

**Faculty of Science and Engineering
Department of Biology**

SC/BIOL3120 Immunobiology 3.0

Fall 2008

Prerequisites:

SC/BIOL2020 4.0; SC/BIOL2021 4.0; SC/BIOL2040 4.0

Welcome to BIOL3120!

We shall be studying the biology and chemistry of immune responses. Topics will include development of the immune system, structure and function of antibodies, antigen receptor diversity, cellular interactions, and immunological responses.

Lectures:

Tuesdays and Thursdays 5:30-7:00 pm room R S205

Course Director:

Dr. Mani Larijani

Farquharson, rm 124B

mani.larijani@hotmail.com (till further notice of change)

Office hours: Tuesdays and Thursdays 4:30-5:15

Text:

T. J. Kindt, R. A. Goldsby, B. A. Osborne; Kuby Immunology, 6th edition (2007)

Course Web Site: WebCT

A York WebCT account (no charge) is required to access online course material.

Course Evaluation:

term test 1: 20%

term test 2: 20%

research paper: 30%

final exam (not cumulative): 30%

Please note that there will be NO MAKE-UP of the term tests. MINOR medical ailments are NOT acceptable excuses for missing the tests. Both tests are scheduled before the drop deadline. Therefore, if either test is missed, dropping the course is an option. For major medical reasons, please present a doctor's certification. The weight of the missed test will then be transferred onto the next test, assignment or final exam. EXTENUATING circumstances are dealt with on a case-by-case basis. If a student misses the final exam, deferred standing may not be automatically granted. A formal petition to the Registrar's Office is usually required. There is no guarantee that a petition will be granted. Therefore, a student who files a petition runs the risk of receiving a grade of zero for the exam.

Learning objectives:

Upon successful completion of SC/BIOL3120 students will be able to demonstrate:

- understanding of fundamental principles of immunology topics and experimental techniques
- analysis of primary literature
- the ability to conduct independent research
- scientific written communication

Course conduct:

Immunology is one of the most interesting and complex topics in human biology. The concepts are not all easy to grasp. You must work hard to keep up with the material. Notes will be posted on WebCT, but they are not a substitute for the text book. You must read the text book, ideally before attending the respective lecture, to best understand the material. If after reading the text, and attending class, you still have questions, consult with your classmates and/or make appointments by email (mani.larijani@hotmail.com) to see Dr. Larijani for help. Please keep email correspondence brief and professional (proper spelling, grammar, capitalization etc).

Academic integrity:

Students are expected to be familiar with and follow York University's policies regarding academic integrity. Please consult the website below for more details:

<http://www.yorku.ca/academicintegrity/students.htm>

Accommodation Statement:

Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Director as soon as possible.

Important Dates:

Sept 18:	Last day to ADD a course WITHOUT permission of instructor.
Oct 3:	Last day to ADD a course with permission of instructor.
Oct 14:	Research topic will be announced
Nov 7:	Last day to DROP a winter term course without receiving a grade
Dec 2:	Last day of this class; research papers DUE

Summer 2008 Tentative Class Schedule:

Primary papers presented in groups will supplement text material.

Date	Topic	Chapter(s)
Sept 4	Introduction	1, 2
Sept 9	Antigens and antibodies	4
Sept 11	Immunoglobulin genes	5
Sept 16	Immunoglobulin genes	5
Sept 18	Immunoglobulin genes	5
Sept 23	B cell Activation and Response	11
Sept 25	Germinal Center architecture and importance	11
Sept 30	NO CLASS	
Oct 2	TERM TEST #1	
Oct 7	B cell development	11
Oct 9	NO CLASS	
Oct 14	Workshop on research paper	
Oct 16	Major histocompatibility complex, Antigen presentation	8
Oct 21	Major histocompatibility complex, Antigen presentation	8
Oct 23	Antigen presentation and Immune response	8
Oct 28	TERM TEST #2	
Oct 30	T cell development	9,10
Nov 4	T cell activation	10
Nov 6	Innate Immunity	3
Nov 11	Innate Immunity	3
Nov 13	Complement	7
Nov 18	Cytokines	12
Nov 20	HIV and the Immune system	20
Nov 25		
Nov 27	Cell-mediated cytotoxic responses and Natural Killer cells- Research Paper Due	14
Dec 2		

Final Examination Period: Dec 5 – 27

BIOL3120 Research

Part of this course involves independent research on a topic that will be assigned to you. You will submit a paper of approximately 2 pages single-spaced (including references). An annotated bibliography of your research in “journal format” is required and must contain no less than 10 primary or review publications. The papers are due on the last day of class. There is a **penalty of 5% per day late** (including weekend days). Because you have the entire term to complete the paper, **medical excuses will generally not be accepted**. The topic and guidelines for writing the assignment will be discussed in class on Oct. 14. If you miss this class, Dr. Larijani will not repeat the information on an individual basis, so please ensure you get the appropriate information from a classmate.

Plagiarism

Plagiarism is a major problem in university. Many students do not even realize they are plagiarizing. Obvious plagiarism includes copying text word-for-word from another source. This practice constitutes serious academic dishonesty. However, there are other forms of plagiarism. For instance if you read an article, and paraphrase it paragraph by paragraph, you have still plagiarized (even if you cite the source). You are stealing the author’s structure. Academic writing is an intellectual exercise that requires high level thought and analysis. You are expected to conduct thorough research, assessing the quality of the sources as well as you can. When writing the report, the structure must be completely your own and you must cite all references. You are expected to have read the sources you cite (do not cite a paper just because another paper has cited it). **Writing an academic paper properly, without any plagiarizing, takes a lot of time.** Do not leave the writing to the last minute. **You will be submitting these papers through turnitin.com.** You will have access to the originality report. While you will only be able to submit the paper once (in this course), you may edit your paper after submission. Therefore, consider turnitin.com a tool for your use. **A very useful site pertaining to plagiarism is http://www.plagiarism.org/learning_center/printable_docs.html available as of May 5, 2008).** Please view this site and the guidelines within it. **EVERYONE IS EXPECTED TO BE AWARE OF WHAT CONSTITUTES PLAGIARISM.** **There will be a zero tolerance policy regarding plagiarism in this course.**

References

Conduct thorough research by using several references. The best sources are the primary references (original research papers that demonstrated findings). Text books and review papers are NOT primary sources. They are a good start to get you familiar with the topic, but you must go deeper. AT LEAST read the papers that they refer to. An analogy is taking a bus tour of Europe where you see 8-10 countries in 2 weeks. You would get only a very general impression of each place, but you would miss a lot and you are influenced by the biases of your tour guide. Use web sites sparingly. These internet sources may be useful for current statistics, (e.g. disease prevalence, treatments). Remember that the standards of internet posts are not always high. Reliable web sites should cite references you can check. In general, avoid one-stop-shopping. Sources such as Wikipedia are NOT acceptable for your research paper. The course text book is generally not appropriate for citation since the authors are not the original source of the information.

marking scheme (out of 25)

- annotated bibliography (due July 17): /5
- quality of scientific writing: /5
- content: /15

annotated bibliography

- alphabetical list of citations collected for use in paper
 - include a **brief** (~100 words MAX) **description and evaluation** of paper
- **sample entries** taken from reference list of review article: Yu, H., Kortylewski, M., Pardoll, D. Crosstalk between cancer and immune cells: role of STAT3 in the tumour microenvironment. *Nature Rev. Immunol.* **7**, 41-51 (2007).
 - reference information, then “This study provided the first evidence at the molecular level that oncogenesis, for which STAT3 is crucial, coordinates tumour immune evasion. STAT3 activity in tumour cells not only inhibits the expression of T_H1-type immune-stimulating molecules, it also promotes the expression of immunosuppressive factors, leading to the inhibition of DC maturation.”
 - reference information, then “Using a constitutively active mutant form of STAT3, this study formally establishes that STAT3 is an oncoprotein.”

reference style

- in-text citations: (author, date)
- alphabetical reference list: full reference information (e.g. as above review reference)