

# PATHOLOGY 4400B - ENVIRONMENTAL PATHOLOGY

## SYLLABUS 2019-2020

<b>COURSE COORDINATOR:</b>	Dr. Chandan Chakraborty Department of Pathology and Laboratory Medicine Room 4038, Dental Sciences Building, Western 519-661-2111 x88704    E-mail: <a href="mailto:cchakrab@uwo.ca">cchakrab@uwo.ca</a>
<b>COURSE ADMINISTRATOR:</b>	Ms. Cheryl Campbell Department of Pathology and Laboratory Medicine Room 4044, Dental Sciences Building, Western 519-661-2111 x86389    E-mail: <a href="mailto:ccampbel@uwo.ca">ccampbel@uwo.ca</a>

### 1. COURSE DESCRIPTION:

Mondays, 11:30am-1:30pm, Winter Term

**Prerequisite(s):** [Pathology 3500](#) with a mark of at least 70% or the former Pathology 3240A and 3245B with a minimum mark of 70% in each.

**Corequisite(s):** none

**Extra Information:** 2 lecture hours, 0.5 course.

The pathology of occupational and environmental diseases, including information on recent developments and basic mechanisms involved in these diseases. Recognition of occupational and environmental diseases, early diagnosis, mechanisms of cell injury and regeneration, and the effects of a wide variety of toxic drugs, chemicals and UV and ionizing radiation are included.

For a list of the topics to be covered see the Lecture Schedule.

#### **Senate regulation regarding the student's responsibility regarding requisites:**

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

### 2. LEARNING OUTCOMES:

#### **COURSE GOAL**

To provide the student with the understanding that there are several environmental factors (physical & chemical) involved in the etiology of several diseases, including cancer. In addition to genetic factors, the interaction of environmental factors should be considered for causes of many diseases.

Environmental pathology is an evolving field which describes the methodologies utilized in studying the causative factors of diseases from a variety of environmental view points.

#### **COURSE OBJECTIVES**

Upon the completion of the course, the student should:

1. Understand the importance of environmental factors (e.g. physical – radiation; chemical –drugs, toxins, poisons, pesticides, flame retardants; infectious – virus & bacteria) in causing disease.
2. Broadly describe environmental diseases in major organ systems and underlying pathological process (e.g. in central nervous system, respiratory system, endocrine system).
3. Understand the importance of the liver and kidney as the major organs involved in the detoxification and metabolism of many environmental components.
4. Understand the terminology used to describe environmental and occupational disease.

### 3. COURSE MATERIALS

#### Lecture Notes:

These will be posted to OWL prior to each lecture. Powerpoints for each lecture may or may not be posted - that will be at the discretion of each lecturer whether they would like their ppt posted or not.

#### Text:

There is no required text for this course

### 4. EVALUATION:

Component	Date	% of Final Mark
Midterm Test	Please see lecture schedule Test information will also be posted to OWL	40%
Final Examination	April exam period Exam information will also be posted to OWL	40%
Assignment (Essay)	Please see lecture schedule for assignment due date	20%

#### TEST/EXAMINATION:

- For a breakdown of which topics are examined on each test/exam please refer to the course schedule.
- The test/exam consist of a combination of Multiple Choice Questions (MCQ) and Short Answer Questions (SAQ). Each MCQ is worth 1 mark. Each SAQ is **usually** worth 5 marks.

#### Test/Exam viewing:

Students may request to view their exams within three weeks from the date that the grade was released. In order to do this you must make an appointment with the Course Administrator to go over the exam.

#### WRITTEN ASSIGNMENT:

About 15 different topics on Environmental Pathology (which may be either due to the direct environmental exposure or due to occupational or industrial exposures) will be chosen. Each student will be assigned to write an essay on only one of those topics.

You are expected to carefully analyse the essay title or the question and then perform Pubmed search, select some review articles as well as original articles. Give thorough reading of the articles and take notes. Develop ideas while reading those. After you finish reading you should try to write the first draft of your essay only on the basis of your ideas that you developed from your reading (without looking at your notes). You may like to start your essay with a clinical case or a group of cases related to your subject. After finishing the first draft, you should go back to your notes so that you can add the important missing points and polish up, and during this time you should cite the references. Cite both review articles and the original references from where the ideas were originated. Please note, the body of your essay should contain mostly research-based contents. Either at the end or in the body of your essay, wherever is appropriate try to include you own critique also. Read your essay carefully, rewrite and submit. **Please do not copy anything from web sites or other published papers.**

You have been given ample time to complete this assignment and you are encouraged to submit it as soon as you have it ready, that way you can begin to factor in the assignment grade into your total course grade. The assignment should be **no more than 1500 words, plus images, double spaced with 1" margins (11pt font), and must be submitted in both printed form and by Uploading to the Assignments tab on OWL for grading. Hard copies should be delivered to Cheryl Campbell, Dental Sciences Bldg, Room 4044 by 4:00pm the day of the deadline.**

#### 15% Assessment Rule: (1000- and 2000-level courses)

*At least three days prior to the deadline for withdrawal from a course without academic penalty, students will receive assessment of work accounting for at least 15% of their final grade. For more details, refer to the link below:*

[http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/evaluation\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/evaluation_undergrad.pdf)

#### POLICY ON ROUNDING AND BUMPING OF GRADES

Across the Basic Medical Sciences Undergraduate Education programs and within the Department of Pathology and Laboratory Medicine we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All

students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks **WILL NOT be bumped** to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved and the mark assigned; **requests for mark “bumping” will be denied.**

## 5. ADDITIONAL INFORMATION/STATEMENTS

The website for the Office of the Registrar is <http://www.registrar.uwo.ca>

### Statement on Official Email Addresses

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html> the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

### Statement on Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

### Statement on Use of Cell Phone and Electronic Devices

The Schulich School of Medicine & Dentistry is committed to ensuring that testing and evaluation are undertaken fairly across all our departments and programs. For all tests and exams, it is the policy of the School and the Department of Pathology and Laboratory Medicine that any electronic devices, i.e., cell phones, tablets, cameras, or iPod are strictly prohibited. These devices **MUST** be left either at home or with the student's bag/jacket at the front of the room and **MUST NOT** be at the test/exam desk or in the individual's pocket. Any student found with one of these prohibited devices will receive a grade of zero on the test or exam. Non-programmable calculators are only allowed when indicated by the instructor. The Department of Pathology and Laboratory Medicine is not responsible for stolen/lost or broken devices.

## 6. ABSENCE FROM COURSE COMMITMENTS

### Academic Consideration for Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a **self-reporting of absence** or via the Academic Counselling Office of the Faculty of Science located in NCB 280, and can be contacted at [scibmsac@uwo.ca](mailto:scibmsac@uwo.ca).

**NEW!!** For further information, please consult the university's policy on academic consideration for student absences as there are updates to the academic consideration procedures. [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf)

The policy on Accommodation for Religious Holidays can be found here: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

### A. Absence for medical and non-medical reasons:

Students must familiarize themselves with the Policy on Accommodation for Medical Illness for Undergraduate Students, located at:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf)

A Western Student Medical Certificate (SMC) is required when a student is seeking academic accommodation. This documentation should be obtained at the time of the initial consultation with the physician/nurse practitioner or walk-in clinic.

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

### **Medical/Compassionate Relief Program Policy**

*It is current policy that students who are unable to write a test or examination or other form of course evaluation are required to obtain a medical certificate that is taken to the Academic Counseling Office, NCB 280 (for Science and Basic Medical Science students) or to your appropriate Home Faculty Counseling Office. In the case of an unexpected absence on compassionate grounds, documentation is also requested. **Such documentation must be submitted by the student directly to the Academic Counseling office and not to the instructor.** An academic counselor in that office will review and either approve or deny the accommodation request. It will be the Academic Counseling office that will determine if accommodation is warranted. This policy applies to all forms of assessment, including evaluations that are less than 10%.*

### **Statement from the Academic Counselling Office, Faculty of Science (for Science and BMSc students)**

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Academic Counselling Office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved by the Academic Counselling Office and the instructor has been informed.

### **PATHOLOGY AND LABORATORY MEDICINE POLICY FOR MISSED EXAMS:**

- If a student misses an exam for valid reasons (see Absence Policy), they will be granted permission to write the makeup exam.
- If the corresponding make-up exam is also missed, he/she will be expected to write the exam the next time the course is offered (i.e. the following year).

## **B. Special Examinations**

[http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/definitions.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf)

A Special Examination is any examination other than the regular final examination, and it may be offered only with the permission of the Dean/Academic Counselling Office of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. You may also be eligible to write the Special Examination if you are in a "Multiple Exam Situation". See:

[http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)

A Special Examination must be written at the University or an Affiliated University College no later than 30 days after the end of the examination period involved. To accommodate unusual circumstances, a date later than this may be arranged at the time permission is first given by the Dean/Academic Counselling Office of the Faculty. The Dean/Academic Counselling Office will consult with the instructor and Department Chair and, if a later date is arranged, will communicate this to the Office of the Registrar.

If a student fails to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean/Academic Counselling Office in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered.

When a grade of Special (SPC) or Incomplete (INC) appears on a student's record, the notations will be removed and replaced by a substantive grade as soon as the grade is available.

## **7. SUPPORT SERVICES:**

Academic Counselling (Science and Basic Medical Sciences): <http://www.uwo.ca/sci/counselling>

**Accessibility:** Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation. The policy on Accommodation for Students with Disabilities can be found here:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic%20Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf)

**Student Development Centre (SDC):** Learning-skills counsellors at SDC are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling. <http://www.sdc.uwo.ca>

**Mental Health:** Students who are in emotional/mental distress should refer to Mental Health@Western for a complete list of options about how to obtain help. [http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)

**Student Health Services:** <https://www.uwo.ca/health/shs/index.html>

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>

# Pathology 4400b

## “Environmental Pathology”

### 2019-2020 Lecture Schedule

**Mondays, 11:30am-1:30pm, Medical Sciences Building, Room 384**

**Course Coordinator: Dr. Chandan Chakraborty**

**25-Nov-19**

DATE	TIME	TOPIC	LECTURER
Monday, January 6, 2020	11:30am-12:50pm	Contaminants, Chemicals of Commerce and Ecosystem Health	Dr. Bend
	12:50pm-1:30pm	Intro. To Course; An Overview on the Mechanism of cellular Injury by Environmental Factors	Dr. Chakraborty
Monday, January 13, 2020	11:30am-1:30pm	Mechanism of Cellular Injury by Environmental Factors – <i>Cont'd</i>	Dr. Chakraborty
		Genes, Environment & Diseases Diagnostic Aspects of Poisoning by Chemicals	
Monday, January 20, 2020	11:30am-12:30pm	Diagnostic Aspects of Poisoning by Chemicals - <i>Cont'd</i>	Dr. Chakraborty
	12:30am-1:30pm	Pathology of Environmental Liver Diseases	Dr. Chakrabarti
Monday, January 27, 2020	11:30am-1:30pm	Biochemical Pathology of Liver and Kidney Toxicities	Dr. Chakraborty
Monday, February 3, 2020	11:30am-1:30pm	Nutritional Pathology	Dr. Gibson
Monday, February 10, 2020	11:30am-1:30pm	Biological Effects of Environmental Exposure to Ionizing Radiation	Dr. Prato
		Radiation Exposure and Environmental Radionuclide Contamination Caused By Atmospheric Atomic Bomb Testing and Power Reactor Failures at Chernobyl and Fukushima	
<b>Thursday, February 13, 2020</b>	<b>7:00-9:00pm</b>	<b>MIDTERM EXAM - NSC7</b> <b>(Exam will cover lectures from beginning of course up to and including Feb 10)</b>	
<b>FEBRUARY 15-23, 2020</b>		<b>READING WEEK &amp; FAMILY DAY (Feb 17th)</b>	
Monday, February 24, 2020	11:30am-1:30pm	Environmental Pathology of the Endocrine Systems	Dr. Chakraborty
<b>Monday, February 24, 2020</b>	<b>by 4:00pm</b>	<b>ASSIGNMENT DUE TODAY</b> <b>Hardcopy to Cheryl Campbell, Pathology, DSB4044 (ccampbel@uwo.ca)</b> <b>and electronically on OWL</b>	
Monday, March 2, 2020	11:30am-1:30pm	Environmental Pathology of Allergy	Dr. Cameron
Monday, March 9, 2020	11:30am-1:30pm	Environmental Effects on the Respiratory System	Dr. Garcia
Monday, March 16, 2020	11:30am-1:30pm	Zoonotic Bacterial Diseases	Dr. Olea Popelka
Monday, March 23, 2020	11:30am-1:30pm	The Battle Against Emerging & Re-Emerging Viral Diseases	Dr. C.Y. Kang
Monday, March 30, 2020	11:30am-1:30pm	Environmental Effects on the Nervous System	Dr. Q. Zhang
<b>April 6-26, 2020</b>		<b>FINAL EXAM PERIOD</b> <b>(Exam will cover lectures from Feb 24 to end of course)</b>	