excuse to the Biology Undergraduate Office in 108 Farq. Starting with Exam 3, there is a new deferred form:


If you still have an outstanding Exam 1, Exam 2 or Exam 3 that must be written, the form must be completed.

I will not be having any deferred exams during Summer 2008. The course is ending on June 2.
Medical Documentation

As of May 1, 2009, we have changed our standards for medical documentation. We reserve the right to reject documentation that seem is insufficient. One typical example is an Rx pad that simply says “Joe was sick” without any indication of the duration of the illness.

Please note that the no-cost form at York Lanes will no longer be accepted.

We reserve the right to give a zero on the missed exam if the procedure is not followed. Saying “I didn’t know”, is not a legitimate excuse. It is your responsibility to know.

Things not to do

Do not ask for mark changes to the next grade point or bell curving. All requests will be denied.

Tutorials

Tutorials will be given at the discretion of each instructor and will be announced in class or on the blog ahead of time. We will not make accommodations for students who have “double booked” that period with another course. Students are responsible for their own scheduling.

Lecture Material

The examinations cover all material covered and assigned in class. It is your responsibility to attend class as lecture notes will not be provided. If you miss a class, check the Biology 1010 Blog to see what the instructor covered that day. We encourage you to find a study-buddy or study group to review the material.

Practice Exams

Throughout the year, we will provide practice multiple choice exams and one- or two-page study guides to help you gauge your progress and reinforce the important concepts. We want you to succeed in the course!
Labs

ALL LAB ASSIGNMENTS ARE DUE WITHIN 2 WEEKS of EXECUTING THE LABORATORY.
Lab assignments are typically submitted directly to your TA (during your lab) or to your TAs drop box. Refer to your TA for specific submission instructions.

If you attend a makeup lab, your assignment is due within two weeks of your makeup lab and is submitted to the ‘makeup lab” drop box in the hall just down from Lumbers 109/110

TAs and Instructors use the email address associated with your record (typically a yorku address) to contact registered students. Please check this email regularly and/or forward it to an email address that you check frequently, to ensure you do not miss important information.

LABORATORY DIRECTOR: Dr. Julie Clark
Email: jclarkj@yorku.ca

LABORATORY COORDINATOR: Michelle Palmer
Email: biol1010@yorku.ca

Consult your lab manual for extended information regarding the items outlined below and for other important details regarding labs.

ADDITIONAL INFORMATION

LAB SCHEDULE
Lab Locations
Laboratory Manual
Required Equipment/Lab Safety
Laboratory Attendance
Minimum Laboratory Fulfillment
Late Submission Penalty
Laboratory Assignment/Report Regarding
Referencing in Laboratory Assignments/Reports

Supplemental Lab Notes
LAB 1 - Update Sept 15.
LAB 2 - Update Sept 15.
LAB 3.
LAB 4
LAB 5
LAB 6
LAB 7
LAB 8
LAB 9
LAB 10
Do’s and Don’ts to Writing a Lab Report

Schedule

NEW LAB SCHEDULE 2009

Lab Locations
The laboratories for BIOL 1010 are located on the main floor of the Lumbers Building in Rooms 109 and 110. Computer sessions are held in the Jupiter Laboratory in the Computer Science and Engineering Building.

Laboratory Manual
The laboratory manual is required to complete the course. It can be purchased for approximately $20 at the York Bookstore.

Read pages i to vi prior to attending your first lab. In addition, you should read all of Laboratory 1, “Scientific Investigation”, and complete pre-lab readings and the pre-lab exercise (indicated in the lab manual) before arriving at your first lab session.

REMEMBER, it is important (and expected) that you read and understand lab notes/directions and associated readings prior to attending each lab. Pre-lab exercises should also be completed before lab. Preparing for labs is an important aspect of your scientific career, as it tends to facilitate your understanding of the material and as such can help you achieve a higher grade. It is highly recommended, and to your benefit, to schedule time for lab preparation.

Required Equipment/Lab Safety (Goggles, Lab Coats, and Attire)
Goggles are required for all wet labs taking place in Lumbers 109 and 110. Goggles can be purchased at the York Bookstore or Canadian Tire (!)

Lab coats are not required but are highly recommended.

Ensure that you wear appropriate clothing to your labs. Sandals and open-toed shoes are NOT allowed in the laboratory. Long hair must be tied back.

See Lab Manual for additional safety rules.

ALL STUDENTS MUST READ AND SIGN THE LABORATORY SAFETY AGREEMENT TO ATTEND LABS!!!
Please click here to attain the form. Sign and detach the bottom portion and return to your TA or Farquharson 108 (Undergraduate Biology Office). Keep the top portion of the form

Laboratory Attendance
Laboratory Attendance is Mandatory and you must arrive on time (labs begin at either 10am, 2:30pm, or 6:30pm - check your schedule). You will NOT be excused from a lab except for valid documented reasons. A documented severe illness the day of a lab is usually a valid reason; a planned vacation in Florida is not considered valid.

If you miss a lab session for a valid reason you must contact the TA Lab Coordinator as soon as possible. Efforts will be made to try to schedule you for a make-up lab, but can not be guaranteed due to scheduling and equipment conflicts. You are responsible for all material covered in the labs, even if an exemption is provided for a particular exercise.

A student may permanently change their lab day only if space is available at another time and with permission of the Lab ' ttor. Prior to Sept. 18, 2008 Lab Director permission is not required, and all lab section changes must be completed using the online system.
Minimum Laboratory Fulfillment
You **MUST** pass the laboratory section in order to pass the course.

**Submission Penalty**
There is a 10% per day penalty for late lab assignments, applied immediately after the designated time it is due. For example, if your registered lab is Monday at 2:30pm, you must submit your assignment to the TA by 2:30pm. Reports handed in at 2:31pm are considered late and will be penalized 10%. Reports submitted the following day (e.g. Tuesday) after 2:30pm will be penalized another 10%, and so on.

For example, if an assignment is worth a maximum of 10 marks, 10% would be 1 mark. Therefore, if you received a grade of 8/10, but submitted within one day after the due date, 1 mark would be removed and your final grade would be 7/10. If you submitted 2 days late, 2 marks would be removed and your final grade would be 6/10.

**NOTE:** Workload, computer, and computer-related problems will **NOT** be accepted as reasons for handing in work late. Assignments submitted by email will **NOT** be accepted.

**Laboratory Assignment/Report Regrading**
A student who is not satisfied with the grading of a laboratory submission should:

1. Complete a reappraisal form. Clearly explain the reason or reasons why you feel your grade should be altered. Note: Calculation errors, and academic arguments related to your work are valid; a reasoning such as “It’s not fair... I worked really hard” is not valid.

2. Arrange to speak with your TA at a mutually convenient time, NOT during the lab exercise.

3. If resolution is not achieved, you should submit the work to the Laboratory Director or TA Lab Coordinator for reappraisal, including the completed reappraisal form (signed by the TA) attesting that the work has been discussed with the TA. This must be done within 14 days of the work being made available to the student. No exceptions will be made.

Please be aware that reappraisal may result in the original mark being raised, lowered or confirmed.

**Referencing in Laboratory Assignments/Reports**
We are using the reference format used in the journals published by the National Research Council of Canada (NRC) (e.g. Canadian Journal of Microbiology, Canadian Journal of Zoology, etc.). Please download the Referencing Guidelines, and staple a copy in your lab manual for future reference.
U1

This section is taught by Logan Donaldson

Problems to test your knowledge

When these files are changed, I'll post a message to the blog.

- Chemistry Problem Set
- Chemistry Problem Set Answers
- Biochemistry Problem Set
- Biochemistry Problem Set Answers

Multiple choice questions to try

Some of these are from old exams.

- Sample questions from 2005
- Donaldson-sample-midterm.pdf

Short Chapter Study Guides

Please note that these study guides are no substitute for the lectures. All of these files can be opened with Adobe Acrobat.

- Writing guide adapted from Pechenik
- Ch01-Study-Guide.pdf
- Ch02-Study-Guide.pdf
- Ch03-Study-Guide.pdf
- Ch04-Study-Guide.pdf
- Ch05-Study-Guide.pdf

Helpful One-Page Guides to Biomolecules

All of these files can be opened with Adobe Acrobat.

- Types of chemical bonds / part 1
- Types of chemical bonds / part 2
- Types of chemical bonds / part 2
- Types of chemical bonds / part 4
- Properties of water / part 1
- Properties of water / part 2
- The formation of biological polymers
- Sugars / part 1
- Chemical-bonds-1.pdf
- Chemical-bonds-2.pdf
- Chemical-bonds-3.pdf
- Chemical-bonds-4.pdf
- Properties-Of-Water-1.pdf
- Properties-Of-Water-2.pdf
- Biological-Polymers.pdf
- Sugars-1.pdf
Sugars / part 2
Lipids and fatty acids / part 1
Lipids and fatty acids / part 1
Protein secondary structures
Protein ligand binding

Viewing Biomolecules

The program pyMOL (pymol.sourceforge.net) is required to view the biomolecule files. They all have the suffix .pse to denote a pyMOL file. The pyMOL program is available for many platforms. Installation help can be found here.

<table>
<thead>
<tr>
<th>Platform</th>
<th>File Name</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mac OS X</td>
<td>macpymol-0_99rc6.tar.gz</td>
<td>11.4 MB</td>
</tr>
<tr>
<td>Windows</td>
<td>pymol-0_99rc6-win32.zip</td>
<td>10.1 MB</td>
</tr>
<tr>
<td>Linux</td>
<td>pymol-0_99rc1-bin-linux-x86-glibc23.tgz</td>
<td>15.2 MB</td>
</tr>
</tbody>
</table>

After you open one of the files below, look for "Scene->Recall". Select "F1", "F2", "F3" to toggle among some views that I have made.

- a section of water
- a section of ice
- the sugar glucose
- the lipid cholesterol
- the monounsaturated lipid oleic acid
- the polyunsaturated lipid linoleic acid
- double stranded DNA
- an adenine-thymine base pair
- a cytosine-guanine base pair
- a helical protein / Ste11 SAM domain
- a beta strand protein / PLC2Delta C2 domain
- quaternary structure / hemoglobin
- protein-DNA complex
- calmodulin protein loaded with calcium
- calmodulin protein with Ca2+ and a peptide
- RNA aptamer bound to Vitamin 312

water.pse
ice.pse
glucose.pse
cholesterol.pse
oleate.pse
linolenate.pse
dsDNA.pse
A-T.pse
G-C.pse
1ow5-Ste11-SAM-domain.pse
1qas-PLCdelta-C2-domain.pse
1hbb-hemoglobin.pse
1mnm-protein-dna.pse
1EXR-apo-calmodulin.pse
1VRK-calmodulin-complex.pse
1ET4-B12-RNA-aptamer.pse
U2
This unit is taught by Julie Clark (Sections A/B/C).

Chapters covered are 17, 6, 7, 8, 9, 10, 11, and if time 12. Please follow page numbers indicated on lecture slides. Material will be covered in the detail discussed in lecture.

Lecture B - Chapter 17 Lecture Slides Spring 2009

mRNA modification and Point Mutation Practice Questions


Lecture B - Mazarello 1999, Chapter 6 & Chapter 7 - Spring 2009.pdf

Lecture B - End of Chapter 7, Chapter 8 and metabolic rate - Spring 2009.pdf

Lecture B - Chapter 9 - Cellular Respiration - Spring 2009.pdf

Lecture B - Chapter 10 - Photosynthesis - Spring 2009.pdf

Lecture B - Chapter 11 - Cell Communication - Spring 2009.pdf

CLICK HERE to have FUN playing the CELL CYCLE GAME (applies to material covered in Chapter 12). (Note: it takes a few minutes to load so please be patient).
U3
This unit is taught by Tamara Kelly (Sections A/B/C)

Hi! Welcome to BIOL 1010. I'll be helping you to learn and understand more about Evolution and Genetics in Sections A & B. In section C, I'll cover Evolution, Genetics, and Diversity & Ecology, as well.

Schedule: Section C - Mar. 4th - May 20th; Section A - Apr. 8th - May 20th

Contact information:
Office: 108A Farquharson Life Sciences
Phone: ext. 22972
Email: tljkelly@yorku.ca
Office hours: by appointment

For correspondence with me:
by phone: please state the course (BIOL 1010) & your name
by email: use a yorku email address

- In the subject line put the course (BIOL 1010), your name, & your student number;
- Please use a proper salutation and use grammatically correct sentences (i.e., no text messaging language, use capitals at the beginning of sentences, etc.);
- Sign off with your name at the end of the email. Email correspondence with your professor is professional correspondence

Recording of lectures...

You are more than welcome to audio tape the lectures, however, as Dr. Donaldson pointed out (check the blog posts) you should NOT post this material online, etc. Also, do NOT video record the lectures - I am not that photogenic anyway. Material presented in the lectures may be covered by copyright, thus by posting this material online you will infringe on copyright.

TUTORIALS
Section C - Mondays: 5:30-6:20 pm CSE C

Section A - Mondays: 2:30 - 3:20 pm CLH 1

Tutorials will be held ONLY when announced. If a tutorial isn't announced, there is no tutorial.

Tutorials are unstructured and offered on an "as needed basis". By unstructured I mean that I won't be preparing material to bring to the tutorials. Instead, it will be an opportunity for you to clear up any questions you have about the material we've covered in class; no new material will be introduced.
"If you can't make tutorials for your section, do NOT attend those for the other sections. If you can't make the tutorials, I would suggest that you get together with some students who did, and talk about what was discussed at the tutorials."

**URE NOTES**

NB: You can print out the lecture notes in black & white; also, you can specify 2 pages to a page.

**SECTION C**

Mar. 9th Associated readings: Ch 1 & 12 (see below)

Mar. 16th Associated readings: Ch 13 (see below) & perhaps 15, depending on how far we get.

Mar. 23rd Associated readings: Ch 13 & 15; starting on Ch. 14. I haven't really assigned readings from the chapter on Mendel because I'm going to approach it from a slightly different perspective. However, if you would like to read some of that chapter, please use the following as a guideline.

Mar. 30th a, b, c, d. Associated readings: Ch 14 & possibly Ch 22/25 (see reading assignments below).

Apr. 6th. (We covered the remainder of the Mar. 30th lecture, plus the lecture here.) Associated readings: Ch. 22, 23

Apr. 13th Associated readings: Ch. 23. Although I'd like it if you looked over the information on fossils in Ch. 25 (please see below), you don't have to. However, it is useful for you to read Concept 25.6 (p529) to further understand evolution.

Apr. 20th We are ahead at this point, so tonight (Apr. 20th) will be review only (and likely won't go the full 3 hours). The review will be a question and answer format with material pertinent to the upcoming midterm. Please bring your questions to you. There will not be any slides prepared/posted for this review.

Apr. 27th. Associated readings: Ch. 24, 25 (see slides for more details)

May 4th. Associated readings: Ch. 24/25. See slides for more details.

May 11th. Associated readings: Ch. 52 (see 2nd slide for what to read) UPDATED NOTES FOR MAY 11th!!!!

May 20th. Associated readings: Ch. 53 (53.1-53.5) and Ch. 54 (54.1-54.4)

HERE are some questions for the 2nd half of this term. These are all from the text, so all answers are available to you. I've gone through & picked questions that I think are appropriate for your level of understanding and knowledge.

Chapters for midterm IV - Ch. 24, 25, 52, 53, 54

Midterm III for Section C does not include any of the ECOLOGY material covered on Monday Apr. 20th. The first half of this class will be review for the upcoming midterm. It will be a question and answer format, so please bring your questions.

**SECTION A**

Apr. 13th Associated readings: Ch. 1 & 12. See below.

15th

Apr. 17th. Associated readings: Ch. 13. See below.
Apr. 20th. Associated readings: Ch. 13.

22nd. Associated readings: Ch 13 & 15.

Apr. 24th. Associated readings: Ch. 15. Please try the questions on mitosis & meiosis posted Mitosis & Melosis Review Questions. Try the questions without looking at the answer key beforehand or while doing the questions. ANSWERS


May 1st Transmission of traits...

May 4th. Expression of traits...

Genetics & Evolution Review Questions

Genetics & Evolution ANSWERS (please try questions BEFORE looking at answers - otherwise, it's not really studying)

May 11th. Ch 22, 23, 25 (see below for details)

May 13th. Ch 22, 23, 25 (see below for details)

May 15th. Ch. 22, 23, 25 (see below for details)

May 20th.

ETICS & EVOLUTION READINGS (all page # refer to the 2nd Custom Ed or the 8th Ed) FOR BIODIVERSITY & ECOLOGY (INCLUDES HISTORY OF LIFE ON EARTH) PLEASE SEE SLIDES.

PLEASE FOLLOW THE READINGS. Material in the lectures and readings is considered fair game for midterms. Comprehension of material not mentioned in class OR the readings will NOT be tested.

Ch. 1: please don't take detailed notes on this chapter - it is an overview & I will cover what I think is important cn (Ch. 1 questions: 1-6; 10 & 11)

Ch. 12: p228-230 (just 12.1 & associated figures) (Don't go memorising the steps/ phases of mitosis. Just review what it is, where it can occur & what the result of it is.)

Ch. 13: p248-260. Please do NOT memorise Fig. 13.8. Ignore Fig. 13.10. We will talk about what happens in meiosis, but not in this detail.

Ch. 14: please see above - Mar. 23rd

Ch. 15: p297-300 (this is Section 15.4). Do not memorise the different disorders; rather concentrate on why these chromosomal alterations might cause issues. We will also get to p286-287.

Ch. 22: p452-466 (Questions in lecture notes & p467 1-6, 8 - answers in Appendix A)

A* mentioned - Chapter 25 is just to provide background. If crunched for time, then skip this!!

Ch. 25: p510: The Fossil Record; p512: The Origin of New Groups of Organisms; p514: Fig. 25.7; p515: Table 25.1; p519-525
(Section 25.4) This is useful for understanding the history of the Earth, which is helpful in understanding evolution. p529 Evolutionary Novelties (which doesn’t really fall under why Evolution is not goal-oriented, but I digress...), skip Evolutionary Trends.*** DON’T MEMORISE TABLE 25.1 & FIG 25.7 - these are to give you an idea of the expanse of geological time over which evolution of life has occurred.***

Ch. 26: p538-539 (Includes Fig. 26.4 & Fig. 26.5) - see slide 18 in lecture 6; 26.2 (Morphological & Molecular Homologies; & Sorting Homology from Analogy (pay attention to example using bats, birds, and cats - p541); DON’T read Evaluating Molecular Homologies.

Ch. 23: p468-471 (excluding ‘Mutation Rates’); Fig. 23.3 & 23.4; p472-475 (Concept 23.2); p475-479 (Concept 23.3); p481-482 (Key Role of...) - includes Fig.23.16; p484 (Why Natural Selection Cannot Fashion Perfect Organisms); p486, questions: 1-6

DO THE APPROPRIATE CONCEPT CHECK QUESTIONS ASSOCIATED WITH THESE PAGES.
U4

This unit is taught by Tamara Kelly (Section C).

Recording of lectures...
You are more than welcome to audio tape the lectures, however, you are not to post this material online, etc. Also, do NOT video record the lectures, or take digital images of the slide material. Material presented in the lectures are covered by copyright.
Resources

York University is a large institution, and there are many offices and services available to our students. We’ve included most of this information in the Appendices of your lab manual, but we’ll update this page throughout the year, as well.

York University Library
http://www.library.yorku.ca/ccm/Steeacie/index.htm

There are several libraries at York. The Steacie Science and Engineering Library is in the Steacie building, and not only provides extensive science literature, but helpful and knowledgeable librarians who can provide assistance in your research.

Biology Library Flyer.

Library Lecture from the week of Sept 15, 2008.

RefWorks Instructions - citation management program.

RACER Instructions - Worldwide library sharing program.

Journal Seeker - helpful for deciphering and determining biological journal abbreviations.

Yu Learn
http://www.yorku.ca/yulearn/

YuLearn is a gateway to York University’s extensive resources to support student learning.

Tutoring through SOS (Student Ombuds Service)
http://www.yorku.ca/sos/sos_tutor.html

This will link you to a website that makes it easy to request tutoring services or to volunteer as a tutor.

English as a Second Language Open Learning Centre
http://www.yorku.ca/esoloc/keele/default.asp

The ESL Open Learning Centre (ESL-OLC) offers support to English as a Second Language (ESL) students registered in credit courses at York University. This Centre is open to ALL York students, registered in degree programs, and is free of charge. Their services include (1) Regular workshop series on topics related to the language needs of ESL students (2) Small group English language learning (3) Independent language learning using print and multimedia materials (4) Individual tutoring on specific language needs (5) Weekly English movie nights with conversation after. Visit the Centre at Vanier College 037.

goSAFE
http://www.yorku.ca/goSAFE

goSAFE is a complimentary service provided to the York Community. At the Keele campus, goSAFE has two routes: North Route & South Route which will safely transport community members by vehicle from one specified hub to another on campus. goSAFE operates seven days a week, all year round, including University closures (with the exception at Glendon during the Christmas
holiday closure). Call the goSAFE office at 416-736-5454 or extension 55454 during hours of operation. Please give your name, location and destination.
Hours of Operation: 06:00 - 20:00 (Sept-Apr) and 20:00 - 02:00 (May-Aug)

Counselling and Development Centre
http://www.yorku.ca/cdc/
The CDC is the Bennett Student Centre and can be reached by telephone at (416) 736-5297 during regular operating hours. Regular operating hours are Monday through Friday from 9:00-5:00, September to April and 8:30 - 4:30, April to Labour Day each September. In the months of July and August the Centre closes Fridays at 3:30. From June through August, the Centre is closed between 11:30 a.m. and 1:00 p.m.

This program provides free workshops, counselling and on-line services to help students learn more effectively (and deal with the pressure and stress associated with studying and taking tests).

Learning Skills program
http://www.yorku.ca/cdc/lsp/

Disability services
http://www.yorku.ca/dshub
This site provides links to the many different services available to support students with disabilities (physical, learning, psychiatric, etc.).

Office for Persons with Disabilities
http://www.yorku.ca/opd

Ross Building
4700 Keele Street
Toronto, ON M3J 1P3
Phone: 416-736-5140

The Learning Disabilities Program (LDP) is run by the CDC, and provides educational support to university students with documented learning disabilities. http://www.yorku.ca/cdc/ldp/

The Psychiatric Dis/Abilities Program (PDP), also run through the CDC, provides educational support services to students with documented psychiatric illnesses.
http://www.yorku.ca/cdc/pdp

The York Lanes Health Centre
Stay healthy! Services available include general health care, physical examinations, missed class notes, prescriptions and special services (e.g. acne treatment, wart treatment, allergy testing and injections, immunizations and flu shots, etc.). You can book an appointment, or visit the clinic on a drop-in basis. (416) 736 5525. Dental services (within the York Lanes Health Centre): (416) 736 5038

Bethune College
http://www.yorku.ca/bethune/
Various resources, including information regarding councils and academic workshops.

Uggy Undergraduate Program
http://www.yorku.ca/ugbiol
Information about Biology programs, events, and advising questions/answers.

Science and Engineering
http://www.science.yorku.ca/home/index.html

Registrar's Office
http://www.registrar.yorku.ca
Important information, forms, policies, course timetables.