**Course Syllabus**

**Course Description**

Students will learn to interpret the results of selected clinical laboratory tests in the context of medical cases. Course content will focus on the normal and abnormal biochemistry and physiology of blood and of organ systems including the liver, gastrointestinal tract, and kidneys. Students will apply this course content to solve case studies and diagnose disease by interpreting patient history information, physical findings, and results of clinical laboratory tests. In addition to interactive lectures, discussions and case-based learning in groups, there will be a hands-on blood cell morphology laboratory session in which students prepare and stain blood smears and learn to distinguish different blood cells under the microscope. Students will also take guided tours of clinical or clinical research lab facilities and of the David Hardwick Pathology Learning Centre which houses tissue specimens (both actual and virtual) representing a wide range of pathological conditions.

**Course Objectives**

By the end of this course, students will be able to:

1. Explain the main functions of human blood (cells and plasma/serum), hepatic, respiratory, gastrointestinal, and renal systems in order to identify and describe the processes underlying a number of common or prototypical pathologies.
2. Use and interpret the correct medical language to describe abnormal levels of analytes and common signs and symptoms associated with selected disorders/diseases.
3. Analyze case studies that include patient information, clinical findings and laboratory test results to identify the most likely diagnoses.
4. Demonstrate respectful, professional conduct and communication with your peers and instructors and work cooperatively with peers in class, during site visits, and in laboratory sessions.
5. Start to think like a professional who utilizes knowledge, sound judgment, and skills related to laboratory sciences (e.g. a medical doctor, clinical chemist, medical laboratory technologist, biomedical researcher or biomedical research technician).

**Course Materials:**

Handouts will be supplied and/or made available through CONNECT.

**Location:**

Classroom: G221 UBC Hospital, 2211 Wesbrook Mall  
Microscopy Laboratory: G131 and G221 UBC Hospital, 2211 Wesbrook Mall

**Course Instructors:**

Dr. Amanda Bradley,

Director, Med Lab Sci Program

Senior Instructor,

Dept. of Pathology and Lab Medicine

Faculty of Medicine

[abradley@pathology.ubc.ca](mailto:abradley@pathology.ubc.ca)

Deb Chen,

PhD Candidate and Summer Program Instructor

Dept. of Pathology and Lab Medicine

Centre for Blood Research

[d.chen@alumni.ubc.ca](file:///C:\Users\dchen\Dropbox\teaching\Vancouver%20Summer%20Program%20-%20Path\d.chen@alumni.ubc.ca)

**Laboratory Instructors**:

Jenny Tai, Honorary Lecturer, Faculty of Medicine ([JTai@pathology.ubc.ca](file:///C:\Users\abradley\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\IT2T4CPU\JTai@pathology.ubc.ca)),

Eric Jeong, Honorary Lecturer, Faculty of Medicine ([e.jeong@alumni.ubc.ca](file:///C:\Users\abradley\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\IT2T4CPU\e.jeong@alumni.ubc.ca)),

Jennifer Xenakis, Honorary Lecturer, Faculty of Medicine ([xenakis@mail.ubc.ca](mailto:xenakis@mail.ubc.ca))

**Site Visit Personnel:**

Helen Dyck, Manager, David Hardwick Pathology Learning Centre, Faculty of Medicine ([hdyck@pathology.ubc.ca](file:///C:\Users\abradley\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\IT2T4CPU\hdyck@pathology.ubc.ca))

Janet MacManus, Manager, NetCAD Clinic, Canadian Blood Services ([janet.mcmanus@blood.ca](mailto:janet.mcmanus@blood.ca))

**Assessment:**

Detailed explanations regarding each component of your grade – and expectations – will be provided during the first day of class.

Final class grades will be obtained using the following.

Component Percentage

Quizzes: Individual 20%

Team 10%

Case Presentation (Team) 25%

Respectful Conduct and Participation 10%

* site visits (4%), lab session (2%) & class (4%)

attendance, punctuality & participation

Final Exam (Individual) 35%

Total 100%

**Course Schedule (3 hr sessions) 9 AM to noon**

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| --- | --- | --- | --- |
| Session | Date | Topic | Instructor |
| 1 | July 20 – Wednesday | Course introduction;  **What’s in blood?** Basic hematology & biochemical tests  Lab Orientation & Safety (20 min) | Amanda Bradley & Deb Chen |
| 2 | July 21 – Thursday | **What’s in blood?** Cont..  Class divided in half  (1) Lab: Microscopy of blood cells  (2) NetCad\* lab tour | Lab: Jenny Tai, Jennifer Xenakis, Eric Jeong  Tour: Deb Chen & NetCad staff |
| 3 | July 22 – Friday | **Homeostasis**: acid-base balance  Presentation skills ( 1 hr) | Deb Chen |
| 4 | July 25 - Monday | Quiz;  **Homeostasis**: electrolytes & blood gases | Amanda Bradley |
| 5 | July 26 – Tuesday | Quiz;  **Hepatic system**: in health and disease | Amanda Bradley |
| 6 | July 27 – Wednesday | Quiz;  **Hepatic system**: lab tests & case studies | Amanda Bradley |
| 7 | July 28 – Thursday | **Gastrointestinal system**: in health and disease | Deb Chen |
| 8 | July 29 - Friday | Quiz;  **Gastrointestinal system**: lab tests and case studies | Deb Chen |
| 9 | August 2 – Tuesday | **Renal System**: in health and disease | Deb Chen |
| 10 | August 3 – Wednesday | Quiz;  **Renal System**: lab tests and case studies | Deb Chen |
| 11 | August 4 – Thursday | Class divided in half   1. Site Visit: Pathology Education Centre 2. Prepare case presentations | Deb Chen, Helen Dyke, Amanda Bradley |
| 12 | August 5 – Friday | Class divided in half   1. Site Visit: Pathology Education Centre 2. Prepare case presentations | Deb Chen, Helen Dyke,  Amanda Bradley |
| 13 | August 8 – Monday | Student Case Presentations | Amanda Bradley and Deb Chen |
| 14 | August 9 - Tuesday | Spare / study time |  |
| 15 | August 10 - Wednesday | Final Exam (2 hrs).  Class end discussion | Amanda Bradley and Deb Chen |

\*NetCad = Network Centre for Applied Development, a laboratory in the Canadian Blood Services