

Course Syllabus – PHOL 479

Clinical Reasoning 1

Fall 2020

Monday & Wednesday 1:00 – 2:30 pm

Wednesday 4:00 – 5:00 pm

Physiology Zoom Room: 677-256-909

Zoom Password: taco

Course Director

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**Please contact the Clinical Reasoning TA team through our dedicated course email:
dpb-crteachingassistants@case.edu*

GENERAL COURSE INFORMATION:

Description

Physicians, like other professionals, use deductive reasoning with multiple hypotheses to solve problems. The objectives of this course are to educate students: 1) to solve clinical problems using medical physiology principles, and 2) to develop an overall view of clinical reasoning and improve critical thinking skills.

The topics covered in Clinical Reasoning 1 are: Cardiovascular, Pulmonary, and Renal diseases. The primary method of instruction is a combination of lectures and Team-Based Learning (TBL) with case studies.

The course is complemented by Clinical Reasoning 2 (PHOL 492), which is taught in the spring and summer semesters, and covers neurological disorders, gastrointestinal diseases, and oncologic (cancer) diseases. The two Clinical Reasoning courses can be taken independent of each other. Both require the Course Director's approval.

Course Outcomes

We anticipate that you will learn to:

- Recognize physiologic mechanisms underlying abnormal physical findings, laboratory tests and imaging.
- Use signs, symptoms, physical findings, laboratory tests, and imaging to address patient's condition and generate patient problem lists.
- Develop and refine diagnostic hypotheses, i.e., differential diagnosis.
- Understand the physiological basis of appropriate treatment plans.

Prerequisites

None – Consent of Course Director Required

Attendance

Effective TBL (Team Based Learning) **requires participation for the designated TBL lectures:**

- “Live” and/or Sections 100 students are **required** to attend via Zoom and actively participate in all 10 TBL sessions.
 - If a student is unable to attend a live TBL session they will need to contact the course director for prior approval to gain access to the online discussion board. Access to online discussion boards will be granted on a case-by-case basis. (See Discussion Participation below for further details)
- Section 800 Students and/or Students **unable** to attend live sessions are **required** to participate in online discussion forums through Canvas.
- Students in both sections (100 & 800) should see “Participation Grade” section below for exact requirements of attendance.

Academic Policies

Students are expected to observe the University Academic Integrity Policy as described in the Case Western Reserve University Student Handbook and the Department of Physiology and Biophysics Handbook.

Course Management System

CWRU Canvas (canvas.case.edu) will be used as a course management system to communicate the syllabus, learning objectives, reading assignments, video links, discussion forum, and exams.

ASSESSMENT AND GRADING:

Assessment and grading of student performance in the course will be based on:

- 1. Block Exams**
- 2. H&P**
- 3. Participation Grade**
- 4. Bonus Quizzes**

1. Block Exams (84% of final grade)

- 3 Exams (each exam = 28% of total grade)
- Questions are in USMLE format
- **Exams will be 40 questions and you will be given 75 minutes on Canvas through HonorLock.**

Exam Policies (Updated to accommodate COVID-19 precautions)

- **All students:** will take their exam on Canvas through HonorLock, an online proctoring service.
 - A practice, ungraded quiz will be released prior to Exam 1 to ensure student compliance and computer performance. Additionally, the first bonus quiz will be administered with HonorLock enabled to prepare students to take their exams with HonorLock
 - For appropriate HonorLock function, students are required to use Chrome, have a webcam on and uncovered, no headphones, and no notes visible to the student.
- **Make-up Exams:** A valid, signed medical note is required to justify whether a student is excused from taking the exam at the indicated time, and reschedule the exam(s) for the make-up day. Documentation must be submitted to Dr. Romani, Director of the course. For the academic Fall semester 2020, the make-up day for any missed exam is Dec 14, 2020. Final grades are Dec 18, 2020 by 11 am.
- **Reviewing Exams:** There will be a Most Missed Questions Review after the exam. All students will have the opportunity to review their exams one-on-one with the TAs via appointment within a provided deadline.

2. H&Ps (16% of final grade)

- Students are required to submit 2 (two) graded patient notes (H&Ps)
- Each H&P is worth 12 points, which account for 8% of the final grade.
- We will have 1 (one) non-graded H&P administered during block 1 as practice.
 - *We highly recommend the students turn in this practice H&P to get feedback. This H&P will be scored but it will not count towards the student's final grade.*
 - *We understand many students may have scribe experience and we ask that you please follow our rubric and format*
- Grading rubrics are used by the teaching assistants for the H&P to keep grading consistent and fair.

- To receive full credit for the H&P assignment you must use the template provided *without deleting any sections*. If you are not provided information for a section, please indicate this instead of deleting the section.
- **H&Ps are due at 11:59 pm EST of the due date**
- **Late Grading Policy:**

Hours Late	Maximum Points Possible
1 min – 24 Hours	9.5
24 – 48 Hours	7
48 – 72 Hours	4.5
After 72 Hours	0

- *Attendance will be taken at the H&P review. Should a student attend the H&P review prior to submitting their H&P, they will receive a 0 for the assignment.*

Patient Notes (History & Physical, H&P, SOAP Notes)

- An essential skill to be learned is how to write a H&P, which standardizes medical evaluations, promotes communication between a patient's healthcare team and encourages clinical reasoning.
- SOAP stands for Subjective, Objective, Assessment and Plan. The **Subjective** section contains a description of the patient's symptoms and history of present illness. The **Objective** section contains signs (as opposed to symptoms), data from physical exam, laboratory results, X-rays and current medications.
- We will use a modified H&P format that promotes reasoning skills for differential diagnosis and integrates medical knowledge and critical thinking. Students will be taught how to write and evaluate patient notes in didactic sessions before the cases begin.

H&P Rubric Point Distribution

- 2 Points for the History section:
 - 1 Point History (PMHx, PSHx, FHx, etc)
 - 1 Point History Previous Illness (HPI)
- 3 Points Physical Exam
 - 1 Point Signs
 - 1 Point Lab & Functional Tests
 - 1 Point Imaging & Invasive Procedures (e.g. Biopsy)
- 7 Points Assessment & Plan
 - 2 Points Correct Diagnosis
 - 3 Points Evidence
 - 2 Points Treatment

3. Discussion Participation Grade (– 10% of grade)

Students enrolled on-site (100) or Attending Live Sessions:

Students able to attend live TBLs are required to attend the 10 TBL discussion classes for small group discussion. At least 8 of the 10 discussion classes must be attended in person. The 2 classes not attended in person must be supplemented with online discussion participation on canvas.

- If a student is unable to attend a live TBL session they will need to contact the course director for prior approval to gain access to the online discussion board. Access to online discussion boards will be granted on a case-by-case basis.
- The deadline for requesting online access is **2 business days** (does not include Sat/Sun) prior to the scheduled TBL session.

Students enrolled online (800) or NOT Attending Live Sessions:

Students unable to attend live TBLs are required to participate in all 10 TBL discussion classes by posting 3 comments (1 comment can pose a question) in the discussion page on Canvas. Each comment must be a minimum of 5 complete sentences. (See “TBL Discussion Board Guidelines” document for further information)

- *On-line and on-site Students using the Discussion page must post their comments by:*
 - 4:59 pm EST on Wednesday for the Monday TBL Classes
 - 4:59 pm EST on Friday for the Wednesday TBL Classes

** Failure to attend or partake in online discussions for all 10 TBL classes will result in a loss of up to 10% of the final grade.*

Example: If a student had a final grade of 93% but did not attend all 10 TBL session, their grade would be dropped to 83%.

4. Bonus Quizzes (+ 0 – 5% of total grade)

- Bonus Quizzes are not required
- A 5-question open book quiz through canvas will be released for every 2 lectures. Each quiz is to be completed in 10 minutes.
- The first bonus quiz will be administered with Honorlock enabled to prepare students to take their exams with Honorlock. The remaining bonus quizzes will not utilize Honorlock.
- There will be 8 quizzes total. Students have a 48-hour window to complete the quiz
- Students will be given 1 attempt only per quiz
- Students must complete 6 of the 8 opportunities to be eligible for the extra % credit bonus.
 - If a student takes more than 6 quizzes, we drop the lowest 1-2 quiz scores.
 - If a student takes 5 quizzes, a 0 (zero) will be entered for the 6th quiz and averaged.
 - If a student takes less than 5 quizzes, no extra % credit bonus will be entered in the final grading.
- The average of the quizzes will be the percent bonus that will be added to your final grade:
 - *e.g. you have an average of 3.5/5 on the 6 quizzes. You will receive a 3.5% bonus on your course final grade. This bonus will not be reflected on your canvas grade. Canvas grade 83% + 3.5 % bonus = 86.5% → A*

Semester numerical scores will be converted into letter grades according to the following method.

Range of Numerical Values	Corresponding Letter Grade
100 – 85	A
84 – 70	B
69 – 50	C
49 – 0	D

Testing for Students with Accommodation

Students with test accommodations should make arrangements with the **University Testing Center Manager, Rachel Inman**, at exams@case.edu or call 216.368.5230 at least five days in advance. It is the responsibility of the students to be sure that they accommodation are current and active.

Rationale and Format for Clinical Cases

The cases discussed in this class are similar to those used in typical problem-based curricula in US medical schools, in which students learn about medicine by solving open-ended clinical problems based on real patients. (TBL, also referred to as case-based, inquiry-based cases, or IQ.) One advantage of TBL is that students learn to integrate critical thinking skills and medical knowledge. The TBL format was developed at McMaster University Medical School in the 1960s and has since been widely adopted. The goals of TBL in this class are to help students integrate knowledge of medical physiology, develop effective problem-solving skills, become self-directed learners, and develop effective collaboration and professional skills.

- *TBL = Team-based learning (discussion-based classes on patient cases)*
- *PBL = Problem-based learning (end of lecture questions)*

Readings

- The required textbook is:
 - ***Step-Up to Medicine, 5th Edition by Steven Agabegi and Elizabeth Agabegi.***
 - Please purchase the textbook to obtain online access to additional features and practice test questions.
- Additional required readings will be posted in Canvas as necessary by the instructor. Please check the online syllabus regularly.
- We recommend using UpToDate for additional research, particularly for the H&Ps.
- Although not required, students should consider reading *Every Patient Tells a Story: Medical Mysteries and the Art of Diagnosis*, by Lisa Sanders MD, Broadway Books, available on Amazon.

SCHEDULE
August 24th – December 16th, 2020

COURSE INTRODUCTION

DATE	TOPIC / ASSIGNMENT	READING
Mon, Aug 24	Course Introduction – Refining Diagnostic Hypotheses / Using & Interpreting Medical Tests & Imaging	
Wed, Aug 26	Learning Medicine by PBL Cases Soap Notes – How to Write & Use Clinical Reasoning (H&P) • Pre-Recorded* Live “Open Forum” with TAs • 4 – 5 pm	<i>*No live class at 1 pm</i>

BLOCK 1 – CARDIOVASCULAR DISEASES

Mon, Aug 31	Approach to Patients with Cardiovascular Disease <u>Bonus Quiz 1</u> Opens Mon, Aug 31 at 5 pm Closes Wed, Sept 2 at 5 pm <i>*Must be reviewed before 5 pm on Mon, Sept 7</i>	
Wed, Sept 2	Cardiac Valvulopathies	StepUp pg. 39 – 45 (Stop after MVP) StepUp PDF pg. 95 – 107 (Stop after MVP)
Mon, Sept 7	Ischemic Heart Disease <u>Bonus Quiz 2</u> Opens Mon, Sept 7 at 5 pm Closes Wed, Sept 9 at 5 pm <i>*Must be reviewed before 5 pm on Mon, Sept 14</i>	StepUp pg. 1 – 15 StepUp PDF pg. 15 – 42
Wed, Sept 9	Cardiac Arrhythmias	StepUp pg. 21 – 33 (Exclude WPW) Step Up PDF pg. 54 – 78 (Exclude WPW)
Mon, Sept 14	Heart Failure <u>Bonus Quiz 3</u> Opens Mon, Sept 14 at 5 pm Closes Wed, Sept 16 at 5 pm <i>*Must be reviewed before 5 pm on Mon, Sept 21</i>	StepUp pg. 15 – 21 & 33 – 34 (Stop before Restrictive Cardiomyopathy) StepUp PDF pg. 43 – 55 & 80 – 81
Tues, Sept 15	H&P 1 Released	
Wed, Sept 16	Case 1: Mrs. Johnson – <i>TBL Class Attendance or Discussion Board Required</i>	

Fri, Sept 18	H&P 1 due at 11:59 pm EST	
Mon, Sept 21	Case 2: Mr. Turner – <i>TBL Class Attendance or Discussion Board Required</i>	
Wed, Sept 23	Case 3: Mrs. Jones – <i>TBL Class Attendance or Discussion Board Required</i>	
Mon, Sept 28	Case 4: Mrs. Thompson – <i>TBL Class Attendance or Discussion Board Required</i> H&P 1 – Most Missed Points Review	
Wed, Sept 30	Exam 1 Review Session	
Mon, Oct 5	EXAM 1 Access: Sat, Oct 3 at 8 am – Mon, Oct 5 at 5 pm EST	

BLOCK 2 – PULMONARY DISEASES

Wed, Oct 7	Approach to Patients with Pulmonary Disease & Interpretation of Chest X-Rays and Other Pulmonary Tests	
Mon, Oct 12	Restrictive Pulmonary Pathologies <u>Bonus Quiz 4</u> Opens Mon, Oct 12 at 5 pm Closes Wed, Oct 14 at 5 pm <i>*Must be reviewed before 5 pm on Mon, Oct 19</i>	StepUp pg. 82 – 94 & 102 – 104 (Pulm. HTN only) StepUp PDF pg. 191 – 217 & 235 – 237
Wed, Oct 14	Obstructive Pulmonary Pathologies & Respiratory Failure <u>Bonus Quiz 5</u> Opens Wed, Oct 14 at 5 pm Closes Fri, Oct 16 at 5 pm <i>*Must be reviewed before 5 pm on Wed, Oct 21</i>	StepUp pg. 69 – 76 & 94 – 97 (Stop before ARDS) StepUp PDF pg. 162 – 180 & 218 – 219
Thurs, Oct 15	H&P 2 Released	
Sun, Oct 18	H&P due at 11:59 pm EST	
Mon, Oct 19	Case 5: Mrs. Wilson – <i>TBL Class Attendance or Discussion Board Required</i>	
Wed, Oct 21	Case 6: Mrs. Jackson – <i>TBL Class Attendance or Discussion Board Required</i>	
Mon, Oct 26	Case 7: Mrs. Atkinson – <i>TBL Class Attendance or Discussion Board Required</i> H&P 2 – Most Missed Points Review	
Wed, Oct 28	Exam 2 Review Session	
Mon, Nov 2	EXAM 2 Access: Sat, Oct 31 at 8 am – Mon, Nov 2 at 5 pm EST	

BLOCK 3 – RENAL DISEASES

Wed, Nov 4	Approach to Patients with Kidney Disease	StepUp pg. 278 – 282
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		StepUp PDF pg. 627 – 636
Mon, Nov 9	Renal Hypertension <u>Bonus Quiz 6</u> Opens Mon, Nov 9 at 5 pm Closes Wed, Nov 11 at 5 pm <i>*Must be reviewed before 5 pm on Wed, Nov 18</i>	StepUp pg. 287 – 289 (Stop after ARPKD) & 290 (Renal Artery Stenosis only) StepUp PDF pg. 650 – 652 & 655 – 656
Wed, Nov 11	Acute Kidney Disease <u>Bonus Quiz 7</u> Opens Wed, Nov 11 at 5 pm Closes Fri, Nov 13 at 5 pm <i>*Must be reviewed before 5 pm on Wed, Nov 20</i>	StepUp pg. 266 – 273, 282 – 287, 292 – 296 Pyelonephritis Article Step Up PDF pg. 605 – 617, 636 – 647, 662 – 670
Mon, Nov 16	Chronic Kidney Disease & End-Stage Renal Disease <u>Bonus Quiz 8</u> Opens Wed, Nov 16 at 5 pm Closes Fri, Nov 18 at 5 pm <i>*Must be reviewed before 5 pm on Wed, Nov 25</i>	StepUp pg. 273 – 278 Diabetic Nephropathy Article StepUp PDF pg. 618 – 626
Tue, Nov 17	H&P 3 Released	
Wed, Nov 18	Case 8: Mr. Bean – <i>TBL Class Attendance or Discussion Board Required</i>	
Fri, Nov 20	H&P 3 due at 11:59 pm EST	
Mon, Nov 23	No Class – Thanksgiving Break	
Wed, Nov 25	No Class – Thanksgiving Break	
Mon, Nov 30	Case 9: Mr. Bloom – <i>TBL Class Attendance or Discussion Board Required</i>	
Wed, Dec 2	Case 10: Mr. Turner (5 years Later) – <i>TBL Class Attendance or Discussion Board Required</i> H&P 3 – Most Missed Points Review	
Mon, Dec 7	Exam 3 Review Session	
Wed, Dec 9	EXAM 3 Access: Wed, Dec 9 at 8 am – Fri, Dec 11 at 5 pm EST	
Mon, Dec 14	Make-Up Date for any missed exams	
Fri, Dec 18	<i>Final Grades Due by 11 am EST</i>	