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680-01 Advanced Clinical Pathophysiology

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Xavier University
College of Professional Sciences
School of Nursing
Fall Semester, 2018

Course Number & Title:	NURS 680-01 – Advanced Clinical Pathophysiology
Number of Credits:	3 Semester credits
Number of Theory Hours:	3x 15 weeks =45 theory hours
Pre-requisites:	Graduate standing or approval of faculty
Co requisites:	

Course Description:

Emphasis is on Advanced Pathophysiology clinical problem-solving as it relates to adverse effects and illnesses in persons having acute, chronic and long-term health care problems. Knowledge of pathophysiology is used to predict illness progression and response to therapy, which is used to guide and teach patients and families regarding holistic care.

Course Objectives:

1. Analyze pathophysiology of various disorders and rationale for selecting diagnostic tests and treatments.
2. Examine the pathophysiology, in cellular detail, of the more complicated problems in critical care and body systems.
3. Integrate the interplay of risk factors, etiology, pathogenesis, sign and symptoms, and possible sequelae of complex and multi-organ disease processes.
4. Relate pathophysiology to pharmacology and advanced holistic assessment strategies in the care of critically ill and chronically ill clients.
5. Synthesize the concepts of the pathophysiologic processes with the nursing process in client care situations.

Time & Location: Tuesdays, 4:15– 6:45 PM; Cohen 110

Faculty: Debbie (Debra) Van Kuiken, PhD, RN, AHN-BC
Cohen 120
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E-mail: vankuikend@xavier.edu
Office Hours: Wednesdays, 3 – 4 pm and by Appointment

Dr. VanKuiken has been teaching at Xavier University, School of Nursing since 2010. She has a Biology degree and has been a nurse for 30+ years. Dr. VanKuiken has worked in medical-surgical, CCU, ICU (cardiac and trauma), hospice and school nursing. Her graduate work included graduate studies in Adv. Physiology, Adv. Pathophysiology, and Immunology.

Collin Dadosky (assisting) has a BSN from the University of Cincinnati, MSN from Xavier University, and is currently a third-year PhD student at Saint Louis University. Prior to teaching at Xavier, he worked as a nurse on a telemetry/stepdown unit and in hospital-based research center managing research trials in cardiovascular, pulmonary, and endocrine disorders. He primarily teaches pathophysiology, pharmacology, and complex nursing in both the undergraduate and graduate programs. He is a member of the Omicron Omicron chapter of Sigma Theta Tau.

Required Texts:

McCance, K. L., & Huether, S. E. (eds.) (2014). *Pathophysiology: The biologic basis for disease in adults and children*. (7th ed.) Maryland Heights, MO: Mosby Elsevier. ISBN: 9780323088541

Additional Resources: Canvas links to databases and posted articles and videos; Library and databases for individual searches.

Uptodate: an evidence-based clinical decision support resource with up to date pathophysiology and treatment guidance. Found by going to <https://www.xavier.edu/library/> and typing in “uptodate”. You should see this, select “connect to resource online” to get into Uptodate.

1. **UpToDate.**

Waltham, MA : **UpToDate**, Inc. Language: English, Database: Xavier XPLORE Library Catalog

Subjects: Clinical medicine; Medicine; Nursing; Health; Medical care

Periodical

[Connect to resource online](#) [View/Request in Xavier's XPLORE Catalog](#)

Location	Call No.	Status
Xavier Electronic Database	Electronic Database	View Catalog Record

Scapple program for making concept maps can be downloaded at <https://www.literatureandlatte.com/scapple/download> . It is a free 30-day trial. Only days used are counted, so this should be plenty for your 3 maps.

Teaching/Learning Strategies: Textbook, Class preps, discussion, videos, and articles; lectures; case studies; creating Concept maps.

Evaluation Strategies:

Tests (5- done in modules online)	50 %
Concept maps	
Inflammation function Concept map	10 %
2 Disease process concept maps (10% each)	20 %
Class preps (average; 3 lowest grades dropped)	<u>20 %</u>
Total	100 %

Grading Scale:

100-94% = A
93-90% = A-
89-87% = B+
86-83% = B

82-80% = B-
79-76% = C+
75-70% = C
Below 70% = F

Attendance Policy

Attendance at all class meetings is expected. Learning is an active process and participation is part of that process. Reading materials, class preparation, and class activities and discussions are meant to be complementary, not repeat each other. Students should bring completed class preps and materials to class. If a student is unable to attend a class the responsibility of missed class content is the sole responsibility of the student. Assignments and tests may include content covered in class or in assigned readings. For further information regarding attendance see the Graduate Student Handbook, "School of Nursing Attendance Policy."

Missed / late Assignment Policy

Late submission of assignments will result in automatic 10% reduction in the grade. Assignments will not be accepted beyond one week post due date.

Academic Support

The Office of Academic Support offers tutoring, Supplemental Instruction (SI), and study groups. For information about these services, contact Stephanie Daniels at 745-3214 or danielss3@xavier.edu. The OAS is located on the fifth floor of the Conaton Learning Commons, Suite 514.

Students with Disabilities

Any student who feels he/she may need an accommodation based on the impact of a documented disability should notify the course instructor and contact Cassandra Jones in the Office of Disability Services at 745-3280 or e-mail jonesc20@xavier.edu to coordinate reasonable accommodations.

XU Academic Honesty Policy:

The pursuit of truth demands high standards of personal honesty. Academic and professional life requires a trust based upon integrity of the written and spoken word. Accordingly, violations of certain standards of ethical behavior will not be tolerated at Xavier University. These include theft, cheating, plagiarism, unauthorized assistance in assignments and tests, unauthorized copying of computer software, the falsification of results and material submitted in reports or admission and registration documents, and the falsification of any academic record including letters of recommendation. **All work submitted for academic evaluation must be the student's own.** Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited, as is the use of any work untruthfully submitted as one's own. Penalties for violations of this policy may include one or more of the following: a zero for that assignment or test, an "F" in the course, and expulsion from the University. The dean of the college in which the student is enrolled is to be informed in writing of all such incidents, though the teacher has full authority to assign the grade for the assignment, test, or course. If disputes of interpretation arise, the student, faculty member, and chair should attempt to resolve the

difficulty. If this is unsatisfactory, the dean will rule in the matter. As a final appeal, the academic vice president will call a committee of tenured faculty for the purpose of making a final determination.

In addition to The Academic Honesty Policy of Xavier University, the American Nurses' Association's Code of Ethics includes provisions which hold nurses accountable for demonstrating integrity, knowledge development and competency to promote personal and professional growth. Students are expected to work toward meeting these standards throughout their coursework.

Professionalism:

Refer to Student Handbook. Class members are expected to participate in an atmosphere of collegiality in the class setting. Cell phones, laptops/pads are to be put away and silenced during class, unless needed for a specific classroom activity. Should you be on-call or have personal issues that you need to receive a call or text, *let the instructor know before class.*

Video Conferencing:

This is a video conferenced class that enables students from off campus locations to join in the class in real time. The Xavier IT department is committed to continuing to keep video conferencing running smoothly. Should distance students experience problems or concerns during class, the students are to contact **745-4847**. It is a line directly to the student workers and Bill and should get us help fast when needed.

Classroom etiquette in a teleconference class has implications both on campus and off. Considerable effort has gone into microphone placement in the classroom. The microphone system is aimed to accommodate class discussion and therefore will pick up student noises in the classroom. Noises such as side-bar conversations, opening or manipulating food packaging, typing on computers, are distracting at best and at worst make the following the conversation/lecture impossible. Make every effort to avoid these and other distractions. Optimally, microphones will stay open throughout the class. Classroom doors may have to be shut at times to block hall noises as well.

There may be sound delays from the different sites so have patience with each other and allow a time for off campus sites to respond. The aim is a respectful classroom where all have an opportunity to speak and to be heard. It is also important to remember that even on mute, the classroom can see you—refrain from talking, texting, etc. All students are expected to contact the course faculty with questions, concerns, or suggestions.

Syllabus change policy: The schedule and procedure in this course are subject to change in the event of extenuating circumstances as well as class learning needs and desires.

NURS 680 – Advanced Clinical Pathophysiology

Class preps

Class preps are aimed to assist the student in focusing in on the content and to be prepared for the class. *The content is not graded for accuracy*, it is the student’s responsibility to ask questions in class if they are unclear of the content. Class preps are to be submitted through Canvas as an attachment. Grading will be based on completion and *showing student’s attempt at understanding material including searching out other resources either posted or otherwise*. Copying and/or pasting is not adequate, DO NOT QUOTE sources. Simply quoting sentences from the book or other source will be considered incomplete. Bring your completed class preps to class to add to the discussion. Your bottom 3 scores will be dropped for your final grade.

Category/pts	Does not meet standard	Nearly meets standard	Meets standard	Exceeds standard
	0	3	4	5 points
Completion of questions 5 pts	CPREP not done	Answered <75% of CPREP	Answered < 100% of CPREP	Answered all questions on CPREP
	0 point	3	4	5
Depth of answers 5 pts.	No answers or answers are copied from the book or other source.	Answers are short and do not go into depth	Most answers are thorough and accurate; did not demonstrate attempt to understand material that was difficult.	All answers are thorough and show thoughtful process; Used supplemental resources to help understand material.
Total				

Tests

The content for this class will be tested online in Canvas. *Tests are to be taken independently, without the use of books or notes* and will be a combination of multiple choice, matching, T/F, or short answer. Each test will be available only once to the student for a limited time. There will be a 7-day window in which to take the test.

This method of testing assumes **academic honesty** (see policy) and that the student will take tests independently.

Instructions on Concept maps

The purpose of these assignments is to map out the student's understanding of the pathophysiologic process of a disease from the presence of risk factors through the mechanisms that effect cells and tissues in the development of the disease/ diagnosis. This will include the cellular and tissue events and the chemical messengers that are currently known to be involved.

The Concept map will detail the cellular, tissue, organ, and system progressions as they manifest in signs and symptoms of that disease / diagnosis. Pathways continue to show the mechanisms that lead to complications and sequelae to the disease. Concept maps should be presented in a sequential manner and should be logical and understandable. The time progression should proceed either left to right or top to bottom.

- For the **inflammation concept map** use your textbook's chapter on innate immunity and also the section on secondary MODS (it's a nice summary of the action) in the Shock, MODS chapter. The concept map will be done on a single powerpoint slide or in the program scrapple. See Canvas for ppt template and scrapple link. Be sure to follow the rubric that follows.
- For the **disease concept maps** you will have to sign up for the diseases you will be mapping out with the Concept map. This Concept map will be done electronically. You will submit in canvas- the concept map, reference page (APA and *separate*), and *articles* used if you have .pdf.
 - References: Student will use a minimum of 3 references per map: the textbook and *at least* two Scholarly journal articles. (*Wikipedia and websites will not be considered scholarly* with the exception of Uptodate. Uptodate may be use as one reference.) Reference materials are to be pathophysiology focused rather than treatment focused. Cite your resources where they apply on the concept map with the use of numbers in parenthesis e.g. (1).
 - DO NOT copy from your sources. No sentences or long phrase quotations – preferably use single words (or short phrase) per box. Make this a representation of your understanding.
 - *Nursing* holistic assessment and interventions should be related to the Concept map - incorporate them into where they would fit in the physiologic process. These are Nursing interventions—not medications.
 - Medications and labs for the disease process: indicate where in the process of the disease the medications/ diagnostic for that disease are applicable.
 - Be prepared to highlight some of the discoveries that you made in doing your concept map. So be sure to review your Concept map before that class and be prepared to add to the discussion.
 - Examples of Concept map are given in class and in textbook (see examples on page 539 and 603).

Possible diseases for concept maps: pick 2 (from separate systems)

<u>Cardiovascular:</u>	<u>Pulmonary:</u>	<u>Renal</u>	<u>Digestive</u>
CHF	P. edema,	Glomerulonephritis	GERD
Mitral valve stenosis	P. embolus,	Chr. Kidney disease*	Peptic ulcers (compare gastric and duodenal locations)
Hypertension	Bronchiectasis	Acute Tubular Necrosis	Celiacs (compare to Gluten intolerance)
Myocardial Infarction	Asthma	Nephrotic syndrome	Hepatitis C
Atrial Fibrillation	Emphysema		IBS (compare Ulcerative colitis and Crohn's)
Atherosclerosis	Pneumonia	<u>Reproductive</u>	Non-alcoholic Liver cirrhosis*
Atherosclerosis → MI → CHF**	Cystic fibrosis*	Endometriosis	
		Polycystic ovary	
Diabetes → micro and macro vascular disease**		Gonorrhea/chlamydia (compare the 2)	

*Cystic Fibrosis, Chronic Kidney (ESRD included), and Liver Cirrhosis/failure all involve multiple systems and will count as 2 concept map assignments.

** tracing the mechanism from the start of atherosclerosis through MI and complications of CHF or diabetes to vascular diseases can also count as 2 concept map assignments.

Inflammation Concept map Diagrams Assignment

Concept map I

Inflammation is a key process that is integral to many diseases. The purpose of this assignment is to provide the student opportunity to examine the inflammation process fully and to begin to understand the disease process at the vascular and cellular level.

Students will be developing a Concept map of the inflammatory process (vascular, cellular and tissue responses). The students are encouraged to begin this assignment within the first two weeks of the semester. On week 3, students will be given a list of terms that should be included in the Concept map—these are terms that should be incorporated into each Concept map. Each student will work independently to show the detailed process of that particular process. Students should be prepared to informally share their knowledge in class on week five—bring a copy to class.

Criteria	Score	Comments
Identifies risk factors/causes result to the development of the initial injury to the cell/ tissue / organ.	/10	
Showed how progression from the initial injury to cellular/chemical/vascular changes	/25	
Presented the mechanisms that progress to each of the sign and symptoms of inflammation	/10	
Shows the mechanisms of positive sequelae (wound healing/ granuloma) of the inflammation process.	/15	
Shows the mechanisms of complications (systemic response/chronic/ fibrosis) of the inflammation process.	/15	
Present both the priority nursing interventions including holistic assessment , in relation to the inflammation process.	/5	
Present both the diagnostics (labs, tests) and medications in relation to the inflammation process.	/5	
Includes all terms provided by instructor (one point off for each missing term)	/10	
Concept map diagram is logical and is easily understood. Concept map is in appropriate form and presentation is professional in appearance.	/5	
Total Score	/100	

Disease Process Concept Map

Students will sign up on Canvas for a disease process from the list provided on p.7. The student will participate in the discussion of the disease process and walk the class through the Concept map in which that disease is covered. No list of terms will be given to the students for this assignment.

Criteria	Score	Comments
Reflect how risk factors and etiology result to the development of the initial injury to the cell/ tissue / organ.	/10	
Showed the process of how the initial injury resulted in defect in the tissue, organ, and system functioning.	/10	
Presented the mechanisms that progress to the presenting sign and symptoms related to the disease pathogenesis.	/30	
Identify and relate the mechanisms that follow in presentation of possible complications of the disease process.	/25	
Present the priority nursing interventions including holistic assessment , in relation to the disease process.	/5	
Present the diagnostics (labs, tests) and medications in relation to the disease process.	/5	
References: a minimum of 3 scholarly works. May include one from the textbook, one from uptodate, and one other peer-reviewed scholarly resource. References are presented separately in APA form and are linked to the Concept map using numbers in parenthesis).	/10	
Concept map diagram is professional , and is easily understood .	/5	
Total Score	/100	

**NURS680 -01: Advanced Clinical Pathophysiology
Fall 2018 Calendar**

Week/ Date	Topic	Reading from McCance & Huether Unit	DUE: see syllabus for explanations/rubrics
Course prep	Review of physiology individually	Chap 1 review of physiology	
1/ Aug 21	The Cell; Genes and Gene-Environment interaction:	Unit II(chapter 4-6)	(Class prep is provided but not graded)
2/ Aug 28	Cell adaptation, /Cellular Proliferation (Neoplasms)	Unit I (pg. 50-54) & IV (chap 12-14)	Class prep (CPREP) 1
3/ Sept 4	Fluids and electrolytes Acid base balance Cell injury	I (pg.25-36; Chapter 3; pg 54-97	CPREP 2
Exam 1 – Sept. 8 – 16 at 11:59pm			
4/ Sept 11	Mechanisms of self-defense Innate immunity/inflammation Adaptive immunity	III (Chapter 7 & 8)	CPREP3
5/ Sept 18	Mechanisms of self-defense Alterations in Immunity/ HIV Infectious agents Sepsis/ MODS/ Shock	III (Chapter 9 - 11) XV (p1668-1679; p1699 – 1710)	CPREP 4 Inflammation Concept map due
6/ Sept 25	Endocrine	VI	CPREP 5
Exam 2 – Sept 29 – Oct 7 at 11:59pm			
7/ Oct 2	The Neurologic system I	V (Chapters 15,16,17)	CPREP 6
8/ Oct 9	The Neurologic system II PNI	V (Chapters 18-20) And Chapter 11 on stress	CPREP 7
9/ Oct 16	Hematologic Fluid Forces (on exam 4)	VIII (and p 103-109)	CPREP 8 <i>CV concept maps</i>
Exam 3- October 20 - 28 at 11:59pm			
Disease Concept maps are due the week before that system is covered* (e.g. if you choose CHF, your concept map is due Week 9/Oct 16)			

Week/ Date	Topic	Reading from McCance & Huether Unit /(specific portion)	DUE: see syllabus for explanations/rubrics
10/ Oct 23	Cardiovascular and lymphatic system	(Review p 103-109) IX (chap 31-33)	CPREP 9 <i>Pulmonary concept maps</i>
11/ Oct 30	Pulmonary	X	CPREP 10 <i>Renal concept maps</i>
12/ Nov 6	Renal /Urologic	XI	CPREP 11 <i>Reproductive concept maps</i>
Exam 4 November 10 - 18 at 11:59pm			
13/ Nov 13	Reproductive	VI / VII	CPREP 12 <i>Digestive concept maps</i>
Thanksgiving week: no class			
14/ Nov 27	Digestive	XII	CPREP 13
15/ Dec 4	Musculoskeletal/ Integumentary Burns	XIII/ XIV	CPREP 14
Exam 5 December 8 -16 at 11:59pm			
University Calendar Last day for Graduate students to withdraw. December 7. Exam week December 10 - 14 Grades are due December 17 at noon.			