

**PHGY 313**  
**BLOOD, GASTROINTESTINAL & IMMUNE SYSTEM PHYSIOLOGY**  
**COURSE SCHEDULE**  
**Winter 2020**

**Lecturers:** Dr. Judith Mandl, (Coordinator), Bellini building, Room 335, 398-3149, [judith.mandl@mcgill.ca](mailto:judith.mandl@mcgill.ca)

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 Dr. Amel Hamdi, Lady Davis Institute, 514-340-8222 x2, 4666, [amel.hamdi@mail.mcgill.ca](mailto:amel.hamdi@mail.mcgill.ca)  
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 Dr. Maia Kokoeva, Research Institute (MUHC), Room E02.7218, 514-934-1934 x35360 [maia.kokoeva.mcgill.ca](mailto:maia.kokoeva.mcgill.ca)  
 Dr. Jörg Fritz, McGill Life Sciences Complex, Room 371, (514) 398-1707 [jorg.fritz@mcgill.ca](mailto:jorg.fritz@mcgill.ca)  
 Dr. Alexander Orthwein, Lady Davis Institute, 514-340-8222 x24252. [alexandre.orthwein@mcgill.ca](mailto:alexandre.orthwein@mcgill.ca)  
 Dr. Daniela Quail, Goodman Cancer Center, Life Sciences Complex, Room 417, (514) 398-2659, [daniela.quail@mcgill.ca](mailto:daniela.quail@mcgill.ca)  
 Dr. Melissa Vollrath, Room 1234, McIntyre Bldg, 514-398-2410 [melissa.vollrath@mcgill.ca](mailto:melissa.vollrath@mcgill.ca)

**Location:** **Mondays & Wednesdays -> Stewart Biology Bldg, Room N2/2**  
**Fridays -> Strathcona Anatomy & Dentistry Bldg. (3640 University), Room 2/36**

**Time:** **10:35am – 11:25am**

<i>Date</i>	<i>Day</i>	<i>Lecture Title</i>	<i>Lecture</i>	<i>Lecturer</i>
Jan. 6	M	INTRODUCTION		J.M
8	W	Blood - overview	1	V.B
10	F	Stem cells	2	V.B
13	M	Regulation of hematopoietic differentiation	3	V.B
15	W	Erythroid cells	4	V.B
17	F	Hemoglobin structure and function	5	A.H
20	M	Iron metabolism	6	A.H
22	W	Regulation of hemoglobin synthesis	7	A.H
24	F	Erythroid cell disorders	8	F.M
27	M	Granulopoiesis	9	J.M
29	W	Blood Tutorial		V.B, A.H
31	F	Overview of the digestive system	10	M.V
Feb. 3	M	<b>TEST #1 – Blood (No Class) – 7:00pm - 8:30pm, Palmer Howard Room 522 (McIntyre Bldg.) Please bring your I.D cards to the exam.</b>		
5	W	Stomach Physiology <b>Topics will be assigned to students randomly and posted via MyCourses. One assignment per student.</b>	11	M.V
7	F	Exocrine functions of the GI tract I	12	M.V
10	M	Exocrine functions of the GI tract II	13	M.V
12	W	Regulation of energy homeostasis: Hypothalamic control of food intake	14	M.K
14	F	Brainstem and reward circuits in energy balance control	15	M.K
17	M	Intestine Biology I	16	M.V
19	W	Intestine Biology II	17	M.V

<b>Date</b>		<b>Lecture Title</b>	<b>Lecture</b>	<b>Lecturer</b>
21	F	GI Tutorial		M.V
24	M	Organization and structure of the Immune System	18	J.M
26	W	<b>Test #2 – GI (No Class) – 7:00pm - 8:30pm, Palmer Howard Room 522 (McIntyre Bldg.) Please bring your I.D cards to the exam.</b>		
28	F	Innate Immunity 1: Pattern Recognition Receptors and how your immune system recognizes danger		D.Q
		<b>READING WEEK (March 2 to March 6)</b>		
Mar. 9	M	Innate Immunity 2: Complement and Antigen presenting cells (APCs)	10	D.Q
11	W	Adaptive Immunity 1: B cell development and generation of diversity	13	A.O
13	F	Adaptive Immunity 2: The B cell immune response: Antibody production	14	A.O
16	M	Adaptive Immunity 3: T cell development and Self/Non self-discrimination	15	J.M
18	W	Adaptive Immunity 4: The T cell immune response: activation and effector functions	16	J.M
20	F	When self-tolerance fails: Autoimmune disease		J.M
23	M	When the immune system over-reacts: Allergy and hypersensitivity		J.M
25	W	Immunity in Viral Infections		J.M
27	F	Immunity in Parasitic Infections		J.M
30	M	Manipulation of the immune system: transplantation & immunization		J.M
Apr. 1	W	Immunity in Cancer		D.Q
3	F	Immunology of the GI system I <b>Assignment is due today by 4:00pm in the General Office, Room 1021</b>		J.F
6	M	Immunology of the GI system II		J.F
8	W	Immunology of the GI system III		J.F
10	F	<b>GOOD FRIDAY – NO CLASS</b>		
13	M	<b>EASTER MONDAY – NO CLASS</b>		
*14	T	Immunology Tutorial		J.M

**\*Tuesday, April 14<sup>th</sup>, 2020 follows a “Friday” schedule**

**\*\* Students are responsible for checking MyCourses for course notes/slides and any updates\*\***

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## EVALUATION

### 1. Class Tests – (20% each)

There are 2 class tests. The first class test is on **Monday, February 3, 2020** from **7:00pm–8:30pm**, **Palmer Howard Theatre, Room 522 (McIntyre Bldg.)** and will cover the **Blood** section of the course (**Lectures 1-9**). The second class test is on **Wednesday, February 26, 2020** from **7:00pm–8:30pm**, **Palmer Howard Theatre, Room 522 (McIntyre Bldg.)** and will cover the **Immunology** section of the course (**Lectures 10-17**). Class tests are usually, but not always, multiple-choice type questions and may have a component that is short answer or essay. Please note that multiple versions of exams will be administered in order to reduce any temptation for copying a more "correct" answer. Once the tests have been graded, an **Exam Viewing** will be scheduled.

### Medical Notes

Students who miss a test or class quiz due to a medical or other acceptable reason, must provide a note to the Course Secretary (McIntyre Bldg., Room 1021) **within two weeks of the missed test/quiz**. The value of the final exam will then be increased proportionally. A mark of zero will be given to students with no note. There are no makeup tests and/or quizzes.

### 2. Assignment – (20%)

Students are to submit an individual written term paper assignment based on a case study related to GI, immune, or blood cell physiology. Topics will be assigned to students *randomly* and posted via MyCourses on **Wednesday, February 5, 2020**.

The assignments should be no more than **5 typewritten pages, 1.5 line-spaced (excluding cover page), Times New Roman font (12 point), with 2 cm page margins**. Students are permitted (but not required) to include one (1) additional page containing figures. References are to be included at the end of the document (there is no page limit for references). The assignment is due on **Friday, April 3, 2020 by 4:00 pm** in the **General Office, Room 1021**. Marks will be deducted for late submissions (**5% per day late, including weekends**). All assignments are of similar difficulty and grades will be normalized (up or down) so that they are fair and comparable for each section.

### 3. Final Exam – (40%)

The Final exam is usually but not always "multiple choice" type questions and may have a component that is short answer or essay. All three sections of the course will be covered, with more emphasis on the last section, so that all three sections are evaluated equally. Please note that multiple versions of exams will be administered in order to reduce any temptation for copying a more "correct" answer. **Supplemental/Deferred and Religious Conflict exams will differ from the final exam. They may consist of multiple choice, short answer or only essay type questions.**

## **MARKING SCHEME**

In summary, the 2 class tests count for 20% each; the written assignment counts for 20%; and the final exam is worth 40%, totaling 100% of the final grade.

### **Grading**

The Department of Physiology will **NOT** revise/upgrade marks except on sound academic grounds. Once computed, the marks in this course will **NOT** be altered/increased arbitrarily. Decimal points will be "rounded off" as follows: if the final aggregate mark is computed to be 79.5%, the mark will be reported as 80% (an A-); a final aggregate mark of 79.4% will be reported as 79% (B+). These marks are **FINAL and NON-NEGOTIABLE**.

## CONTACT INFORMATION

Professors may arrange special tutorials and/or office meetings with students who require more specific directions for the assignment and/or class tests.

## TUTORIAL SERVICE

Student Services provides additional tutorial service: Brown Building, Suite 4200, 514-398-6011.

## COURSE EVALUATIONS

Course evaluations will be available through Minerva at the end of term.

## SUPPLEMENTARY REFERENCES

### **Blood**

Recommended Reading:

Wintrobe's Clinical Hematology, Twelfth Edition (Greer JP et al., eds.) Lippincott, Williams & Wilkins, 2009. Pages: 79-125, 170-213, 468-489, 810-834.

### **GI**

*Suggested Textbook*

Smith-Morton. The Digestive System, Basic Science and Clinical Conditions. Elsevier Publishing. 2010.

*Supplementary Textbook*

Guyton, Arthur and Hall, John. E. Textbook of Medical Physiology. 12th e. Saunders

### **Immunology**

The notes in this section represent a mixture of original material, material excerpted from the recommended textbooks and material copied from various web pages. The material is for use in **Physiology 313 ONLY** and may not be copied, distributed, or posted electronically for use outside this course.

Murphy, Kenneth M., et al. Janeway's Immunobiology. 7th e. Garland Publishing Inc. 2008.

Kindt, Thomas J., et al. Kuby Immunology. 6<sup>th</sup> e. W.H. Freeman & Company. 2007.

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*Every student has the right to write term papers, examinations, and theses in English or French, except in courses where knowledge of the language is one of the objectives of the course.*

*In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.*

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