



Department of Physician Assistant Education

Master of Science in Medicine

3 units

MSM 6106 FUNDAMENTALS OF NEPHROLOGY AND GENITOURINARY DISEASE

SUMMER 2025

Office location: 204 Office hours: TBA	Instructor title and name: Joey McAdams, PA-C Guest lecturers:
Final Exam and OSCEs: Monday, June 26, 2024, 8:00am-5:00pm	Phone:
Meeting location: Balboa Campus, Classroom 154, Clinical Skills Lab 223	Email: jrmcadams92@gmail.com

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

COURSE DESCRIPTION

This course covers the epidemiology, etiology, risk factors, pathogenesis, pathophysiology, complications, and differential diagnoses of commonly encountered renal system diseases and disorders through symptoms-based and systems-based approaches. This course also covers diseases and disorders specific to the male patient, and in-depth instruction in fluid, acid-base, and electrolyte disorders. Management of patients with these diseases and disorders across the life span from initial presentation through follow-up for acute, chronic, and emergent cases will be covered, as will referral when necessary, preventive medicine, and patient education.

COURSE GOALS

This goal of this course is to provide the appropriate basic science background essential to the understanding of and diagnosis of disease patterns related to the renal and urologic systems, including electrolyte and acid-base disorders. It will provide the student with the skills and knowledge necessary for the diagnosis and management of common renal and urologic disorders, including men's health.

PROGRAM LEARNING OUTCOMES

The content in this course will contribute to the student's proficiency in this/these area(s):

1. Gather a history and perform a physical examination. (MK, IC, PC, PR)
2. Prioritize a differential diagnosis following a clinical encounter. (MK, PC, PB, PR, SB)
3. Recommend and interpret common diagnostic and screening tests. (MK, IC, PC, PR, PB, SB)
4. Enter and discuss orders and prescriptions. (MK, IC, PC, PR, PB, SB)
5. Document a clinical encounter in the patient record. (MK, IC, PC, PR)
6. Provide an oral presentation of a clinical encounter. (MK, IC, PC, PB, PR)
7. Form clinical questions and retrieve evidence to advance patient care. (MK, PC, PR, PB, SB)
8. Give or receive a patient handover to transition care responsibility. (MK, PC, PR, IC, PB)
9. Collaborate as a member of an inter-professional team. (MK, IC, PC, PR, PB, SB)
10. Recognize a patient requiring urgent or emergent care and initiate evaluation and management. (MK, IC, PC, PR, PB, SB)
11. Obtain informed consent for tests and/or procedures. (MK, IC, PC, PR, PB)
12. Perform general procedures of a physician assistant. (MK, IC, PC, PR, PB, SB)

Initials indicate PA core competency required to meet the PLO.

PA Core Competencies:

MK = Medical Knowledge
PR = Professionalism

IC = Interpersonal Skills & Communication
PB = Practice-based Learning

PC = Patient Care
SB = Systems-based Practice

COURSE LEARNING OUTCOMES

Successful completion of this course requires demonstration of the skills and knowledge outlined here at, minimally, the COMPETENT level.

1. Obtain a history and perform a focused physical examination relevant to renal and urologic symptoms. (PC2; MK1; IC1; IC7; PR1; PR3; PR5)
2. Prioritize a differential diagnosis based on the history and physical findings in a patient with a renal and/or urologic complaint. (PC2, PC4, MK2, MK3, MK4, PB1, IC2, PR8)
3. Recommend common diagnostic and screening tests, pharmacotherapeutics, and management based on their applicability to the differential diagnosis. (PC4, PC5, PC7, PC9, MK1, MK4, PB9, SB3)
4. Document a clinical encounter including history, physical examination, lab and/or imaging results and a differential diagnoses in the patient record. ((PC4, PC6, IC1, IC2, IC5, PR4, SB1)

5. Provide an oral presentation of a clinical encounter for a renal and/or urologic complaint including discussion of the pathology, laboratory and/or imaging results and justification of the proposed management plan. (PC2; PC6; IC1; IC2; PB1; PR1; PR3)
6. Form clinical questions and retrieve evidence to advance patient care. (PC5, PC7, MK3, MK4, PB1, PB3, PB6, PB7, PB8, PB9)
7. Recognize a patient requiring urgent or emergent care for a renal and/or urologic condition or the patient in whom the manifestation of systemic disease is renal and/or urologic and initiate evaluation and management. (PC1, PC2, PC3, PC4, PC5, PC6, IC6, PR1, PR5)

INSTRUCTIONAL OBJECTIVES

Upon completion of the **ANATOMY AND PHYSIOLOGY** section of the course, the student will be able to:

1. Discuss the major epithelial transport mechanisms of various segments of the nephron and indicate what areas are targets of commonly prescribed diuretics. Comprehension, B2.02a, B2.02b, B2.02d
2. Discuss the physiology of water balance and osmolality of body fluids, including the feedback regulation of antidiuretic hormone (ADH) and ADH effects on the kidney and urine osmolality. Comprehension, B2.02b
3. Discuss the role of the kidneys in regulation of body fluids, proteins, and electrolytes. Comprehension, B2.02b
4. Relate the significance of measuring BUN, creatinine, BUN/creatinine ratio, and creatinine clearance to clinical diagnosis. Application, B2.02b
5. Explain the physiology of sodium, potassium, hydrogen ion, and water excretion and determine various causes of hyponatremia, hypernatremia, hypokalemia, and hyperkalemia. Analysis, B2.02b
6. Analyze and interpret components of a urinalysis. Analysis, B2.02b
7. Estimate and determine normal creatinine clearance and glomerular filtration rates (GFR) for various populations. Evaluation, B2.02b

Upon completion of the **PATHOPHYSIOLOGY** section of the course, the student will be able to:

8. Explain the causes and consequences of over secretion and under secretion of testosterone for a) prepubertal and b) postpubescent males. Comprehension, B2.02c
9. Understand aging- related changes in the hypothalamus-pituitary-gonadal axis that lead to puberty, reproductive maturity, and reproductive senescence (andropause). Comprehension, B2.02c
10. Discuss evaluation, staging, and management of chronic kidney disease (CKD). Comprehension, B2.02c
11. Discuss the clinical significance of proteinuria, and provide examples of diseases/disorders that may be indicated by proteinuria. Application, B2.02c
12. Contrast pre-renal causes of altered kidney function, post-renal disorders, and intrinsic renal diseases. Analysis, B2.02c
13. Analyze and interpret components of an abnormal urinalysis. Analysis, B2.02c
14. Estimate and determine creatinine clearance and glomerular filtration rates (GFR) in patients with chronic kidney disease (CKD). Evaluation, B2.02c

Upon completion of the **PHYSICAL DIAGNOSIS** section of this course, the student will be able to:

15. Demonstrate a focused medical history in the screening of or evaluation of suspected renal or genitourinary disease. Application, B2.07a
16. Perform complete and focused physical exam of the kidneys and genitourinary tract. Application, B2.07b
17. Explain the significance of positive and negative findings in the renal and genitourinary examinations. Analysis, B2.07b, B2.07c

Upon completion of the **CLINICAL MEDICINE** section of the course, the student will be able to: B2.03

18. Identify common risk factors in renal and genitourinary disease and discuss their management. Knowledge, B2.07e
19. Properly interpret a urinalysis, common renal function tests and define normal vs abnormal values. Application, B2.07d
20. Differentiate the evaluation and treatment approach in acute, chronic and emergent renal and urologic disease. Analysis, B2.08b
21. List commonly employed modalities aimed at prevention of renal and genitourinary disease. Knowledge, B2.08b
22. Given a patient across all age groups, with any of the following signs or symptoms: interview and elicit a comprehensive, relevant medical history, B2.07a perform a complete and focused physical examination and identify the physical findings, B2.07b generate a complete list of differential diagnoses prioritizing them appropriately, B2.07c recommend an appropriate work-up, order and interpret diagnostic studies, B2.07d propose patient management including acute and chronic care plans, B2.07e provide patient education and referral. B2.07f, Evaluate
 - a. Anuria
 - b. Oliguria
 - c. Glycosuria
 - d. Dysuria
 - e. Hematuria
 - f. Polyuria
 - g. Proteinuria
 - h. Frequency
 - i. Urgency
 - j. Pyuria
 - k. Nocturia
 - l. Ketonuria
 - m. Generalized edema
 - n. [Hypertension](#)
 - o. Incontinence
 - p. Retention
 - q. Phenylketonuria

23. Given a patient across all age groups, with any of the following genitourinary conditions: interview and elicit a comprehensive, relevant medical history, ^{B2.07a} perform a complete and focused physical examination and identify the physical findings, ^{B2.07b} generate a complete list of differential diagnoses prioritizing them appropriately, ^{B2.07c} recommend an appropriate work-up, order and interpret diagnostic studies, ^{B2.07d} propose patient management including acute and chronic care plans, ^{B2.07e} provide patient education and referral. ^{B2.07f, Evaluate}

- r. [Benign prostatic hyperplasia](#)
- s. Bladder prolapse
- t. Congenital abnormalities
 - i. Hypospadias
 - ii. Epispadias
- u. Cryptorchidism
- v. [Erectile dysfunction](#)
 - i. Peyronie's Disease
- w. Scrotal mass
 - i. [Hydrocele](#)
 - ii. [varicocele](#)
 - iii. Epididymal cyst/Spermatocele
- x. Renal mass
- y. [Incontinence](#)
- z. Nephro/urolithiasis
- aa. Paraphimosis/phimosis
- bb. Testicular torsion
- cc. [Priapism](#)
- dd. Urinary retention
- ee. Overactive bladder
- ff. Underactive bladder
- gg. Testicular trauma
 - i. Hematoma
 - ii. Rupture
- hh. Penile trauma
 - i. Penile fracture
- ii. Urethral prolapse
- jj. Urethral stricture
- kk. Vesicoureteral reflux

24. Given a patient across all age groups, with any of the following genitourinary infectious and/or inflammatory conditions: interview and elicit a comprehensive, relevant medical history, ^{B2.07a} perform a complete and focused physical examination and identify the physical findings, ^{B2.07b} generate a complete list of differential diagnoses prioritizing them appropriately, ^{B2.07c} recommend an appropriate work-up, order and interpret diagnostic studies, ^{B2.07d} propose patient management including acute and chronic care plans, ^{B2.07e} provide patient education and referral. ^{B2.07f, Evaluate}

- ll. [Cystitis](#)

- mm. Epididymitis
- nn. Fournier's gangrene
- oo. Orchitis
- pp. Prostatitis
- qq. [Pyelonephritis](#)
- rr. Urethritis

25. Given a patient across all age groups, with any of the following genitourinary neoplastic diseases: interview and elicit a comprehensive, relevant medical history, ^{B2.07a} perform a complete and focused physical examination and identify the physical findings, ^{B2.07b} generate a complete list of differential diagnoses prioritizing them appropriately, ^{B2.07c} recommend an appropriate work-up, order and interpret diagnostic studies, ^{B2.07d} propose patient management including acute and chronic care plans, ^{B2.07e} provide patient education and referral. ^{B2.07f, Evaluate}

- ss. Bladder carcinoma
- tt. Penile carcinoma
- uu. Prostate carcinoma
- vv. Renal cell carcinoma
- ww. Testicular carcinoma
- xx. Wilms tumor

26. Given a patient across all age groups, with any of the following renal diseases: interview and elicit a comprehensive, relevant medical history, ^{B2.07a} perform a complete and focused physical examination and identify the physical findings, ^{B2.07b} generate a complete list of differential diagnoses prioritizing them appropriately, ^{B2.07c} recommend an appropriate work-up, order and interpret diagnostic studies, ^{B2.07d} propose patient management including acute and chronic care plans, ^{B2.07e} provide patient education and referral. ^{B2.07f, Evaluate}

- yy. Acute renal failure
- zz. Chronic kidney disease
- aaa. Glomerulonephritis
- bbb. Hydronephrosis
- ccc. [Nephrotic syndrome](#)
- ddd. [Nephritic Syndrome](#)
- eee. Polycystic kidney disease
- fff. Renal vascular disease
- ggg. [Diabetic nephropathy](#)
- hhh. End-stage renal disease
- iii. Horseshoe kidney

27. Given a patient across all age groups, with any of the following fluid and electrolyte disorders: interview and elicit a comprehensive, relevant medical history, ^{B2.07a} perform a complete and focused physical examination and identify the physical findings, ^{B2.07b} generate a complete list of differential diagnoses prioritizing them appropriately, ^{B2.07c} recommend an appropriate work-up, order and interpret diagnostic studies, ^{B2.07d} propose patient management including acute and chronic care plans, ^{B2.07e} provide patient education and referral. ^{B2.07f, Evaluate}

- jjj. Dehydration

kkk. Hypervolemia

III. [Hypovolemia](#)

mmm. [Hyperkalemia](#)

nnn. [Hypokalemia](#)

ooo. [Hypernatremia](#)

ppp. [Hyponatremia](#)

qqq. [Hypercalcemia](#)

rrr. [hypocalcemia](#)

sss. Acid/Base Disorders

i. [High Anion Gap Metabolic Acidosis: Pathogenesis](#)

28. Discuss common genitourinary disorders presenting in children and in the elderly, their varying presentations and propose a management plan including consideration of co-morbidities and polypharmacy. Application, B2.02d, B2.07e, B2.08a

29. Working with the appropriate health care professional, develop an appropriate patient education plan as needed. Application, B2.07f

30. Working with the appropriate health care professional, recommend an appropriate patient referral plan as needed. Application, B2.07f

31. Working with the appropriate health care professional recommend a suitable rehabilitation plan as needed. Application, B2.08b

32. Working with the appropriate health care professional recommend a suitable prevention program as needed. Application, B2.08b

33. Working with the appropriate health care professional, recommend an appropriate palliative care plan for a patient facing end-of-life decisions. Application, B2.08e

34. Differentiate the evaluation and treatment approach in acute, chronic and emergent genitourinary disease. Analysis, B2.07e, B2.08b

35. Identify the patient requiring emergent intervention for an acute genitourinary disorder. Evaluation, B2.08b

36. Demonstrate skills in problem solving and medical decision-making through community learning group case discussions and activities. Application, B2.05

37. Demonstrate supportive counseling skills when delivering bad news to a patient. Application, B2.12c

SKILLS OBJECTIVES

Upon completion of this course, the student will demonstrate competence in:

1. Eliciting a history. Application, B2.07a
2. Performing complete and focused physical exam of the kidneys and genitourinary tract. Application, B2.07b
3. Performing and properly interpreting a urinalysis, common renal function tests and define normal vs abnormal values. Application, B2.09
4. Properly inserting a bladder catheter using sterile technique. Application, B2.09

Note: Superscripts identify the Bloom's Taxonomy level for each objective.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Note: Texts prefaced with double asterisks are provided in Access Medicine.

****Harrison's Principles of Internal Medicine 20/E (Vol.1 & Vol.2) 20th Edition by Dennis L. Kasper, Anthony S. Fauci, Stephen Hauser, Dan Longo, J. Larry Jameson, Joseph Loscalzo**

ISBN-13: 978-1259644030

ISBN-10: 0071802150

****Current Medical Diagnosis and Treatment 2021, 60e**

Author: Maxine A. Papadakis, Stephen J. McPhee, Eds. & Michael Rabow, Assoc Ed

Publisher: McGraw-Hill

ISBN: 978-1260469868

Date	Topic/Instructor	Reading/Assignment
Tuesday November 5th 1-3pm Prof. Diana Paddock, PA-C	Shortness of Breath	Tintinalli
Wednesday November 6th 12-2pm Prof. Sara Mayer, PA-C 2-4pm Prof. Taera Felkins, PA-C	Vertigo Nausea, Vomiting, Diarrhea	Tintinalli
Thursday November 7th 1-4pm Dr. Tanya Mamantov, PA-C	Abdominal Pain	Tintinalli

<p>Friday November 8th</p> <p>8am-12pm Matt Colton, PA-C</p> <p>1-2:30pm Dr. Ed Holly, DDS</p> <p>2:30-4:30 Matt Colton, PA-C</p>	<p>Fever, Sepsis, Altered LOC</p> <p>Dental Emergencies</p> <p>EKG Review</p>	Tintinalli
<p>Saturday November 9th</p> <p>9am-4pm</p> <p>Promedify</p>	BLS/ACLS	
<p>Monday November 11th</p> <p>9a-12pm</p> <p>Dr. Tanya Mamantov, MD</p>	Toxicology lecture + Jeopardy	Tintinalli
<p>Tuesday November 12th</p> <p>1-3pm Dr. Cornelius Jansen, MD</p> <p>3-5pm Dr. Bishop, MD</p>	<p>ENT Emergencies</p> <p>Ocular Emergencies</p>	Tintinalli

<p>Wednesday November 13th 1-3pm</p> <p>Prof. Diana Paddock, PA-C</p>	<p>Advanced Suturing Lab</p>	<p>Slides on Canvas</p>
<p>Thursday November 14th 1-4p</p> <p>Dr. Tanya Mamantov, MD</p>	<p>Cough and Edema</p>	<p>Tintinalli</p>
<p>Friday November 15th 8am-12pm Darron Fritz DSc. PA-C</p> <p>1-5p Trauma Day Lab</p>	<p>ATLS</p> <p>Trauma Day Lab (Airway management, NDC/Chest tube, IO, EFAST)</p>	<p>Tintinalli</p>
<p>Monday November 18th 10a-12p Prof Diana Paddock, PA-C</p> <p>1-4p Dr. Tanya Mamantov, MD</p>	<p>Chest Pain</p> <p>Foreign Body and Bleeding</p>	<p>Tintinalli</p>
<p>Tuesday November 19th 1-2:30p Thomas Bales, PA-C</p> <p>2:30-4p</p>	<p>Psychiatric Emergencies</p> <p>OB Emergencies</p>	<p>Tintinalli</p>

Katherine Fundora		
Wednesday November 20th 11a-2:30p	Skills Assessment 3: Airway management, Splinting (thumb spica), Joint injections, Advanced Suturing	Canvas Rubrics
Monday June 24th 8-5pm	Final Exam and PC OSCE	

LEARNING MODALITIES

Modalities include lectures, on-line pre-lecture activities, reading assignments, community learning activities, and clinical skills labs. The class schedule and assignments can be found in Canvas.

ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. However, we recognize that as adults you have other life responsibilities and challenges that may interfere. Ultimately you are responsible for your education and your ability to demonstrate mastery of the course and program objectives.

1. You MUST attend:
 - PE and clinical skills labs appropriately dressed and with all necessary equipment
 - examinations on the date and time for which they are schedule
 - Community learning group
2. We expect
 - active participation in all class activities.
 - completion of all class preparatory assignments prior to commencement of class.
 - respect for the class, peers and faculty.
 - on-time arrival for all classes, laboratories, learning groups or any scheduled activities.

Routine tardiness demonstrates a lack of professionalism and will not be tolerated

INCOMPLETES AND LATE ASSIGNMENTS

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Failure to meet the deadline will result in a loss of 10% each day the assignment is not turned in to the requesting faculty member. Incompletes will only be

assigned under extremely unusual circumstances. Students failing an examination or practicum must complete the designated remediation (See REMEDIATION below) within the assigned time.

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examinations (written and practical) **on their respective scheduled days**. No requests for early examinations or alternative days will be approved.

ASSESSMENT AND GRADING

Student course grades are calculated using all assessment tools utilized during the course. These include quizzes, written examinations, written assignments, practicums, and evaluation of skills.

Learning community groups will be utilized to provide case-based instruction. A clinical case will be presented to each group by the group mentor. Students are expected to utilize knowledge acquired from prior readings and lectures, as well as self/group directed learning to work up the case, develop a working diagnosis, a differential diagnosis and a therapeutic regimen which will include a follow-up plan and patient education. Effective interpersonal communication, clinical reasoning and problem solving abilities, professional behavior and teamwork are paramount to success and development as clinicians. Cases will be issued no more frequently than every other week. There will be 2 cases in this module. Students will receive a collective grade for this exercise.

Learning community group performance expectations include; demonstrating effective interpersonal communication, clinical reasoning and problem solving abilities, professional behavior and teamwork skills. Application, B2.05, B4.03b, B4.03c, B4.03e

ACTIVITY	% OF GRADE
Learning Community	5%
Case Study H&P	5%
Written Examinations	50%
Skills OSCE	15%
Patient-centered OSCE	25%

Grading will be in keeping with Point Loma Nazarene University policy for graduate programs and grading will be as follows:

A=93-100	C=73-76
A-=92-90	C-=70-72
B+=87-89	D+=67-69
B=83-86	D=63-66
B-=80-82	D-=60-62
C+=77-79	F=0-59

REMEDIATION

Remediation is the process by which both the student and the program are assured that performance indicating a deficiency in knowledge or skills is subsequently demonstrated to be satisfactory. This may include a re-test over missed material, a skills demonstration or a review of missed material with completion of corrected answers. It is important to note that this is content remediation, not grade remediation and no grade will be changed based on these activities.

Within 48 hours of the posting of a grade of <70%, the student MUST contact the course director to discuss the student's performance and create a remediation plan. Unless otherwise directed by the course director, remediation activities must be completed within 5 days.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See the [Academic Honesty Policy](#) in the Graduate and Professional Studies Catalog for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2533). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. Professors are able to view a student's approved accommodations through Accommodate.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any accommodations.

This syllabus is subject to change. Students are encouraged to check course messages and emails in order to remain current.

ARC-PA standards (5th edition) addressed in this course: B2.02(a)(b)(c)(d), B2.03, B2.05, B2.07, B2.08, B2.09, B2.12(c), B2.18, B4.03(b)(c)(e)