



Department of Physician Assistant Education

Master of Science in Medicine

2 units

**MSM 6108 FUNDAMENTALS OF ENDOCRINOLOGY**

**SUMMER 2025**

<b>Office location: 204</b> <b>Office hours: TBA</b>	<b>Instructor title and name:</b> Jeanne Nassar, MS, PA-C  <b>Guest Lecturers:</b> Dr. Venu Prabaker, MD Dr. Kristen Kellogg, DNP Dr. Georges Argoud, MD Maria Argoud, PA-C
<b>Final Exam and OSCEs: Friday 8/4/24</b> <b>8:00am-5:00pm</b>	<b>Phone:</b>
<b>Meeting location:</b> Balboa Campus, Classroom 154, Clinical Skills Lab 223	<b>Email:</b> jnassar@pointloma.edu

**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**

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This course covers the epidemiology, etiology, risk factors, pathogenesis, pathophysiology, complications, and differential diagnoses of commonly encountered endocrine system diseases and disorders through symptom-based and systems-based approaches. 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

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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 endocrine system and to provide the student with the skills and knowledge necessary for the diagnosis and management of common endocrine disorders.

## PROGRAM LEARNING OUTCOMES

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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

IC = Interpersonal Skills & Communication

PC = Patient Care

PR = Professionalism

PB = Practice-based Learning

SB = Systems-based Practice

## COURSE LEARNING OUTCOMES

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

1. Obtain a history and perform a focused physical examination relevant to endocrine symptoms. (PC2; MK1; IC1; IC7; PR1; PR3; PR5)
2. Prioritize a differential diagnosis based on the history and physical findings in a patient with an endocrine 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 an endocrine 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 an endocrine condition or the patient in whom the manifestation of systemic disease is endocrine and initiate evaluation and management. (PC1, PC2, PC3, PC4, PC5, PC6, IC6, PR1, PR5)

## INSTRUCTIONAL OBJECTIVES

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

1. Summarize the site of production, regulation, and effects of the hormones of the endocrine system. Comprehension, B2.02a, B2.02b
2. Discuss the chemical composition of hormones and their mechanism of action. Comprehension, B2.02b
3. Explain the role of the pancreatic endocrine cells in the regulation of blood glucose. Comprehension, B2.02b
4. Compare and contrast nervous and endocrine system chemical communication. Analysis, B2.02b
5. Categorize hormones based on their composition and target cell action. Analysis, B2.02a, B2.02b
6. Compare and contrast steroid and nonsteroid hormone action. Analysis, B2.02b
7. Diagram the three mechanisms controlling hormone secretion, including negative feedback. Analysis, B2.02a, B2.02b
8. Contrast the effects of glucagon and insulin secretion. Evaluation, B2.02b

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

9. Predict the medical complications related to diabetes mellitus and explain the mechanism by which they occur. Analysis, B2.02c
10. Explain the pathophysiology and management of [Type 1 Diabetes](#). Comprehension, B2.02c
11. Explain the pathophysiology and management of [Type 2 Diabetes](#). Comprehension, B2.02c
12. Explain the physiology of normal and abnormal thyroid function. Comprehension, B2.02c
13. Describe the evaluation and management of diseases of the anterior and posterior pituitary. Comprehension, B2.02c
14. Compare the causes to the consequences of a) oversecretion and b) undersecretion of thyroid hormones. Explain what conditions can cause an enlargement of the thyroid gland. Analysis, B2.02c
15. Predict the consequences of [vitamin D deficiency](#) and vitamin D excess. Analysis, B2.02c
16. Compare the causes to the consequences of a) oversecretion and b) undersecretion of mineralocorticoids. Analysis, B2.02c
17. Predict the impact of stress on the interactions of adrenal medullary and cortical hormones. Analysis, B2.02c

18. Relate disease states to an oversecretion of adrenal catecholamines. Analysis, B2.02c
19. Relate disease states to: a) oversecretion, b) undersecretion of insulin, or c) decreased sensitivity to insulin, and describe the principal symptoms of each. Analysis, B2.02c
20. Relate the impact of acinar cell injury and impairment of the secretion of zymogen granules to pancreatic health. Analysis, B2.02c
21. Classify various causes of insulin resistance and the factors leading to insulin resistance in Type 2 DM. Distinguish it from metabolic syndrome. Analysis, B2.02c

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

22. Demonstrate a focused medical history in the evaluation of a suspected endocrine disease and/or disorder. Application B2.07a
23. Perform a complete, but focused physical examination on a patient with suspected endocrine disease and/or disorder with all special examinations relevant to this system. Application, B2.07b
24. Differentiate between normal and abnormal findings in the examination and identify the most likely etiologies. Analysis, B2.07c

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

25. 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, Evaluation
  - a. Amenorrhea
  - b. Breast Discharge
  - c. Gynecomastia
  - d. Hirsutism with and without virilization
  - e. [Hypercalcemia](#)
  - f. [Hypocalcemia](#)
  - g. Hypercholesterolemia
  - h. Hyperglycemia
  - i. [Hypoglycemia](#)
  - j. Hyperphosphatemia
  - k. Hypophosphatemia
  - l. Hyperthyroidism
  - m. Hypothyroidism
  - n. [Hypertriglyceridemia](#)
  - o. Osteoporosis
  - p. Hyperparathyroidism
  - q. Hypoparathyroidism

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

- r. Weight loss
  - i. Neoplastic disease
    - 1. Multiple endocrine neoplasia
    - 2. Neoplastic syndrome
    - 3. Primary endocrine malignancy
  - ii. [Hyperthyroidism](#)
  - iii. Pheochromocytoma
  - iv. [Graves Disease](#)
  - v. Hypoglycemia
  - vi. [Corticoadrenal insufficiency](#)
- s. Weight Gain
  - i. [Polycystic Ovarian Syndrome](#)
  - ii. Hypothyroidism
  - iii. Cushing syndrome
  - iv. Hypogonadism
  - v. Growth Hormone Deficiency
  - vi. Hypothalamic obesity
- t. Palpitations
  - i. Hyperthyroidism
  - ii. Hypoglycemia
- u. Tachycardia
  - i. Hyperthyroidism
  - ii. Hypoglycemia
- v. Sweating/diaphoresis
  - i. Hyperthyroidism
  - ii. Hypoglycemia
- w. Hoarseness and dysphagia
  - i. [Hashimoto's Thyroiditis](#)
- x. Headache
  - i. [Pituitary adenoma](#)
- y. Heat Intolerance
  - i. Hyperthyroidism
- z. Cold Intolerance
  - i. Hypothyroidism
  - ii. [Postpartum thyroiditis](#)
- aa. Diarrhea/ bowel movements
  - i. Hyperthyroidism
- bb. Tremor/nervousness
  - i. Hyperthyroidism

- ii. Hypoglycemia
  - iii.
- cc. Proptosis
  - i. Hyperthyroidism
- dd. Myxedema
  - i. Hyperthyroidism (pretibial)
- ee. Short stature
  - i. Dwarfism
- ff. [Growth hormone excess](#)
  - i. Gigantism/acromegaly
- gg. Confusion/lethargy/amnesia/seizures
  - i. Hypoglycemia
- hh. Confusion/altered personality/lethargy/seizures
  - i. Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- ii. Polyphagia/polydipsia/polyuria
  - i. Hyperglycemia
- jj. Copious dilute urine
  - i. Diabetes insipidus
- kk. Weakness
  - i. Hyperglycemia

27. Provide appropriate patient education to the Type I/Type II diabetic with regard to diet, exercise, medication, symptoms of hypoglycemia and appropriate acute response to the patient and family. Synthesis, B2.12a, B2.04

28. Choose a pharmacotherapeutic intervention relating the indications, contraindications, complications, efficacy and effectiveness of the treatment. Evaluate, B2.02d

29. Justify the ordering of diagnostic tests used in the evaluation of endocrine disease identifying the relevance to diagnosis, risk/benefit and cost. Analysis, B2.07d

30. Discuss common endocrine 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

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

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

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

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

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

36. Differentiate the evaluation and treatment approach in acute, chronic and emergent endocrine diseases and disorders. Analysis, B2.07e, B2.08b

37. Identify the patient requiring emergent intervention for an acute endocrine disorder. Evaluation, B2.08b
38. Demonstrate skills in problem solving and medical decision-making through community learning group case discussions and activities. Application, B2.05
39. Demonstrate supportive counseling skills when delivering bad news to a patient. Application, B2.12c

## 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, 60e (2021)**

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

Publisher: McGraw-Hill

ISBN: 978-1260469868

Date	Topic/Instructor	Reading/Assignment
Wednesday July 17 <sup>th</sup> 1-4 PM Jeanne Nassar, PA-C	Anatomy and Physiology Pathophysiology  Thyroid	Current Chapter 28-06 - 28-12
Thursday July 18 <sup>th</sup> 1-5PM	Skills Assessment 2	
Friday July 19 <sup>th</sup> 8-5PM	Dr. Prabaker - Diabetes Mellitus Intro  2 - 3 pm ZOOM Dr Argoud - Type 1 vs Type 2 DM, LADA, MODY, etc. Approach to new onset Type 1 and 2, 1 hour zoom - Insulin/insulin dosing	Current Chapter 29-01 - 29-12

	3 - 4 ZOOM PA Maria Argoud - Insulin use in Type 1 and 2, insulin pumps, CDM 4-5 ZOOM Dr. Argoud - PO treatment options c/s insulin	
Monday July 22 <sup>rd</sup> 9- 12; 1 -4 PM Jeanne Nassar, PA-C	Hypothalamus Pituitary Parathyroid Osteoporosis/Osteopenia Vitamin D Deficiency Adrenals Pancreas	Current Chapter 28-13 - 28-16, 28-23 - 28-26, 28-01 - 28-05
Tuesday July 23 <sup>rd</sup> 1-4PM  Dr. Prabaker, MD	Hyperlipidemia Hypertriglyceridemia	Current Chapter 30
Wednesday July 24 <sup>th</sup> 1-4 PM Jeanne Nassar, PA-C	Quiz 1 Weight loss Weight gain Palpitations Tachycardia Sweating/diaphoresis Endo Physical Exam	Current Chapter 31
Friday July 26 <sup>th</sup> 9a-12p; 1-4p Kristen Kellogg, DNP	Diabetes Mellitus Review and Case Presentations	

<p>Monday July 29<sup>th</sup> 9- 12 PM 1 -4 PM Jeanne Nassar, PA-C</p>	<p>Tremor Proptosis Myxedema Short stature Growth hormone excess Confusion/altered personality/lethargy/seizures Polyphagia/polydipsia/polyuria Copious dilute urine Weakness</p>	
<p>Wednesday July 31<sup>st</sup> 1-4PM Jeanne Nassar, PA-C</p>	<p>Hoarseness and dysphagia Headache Heat intolerance Cold intolerance Diarrhea/ bowel movements</p>	
<p>Thursday August 1<sup>st</sup> 1-4PM Jeanne Nassar, PA-C</p>	<p>Reproductive organs PCOS Review</p>	

### 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

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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

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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

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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

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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

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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

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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. For all student appeals, faculty and students should follow the procedures outlined in the University Catalog. See Graduate Academic and General Policies for definitions of kinds of academic dishonesty and for further policy information.

## **ARTIFICIAL INTELLIGENCE (AI) POLICY**

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You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, Grammarly, Perplexity, etc.) in this course. Any work that utilizes AI-based tools must be clearly identified as such, including the specific tool(s) used. Please use the following sources to guide your citations when using AI.

[MLA Style Center: Citing Generative AI](#)

[APA Style: How To Cite ChatGPT](#)

[Chicago Manual of Style: Citing Content Developed or Generated by AI](#)

## **PLNU ACADEMIC ACCOMMODATIONS POLICY**

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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, B2.04, B2.05, B2.07(a-f), B2.08(a)(b)(e), B2.09, B2.12(a)(c), B4.03b, B4.03c, B4.03e**