Course Description: This is one of a series of three courses in the study of medicine that will be taught in a modular format utilizing a combination of lecture and interactive techniques. It is designed to explore the common medical and surgical disorders encountered in general adult medicine. This will include: clinical presentation, acute care, etiology, pathophysiology, prevention, genetic involvement, diagnostic work-up, lab interpretation, appropriate referral, and management of disorders pertaining to the following modules: laboratory medicine, infectious disease, HEENT, dermatology, pulminology, allergy and immunology, genetics, gastroenterology, and tropical/wilderness medicine. Students will develop a deeper curiosity about the art and science of clinical medicine, a passion about the field of medicine, and learn the skills of self directed learning.

Required Course Materials:
2.1. Current Medical Diagnosis and Treatment, Stephen McPhee, ISBN: 978-0071591249

Optional Course Materials:
3.2. Harrison’s Principles of Internal Medicine McGraw Hill

Course Objectives: Upon completion of this series of courses each student should be able to:
4.1. Understand and reasonably discuss the clinical elements of a broad range of topics, using both cellular and holistic terms.
4.2. Evaluate resources for exploration of topics and issues pertinent to current clinical practice.
4.3. Efficiently formulate a strategy for researching the clinical elements of topics pertinent to PA practice.
4.4. Demonstrate effective tactics for researching the underlying clinical elements of topics pertinent to PA practice.
4.5. Correctly recall or define clinical elements of topics and systems covered during this course.
4.6. Compare and contrast data and concepts of clinical elements of topics covered during this course.
4.7. Collaborate with colleagues to formulate conclusions using evidence based principles.
4.8. Build foundational knowledge and basic understanding of each of the topics listed in the syllabus.
4.9. Develop basic critical thinking skills necessary to evaluate a patient with specific signs and symptoms and formulate a differential diagnosis.
4.10. Demonstrate an understanding of the interdisciplinary nature of medicine.
4.11. Develop skills in teamwork necessary to function as a member of a functioning health care team.
4.12. Develop an emerging understanding of the importance of empathy and social skills in the practice of medicine.
4.13. Laboratory Medicine Module Objectives:
4.13.2. State the indications for ordering all laboratory tests covered.
4.13.3. Define the following tests: electrolytes, BMP, CMP, renal RBC, Hb, Hct, MCV, MCH, MCHC, RDW, Retic, ESR, platelets, hepatic panel, BUN, Creat, and RBC differential and discuss their significance in relation to health and illness.
4.13.4. Discuss how reference values/normal values are used to guide the practitioner in different age groups and populations.
4.13.5. Define the terms: panic value and STAT.
4.13.6. Understand test results and the implications associated with abnormal test results.
4.13.7. Identify normal values and interfering factors for the lab tests covered.
4.13.8. State the various test abnormalities and the significance of these abnormalities.
4.13.9. State the difference between hypo-hypernatremia; hypo-hyperkalemia; hypo-hyperchloremia; hypo-hypermagnesemia; hypo-hypercalcemia; hypo-hyperphosphatemia.

4.14. Infectious Disease Module Objectives:
4.14.2. Review and describe the following issues associated with pathogenesis: transmission, adherence, invasion, inflammation, gram positive and negative toxins, and stages of infectious disease.
4.14.3. Explain how infectious agents are identified and how epidemics arise and spread.
4.14.6. Describe the appropriate use and results, in terms of involved organisms, gained from, blood cultures, sputum, CSF, stool, urine, genital tract, and wound cultures.
4.14.7. Define the following terminology with respect to viral classification: general structure and function, DNA, RNA, and diagnostics.
4.14.8. Define the following with respect to common fungal organisms: structure and growth, infections, and diagnostics.
4.14.10. State and discuss the essentials of diagnosis and treatment for the more commonly seen infectious diseases in the following disease types: bacteremia, sepsis, HIV, influenza, URI’s, herpes, mycotic diseases, rickettsial diseases, STD’s, spirochetal diseases, protozoal diseases, helminthic diseases, zoonotic diseases.
4.14.11. Describe how vaccines work and differentiate those that are live and those that are not. List the most common types of vaccines and explain when they are indicated.
   4.14.13.1. Specify the known routes of HIV transmission and how workers are most commonly exposed in the health care setting.
   4.14.13.2. Utilize and choose appropriate universal precautions when providing care for patients.
   4.14.13.3. Generalize the general epidemiological trends of HIV infection with specific consideration to various population, cultural, and regional subsets.
   4.14.13.4. Summarize the immunologic consequences of HIV infection.
   4.14.13.6. Counsel patients regarding the recognized modes of transmission of HIV.
   4.14.13.7. Identify and evaluate patients who are at risk for HIV infection and for whom testing should be recommended.
   4.14.13.9. Appropriately evaluate common problems such as cough, fever, lymphadenopathy, and diarrhea in the HIV infected patient through history, physical and laboratory studies.
   4.14.13.10. When performing a physical exam, recognize common abnormalities associated with HIV infection such as dermatological problems, Kaposi’s sarcoma, neurological problems and wasting, and assess their relative significance.

4.14.13.12. Given physical exam findings and/or laboratory results, the student will classify the stage of HIV disease according to the criteria used by the CDC.

4.14.13.13. Discuss/debate the management principles and issues in HIV infection and AIDS.

4.15. Otorhinolaryngology and Ophthalmology Module Objectives:

4.15.1. Differentiate between tumors and disease of the eyes, urgent conditions of the eye and common non-urgent problems.

4.15.2. Develop and assimilate a working knowledge of conditions that may present as eye pain, eye redness or visual loss. This will include but not be limited to: corneal foreign body, corneal abrasions, actinic cataracts, contact lens cataracts, cornea ulcer (bacterial and viral), herpes simplex infections, and acute narrow angle glaucoma.

4.15.3. Compare and contrast the different etiologies of a red eye which includes: acute conjunctivitis, corneal trauma or infection, acute iritis, and acute glaucoma.

4.15.4. Specify and differentiate the causes of acute visual loss which includes but will not be limited to: central or retinal artery occlusion, hemorrhage, retinal detachment, optic neuritis, temporal arteritis, CVA, and hysterical blindness.

4.15.5. Judge and select the indications for immediate referral to an ophthalmologist for the various types of eye trauma which will include: chemical burns, blunt and penetrating trauma, conjunctival injury, cornea injury, iris injury, anterior chamber injury, lens injury, and globe rupture.

4.15.6. Evaluate and present case studies of patients that have HEENT diseases, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.15.7. Differentiate between the following HEENT illnesses in terms of their etiological organisms, clinical presentation, laboratory findings, prevention, genetic involvement, and management: common cold, sinusitis, influenza, rheumatic fever, otitis media, rhinitis, nasal polyps, streptococcal pharyngitis, tonsillitis, peritonsilar abscess, aphthous ulcers, oral candidiasis, oral leukoplakia, oral herpes, laryngitis, dental disease, periodontitis, diphtheria, mononucleosis, mastoiditis, otitis externa, parotitis, SOM, and thrush.

4.15.8. Specify the etiology, pathogenesis, describe the clinical presentation, collect/order/interpret the appropriate laboratory workup, recommend/choose the appropriate management or pharmacological treatment and summarize the complications of the diseases and disorders noted.

4.15.9. Be able to approach the patient with nasal discharge and differentiate between infectious etiologies compared to noninfectious etiologies.

4.15.10. Be able to distinguish between and choose appropriate therapies for anterior epistaxis and posterior epistaxis.

4.15.11. Compare and contrast the clinical presentation of croup and upper bronchitis and establish/choose emergency principles to the management of each.

4.15.12. Describe and explain the types of inner ear disease and how they are evaluated and treated including: tinnitus, meniere’s disease, acoustic neuroma, and vertigo.

4.15.13. Identify the indications and benefits of, an audiology evaluation, and demonstrate the ability to prescribe an appropriate referral when necessary.

4.15.14. Demonstrate the ability to properly diagnose, treat, and refer when necessary conditions of the ear including: barotraumas, cerumen impaction, tympanic membrane perforation, and foreign bodies.
4.15.15. Define and determine warning signs of the most common tumors and cancers found in the ENT system including: cervical/auricular/parotid lymphadenopathy, thyroid Mass, squamous cell carcinomas of the mouth, skin cancers of the head and face, and salivary gland tumors.

4.15.16. Differentiate the following ENT emergent problems and describe the treatment for each: fractures, abscesses, foreign body, epistaxis, and ENT injuries.

4.15.17. Describe and discuss the adverse effects of tobacco on the HEENT system.

4.15.18. Describe diagnostic imaging including radiographs, CT, MRI procedures in ENT disease.

4.15.19. Describe the specialty of speech pathology and explain when patients should be referred.

4.15.20. Describe and discuss the physiology of speech.

4.15.21. Recognize and inspect the anatomical landmarks related to the external, inner and middle ear.

4.16. Pulminology Module Objectives:
4.16.1. Describe the physiologic function of the pulmonary system
4.16.2. State the symptoms and signs of pulmonary disease.
4.16.3. Properly identify metabolic and respiratory acidosis and alkalosis when given the results of an arterial blood gas.
4.16.4. Diagnose restrictive and obstructive lung disease when given the results of a pulmonary function study. The student will also be able to define the severity of the obstruction or restriction.
4.16.5. Identify and list the signs, symptoms, risk factors, genetic involvement, prevention, diagnostic workup, prognosis, and treatment of the following pulmonary diseases: asthma, COPD, acute respiratory failure, bronchiectasis, cystic fibrosis, acute bronchitis, bronchiolitis, pneumonia, tuberculosis, pulmonary embolism, pulmonary hypertension, lung cancer, sarcoidosis, interstitial lung disease, autoimmune diseases, sarcoidosis, pneumoconiosis, TB, and diseases of the pleura.
4.16.6. Describe a system for smoking cessation.
4.16.7. Describe the workup of a patient with cough, hemoptysis, and/or SOB.
4.16.8. When given a chest x-ray, describe a proper technique in evaluating the film and demonstrate the ability to diagnose lung disorders based on the chest x-ray.
4.16.9. List the common laboratory tests/procedures used to evaluate the respiratory system and their general indications as well as the type of information obtained from each.
4.16.10. Define the following terms and recognize their significance in terms of normal and abnormal pulmonary function: lung compliance, stiffness, and elasticity, airway resistance, V/Q ratio, shunting, COPD, and restrictive pulmonary disease.
4.16.11. Define and revise the following pulmonary function terms and value the effects of restrictive and obstructive pulmonary disease upon them: FEV₁ and FEV₂, V.C. and FVC, R.V. and FRC, TLC, and ABG’s.
4.16.12. Identify and differentiate the associated physical exam findings and environmental stressor and choose appropriate treatment regimens for a patient with acute and chronic asthma, wheezing, and bronchospasm.
4.16.13. Quantify and measure the level of respiratory distress with asthma through:
   4.16.13.1. PFT’s, especially peak flow measurement,
   4.16.13.2. ABG’s, especially O₂ and CO₂ saturation.
4.16.14. Evaluate the patient’s response to treatment according to history, physical examination and PFT results.
4.16.15. Rank the important causes of chronic cough and hemoptysis.
4.16.16. Differentiate between localized pulmonary infiltrate, pulmonary cavitation and solid pulmonary lesion and specify several common causes of each.

4.16.17. Discuss the statistical incidence, mechanisms for spread, areas of common metastasis, related complications, prognosis, and basic management plans of different types of lung cancer.

4.16.18. Be able to diagnose and urgently refer a patient who presents with a pneumothorax.

4.16.19. Use laboratory results and radiographic findings to distinguish between different types of pneumonia.

4.16.20. Specify the populations most at risk for the different types of pneumonia.

4.16.21. Explain the appropriate use of tuberculin skin testing in terms of agents used, indications, techniques and interpretation.

4.17. **Allergy and Immunology Module Objectives:**

4.17.1. Define the physiology and pathophysiology of allergic response and immunologic dysfunction.

4.17.2. Identify the different hypersensitivity reactions and distinguish which one a patient may have based on the history and physical examination.

4.17.3. Name the diagnostic and lab tests for allergies and immunologic problems, and interpret the results including: CBC, nasal smear, RAST test, immunoglobulins, ABO/RH typing, and HLA tissue typing.

4.17.4. Define the essentials of diagnosis and treatment of allergic conditions of the nose, eyes, throat, mouth, skin, and physical allergies, including, but not limited to, the following disorders: allergic rhinitis, allergic conjunctivitis, anaphylaxis, urticaria, physical allergies, drug hypersensitivity, food allergies, serum sickness and asthma.

4.17.5. Define and differentiate autoimmune and immunodeficiency disease in general terms from common primary care diagnoses and determine how a patient should be tested or when referred to a specialist.

4.17.6. Evaluate and present case studies of patients that have allergic and immunologic diseases, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.17.7. Define the immunotherapy of environmental and drug and food allergies and the management in primary care.

4.17.8. Identify and define the pharmacologic and non-pharmacologic therapeutics of designated allergic and immunologic diseases.

4.17.9. Evaluate a patient with an allergic problem and formulate a treatment plan in connection with the ENT and Ophthalmology module in a mock patient format.

4.17.10. Define, distinguish, and interpret laboratory findings in relation to allergy and immunology.

4.18. **Dermatology Module Objectives:**

4.18.1. Describe a skin eruption or lesion, using appropriate dermatologic terminology.

4.18.2. Describe appropriate uses of common dermatologic preparations (such as creams and ointments).

4.18.3. Have an understanding of the typical presentation and basics of treatment for dermatologic conditions that present in primary care.

4.18.4. Recognize common skin disorders such as acne vulgaris, viral cutaneous eruptions, psoriasis, dermatitis, hyperkeratotic lesions, eczema, and lichen planus.

4.18.5. Describe the etiological factors and clinical features of skin cancer, benign and malignant melanotic skin lesions.
4.18.6. Describe the features of uncommon but potentially life-threatening dermatologic conditions such as: Erythema multiforme, pemphigus, pemphigoid, lupus erythematosus and scleroderma.

4.18.7. Understand the principles of treatment available for skin disease.

4.18.8. Recognize the features of skin lesions that suggest possible malignancy.

4.18.9. Be able to counsel patients in strategies for prevention of skin cancer.

4.18.10. Define the following terms with regards to describing dermatologic conditions and apply each definition appropriately when presented a dermatologic condition: primary lesion, macule, papule, plaque, patch, nodule, pustule, vesicle, bulla, wheal, cyst, tumor, telangiectasia, secondary lesion, scale, erosion, ulcer, fissure, crust, erythema, excoriation, atrophy, scar, edema, hyperpigmentation, hypopigmentation, depigmentation, lichenification, hyperkeratosis, symmetrical vs. asymmetrical distribution, sun exposed areas, disseminated, grouped, smooth, scaly, keratous, exudative, friable, crusted, warty, umbilicated, soft, firm, superficial vs. deep, color, well-circumscribed, poorly defined, active or raised border, round, oval, irregular, pedunculated, annular, linear, serpiginous, and reticular.

4.18.11. Elicit an appropriate history from a dermatologic patient including: time since onset, duration of rash or lesion, relationship to physical agents, itching or pain, size or color changes, past history, family history, social history, and previous treatment.

4.18.12. Describe the current status of sunscreens and patient education regarding UVA and UVB.

4.18.13. Describe the following special signs and tests related to dermatologic conditions: derrier sign, Auspitz sign, Nikolsky sign, Koebner phenomenon, patch test, and diascopy.

4.18.14. Describe and discuss the components to successful use of topical medicines including: correct diagnosis, type of lesion being treated, the medication, the vehicle used to deliver the medication, and the method used to apply the medication.

4.18.15. For each of the following, describe characteristics and when it would be used: lotion; cream; gel; ointment; emulsion; paste; wet dressing; bath soaks; powder; fixed.

4.18.16. Describe the diagnosis and treatment of the following papulosquamous diseases: seborrhea, psoriasis, pityriasis rosea, miliaria, and lichen planus.

4.18.17. Describe the diagnosis and treatment of the following vesiculobullosive diseases: pemphigoid, pemphigus vulgaris, dyshidrotic eczema, erythema multiforme, dermatitis herpetiformis, and epidermolysis bullosa.

4.18.18. Describe the diagnosis and treatment of the following dermatitis conditions: contact dermatitis, eczema, generalized exfoliative dermatitis, nummular dermatitis, stasis dermatitis.

4.18.19. Describe the diagnosis and treatment of viral exanthems, macular, and urticarial eruptions.

4.18.20. Describe the diagnosis and treatment of the following nodular diseases: erythema nodosum, granuloma annulare, and sarcoidosis.

4.18.21. Describe the diagnosis and treatment of the following pruritic conditions: scabies, lichen simplex chronicus, and pediculosis.

4.18.22. Describe the diagnosis and treatment of the following cutaneous infections: impetigo, erysipelas, cellulitis, lymphangitis, folliculitis, furuncles, carbuncles, and erythrasma.

4.18.23. Describe the diagnosis and treatment of the following viral infections: herpes simplex, herpes zoster, varicella, verruca, molluscum contagiosum.

4.18.24. Describe the diagnosis and treatment of the varied fungal infections of tinea and onychomycosis.

4.18.25. Describe the diagnosis and treatment of the following: acne, rosacea, hyperhidrosis, pityriasis alba, and vitiligo.
4.18.26. Describe the diagnosis and treatment of the following benign and premalignant skin conditions: hidradenitis suppurativa, pyogenic granuloma, corns and calluses, epidermoid cyst, acrochordons, xanthelasma, seborrheic keratosis, lipoma, dermatofibroma, keloid, hemangioma, bowen’s disease, and actinic keratosis.

4.18.27. Describe the diagnosis and treatment of the following malignant disorders: Basal cell carcinoma, Squamous cell carcinoma, Melanoma, Kaposi’s sarcoma, and Cutaneous lymphoma.

4.18.28. Describe the following nail problems: Paronychia, Ingrown nail, Subungual hematoma, Leukonychia, Habit-Tic deformity, Onycholysis, Koilonychia, Beau lines, and Mucous cysts.

4.19. Genetics Module:
4.19.1. Explain the importance of disease prediction and its implications for disease prevention.
4.19.2. Possess a basic understanding of DNA and Heredity.
4.19.3. Understand how genes are organized into chromosomes, how chromosomes replicate in mitosis and meiosis, and how they are transmitted from parent to child.
4.19.4. Know the patterns of inheritance characteristic of autosomal dominant, autosomal recessive, X-linked dominant and X-linked recessive traits.
4.19.5. Obtain a comprehensive family medical history and construct an appropriate medical pedigree.
4.19.6. Recognize patterns of inheritance and other signs suggestive of genetic disease in the family history.
4.19.7. Elicit a comprehensive family medical history, construct an appropriate medical pedigree, and recognize patterns of inheritance and other signs suggestive of genetic disease in the family history.
4.19.8. Describe the clinical manifestations of common mendelian diseases.
4.19.9. Understand the basic principles of inborn errors of metabolism and of pharmacogenetic variations and their general clinical manifestations.
4.19.10. Understand how knowledge of a patient’s genotype can be used to develop a more effective approach to health maintenance, disease prevention, disease diagnosis, and treatment for that particular individual.
4.19.11. Understand how constitutional and acquired genetic alterations can lead to the development of malignant neoplasms and how identification of these changes can be used in the diagnosis, management and prevention of malignancy.
4.19.14. Communicate genetic information in a clear and non-directive manner that is suitable for individuals of different educational, socio-economic, ethnic and cultural backgrounds.
4.19.15. Understand how legal and ethical issues related to genetics affect general medical practice.

4.20. Gastrointestinal Module:
4.20.1. Specify the common tests and procedures used in the evaluation of GI disease.
4.20.2. Specify the common diseases of the esophagus, stomach, liver, gallbladder, pancreas and intestines.
4.20.3. Form a differential diagnosis for abdominal pain.
4.20.4. Integrate historical clues including onset, character and severity to rule out serious pathology.
4.20.5. Grade physical exam findings of appearance and location of the pain to rule out serious pathology.
4.20.6. Recommend, collect and measure lab data including UA, CBC, electrolytes, amylase and lipase to rule out serious pathology.

4.20.7. Identify the etiologies, describe the common presentations, diagnostic workup, preventative measures, appropriate physical exam, genetic component, prognosis, risk factors, complications and recommend appropriate management for the following GI disorders: esophagitis, hiatal hernia, peptic ulcer disease, gall bladder disease, diverticulosis, diverticulitis, dysphagia, Malabsorption syndromes, Mallory-Weiss syndrome, Peutz Jeghers syndrome, esophageal varices, diarrhea, pancreatitis, gastroenteritis, IBD, IBS, Crohn's disease, appendicitis, ulcerative colitis, GERD, hiatal hernia, motility disorders, GI bleed, proctitis, pancreatitis, Zollinger-Ellison syndrome, bezoars, GI neoplasms, cholecystitis, choledolithiasis, mesenteric ischemia, anorectal disorders, hemorrhoids, anal fissures, proctitis, pruritus ani, rectal prolapse, anal fistulas, chronic liver disease, hepatitis, and gallbladder disease.

4.20.8. Recognize signs and symptoms and select treatment for perforated viscus including:
- rigidity
- rebound
- increased WBC.

4.20.9. Select and interpret laboratory studies for the GI diseases noted.

4.20.10. For colorectal cancer, specify its incidence, anatomical distribution, and staging, areas of metastasis, etiology, clinical manifestations, workup, findings, screening and treatment.

4.20.11. Given a patient with altered bowel movement irregularity, distinguish between the signs and symptoms of inflammatory bowel disease and irritable bowel syndrome.

4.20.12. Identify and differentiate between various etiologies for diarrhea including:
- Salmonellosis
- Shigellosis
- Pseudomembranous enterocolitis
- Campylobacter jejuni
- Enteric pathogens

4.20.13. After identification of the underlying etiology, select first-line treatment regimens for the different types of diarrhea.

4.20.14. Given a patient whose diarrhea has resolved and who wishes to return to a normal diet, the student will select a dietary regimen which will allow the intestinal flora to return to normal.

4.20.15. Given a patient at risk for benign/malignant lesions of the GI tract, the student will specify those risks as elicited through history.

4.20.16. Distinguish between hemoccult, sigmoidoscopy, and air contrast barium enema as screening tools according to:
- cost
- sensitivity
- specificity.

4.20.17. Differentiate the difference which intervention makes in early vs. late Duke stage colon CA.

4.20.18. Specify risks signs and symptoms for CA of the GI tract and organs.

4.20.19. Identify through history possible risk for cirrhosis such as:
- ETOH
- hepatitis
- other ingested toxins.

4.20.20. Distinguish through physical exam and laboratory results two main stages of cirrhosis.

4.20.21. Identify other signs of chronic liver disease including:
- portal hypertension
- esophageal varices
- hypoalbuminemia
- spider angioma
- gynecomastia
- jaundice.

4.20.22. Distinguish between common modes of transmission for hepatitis A, B, C and D.

4.20.23. Recognize possible acute and chronic signs and symptoms such as jaundice, liver inflammation associated with hepatitis A, B, C and D.

4.20.24. Interpret the hepatitis panels/profile to distinguish between hepatitis A, B, C and D, including acute and chronic carrier status.

4.20.25. Discuss/recommend the appropriate treatment of the above liver disorders.

4.20.26. Utilizing historical clues, the student will determine if the probable underlying cause for pancreatitis is secondary to obstructive or non-obstructive causes.
4.20.27. Develop a diagnostic plan and differential diagnosis for:
   4.20.27.1. Abdominal pain (chronic/acute)
   4.20.27.2. Nausea
   4.20.27.3. Vomiting
   4.20.27.4. Constipation
   4.20.27.5. Diarrhea
   4.20.27.6. Jaundice
4.20.28. List infections of the GI tract to include: gastroenteritis, antibiotic colitis, food poisoning, diverticulitis, and describe their symptoms and physical findings as well as appropriate treatment.
4.20.29. Select and interpret appropriate diagnostic studies of the GI and biliary systems to include x-ray, CT, MRI, fluoroscopy, endoscopy, and barium studies.
4.20.30. Evaluate and present case studies of patients that have gastrointestinal/biliary diseases, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.21. Tropical and wilderness medicine:
   4.21.1. Identify the etiologies, describe the common presentations, diagnostic workup, preventative measures, appropriate physical exam, genetic component, prognosis, risk factors, complications and recommend appropriate management of common disorders found in tropical and wilderness medicine.

5. Student Activities and Experiences (Instructional techniques)
   5.1. Case studies that provide opportunity to analyze clinical correlations
   5.2. Guided faculty Lecture
   5.3. Group discussion
   5.4. Independent reading assignments
   5.5. Integrated computer technology will be utilized to enhance learning.
   5.6. Collaborative experience will be gained through cooperative case study learning groups

6. Assessment Techniques
   6.1. End of module exams (60% of total grade)
   6.2. Clinical correlation Cooperative Group Assignments given each module (30% of total grade)
   6.3. Full attendance and participation with professional behavior (10% of total grade)

7. Grading: Modular examination will be based on classroom lectures, assignments, and textbook material. The ability to synthesize and manipulate concepts as they relate to clinical situations will be emphasized. Exams may be multiple choice, short answer, essay, practical, problem based, true and false, matching, or fill-in-the-blank. Students will refer to the academic bulletin and the PA department grading policies for requirements for progression in the PA program. Grades are based not only on exam performance but on Cooperative Group Assignments, and attendance with participation.

Course grades are calculated on a percentage basis. All final course grade percentages are rounded to the nearest integer. (XX.50% or higher is rounded up to the next higher integer. XX.49% or less is rounded down.) Final course grades are assigned according to the following academic standards:

<table>
<thead>
<tr>
<th>Didactic &amp; Research Courses</th>
<th></th>
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<tbody>
<tr>
<td>Percent Grade</td>
<td>Letter Grade</td>
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</table>
### 8. Tentative Schedule:

<table>
<thead>
<tr>
<th>Module and laboratory topics</th>
<th>Dates</th>
<th>Lecture and laboratory TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro to health care and laboratory medicine</td>
<td>Jan 15-21</td>
<td>Topics pertinent to meet the objectives for Intro to health care and laboratory medicine</td>
</tr>
<tr>
<td>Infectious Disease/Tropical Medicine</td>
<td>Jan 22-Feb 5</td>
<td>Topics pertinent to meet the objectives for Infectious Disease</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>Feb 8-17</td>
<td>Topics pertinent to meet the objectives for Otorhinolaryngology</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>Feb 18-25</td>
<td>Topics pertinent to meet the objectives for Ophthalmology</td>
</tr>
<tr>
<td>Pulminology</td>
<td>Feb26-March10</td>
<td>Topics pertinent to meet the objectives for Pulminology</td>
</tr>
<tr>
<td>Allergy and Immunology</td>
<td>March 11-26</td>
<td>Topics pertinent to meet the objectives for Allergy and Immunology</td>
</tr>
<tr>
<td>Dermatology</td>
<td>March 29-April 7</td>
<td>Topics pertinent to meet the objectives for Dermatology</td>
</tr>
<tr>
<td>Genetics</td>
<td>April 8-11</td>
<td>Topics pertinent to meet the objectives for Genetics</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>April 12-26</td>
<td>Topics pertinent to meet the objectives for Gastroenterology</td>
</tr>
<tr>
<td>April 30</td>
<td>Cumulative Final</td>
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</tbody>
</table>

### 9. Cooperative Learning Assignments:

Cooperative learning is the instructional use of small groups that allows students to work together to maximize their own and each others’ learning. The cooperative learning method uses a group study task structure with an incentive structure in which students receive a group reward for a group product. This involves a high degree of cooperation between students. Assignments will be case-based upon the module that is being completed. Grades will be based on the accuracy and the completeness of the group’s responses to the questions in each case. Each group will receive one grade for the cases (each member will receive that grade therefore, it is expected that each member contribute fully to this group assignment).

### 10. Academic Honesty Policy:

10.1. At a Christian liberal arts university, committed to the pursuit of truth and understanding, any act of academic dishonesty is especially distressing and cannot be tolerated. In general, academic dishonesty
involves the abuse and misuse of information or people to gain an undeserved academic advantage or evaluation. The common forms of academic dishonesty include:

10.2. Cheating: using deception in the taking of tests or the preparation of written work, using unauthorized materials, copying another person’s work with or without consent, or assisting another in such activities;

10.3. Lying: falsifying fabricating, or forging information n either written or spoken presentations;

10.4. Plagiarism: using the published writings, data, interpretations of ideas of another without proper documentation

10.5. Episodes of academic dishonesty are reported to the Vice President for Academic Affairs. The potential penalty for academic dishonesty includes:

10.5.1. A failing grade on a particular assignment

10.5.2. A failing grade for the entire course

10.5.3. Charges against the student with the appropriate discipline body

11. ADA Statement: In accordance with Americans with Disabilities Act, any student in this class who has a documented learning disability will be provided with reasonable accommodations designed to meet his/her needs. Before any such assistance can occur, it is the responsibility of the student to see that documentation is on file with Academic Affairs. If you have documented special needs you must make them known to the instructor prior to the third week of class.

12. Emergency Contact: All cell phones and pagers need to remain OFF during lectures and labs, Monday through Friday. If someone needs to reach you during that time, the administrative assistant for the program will take any important phone messages.
MPAS 542
Clinical Medicine II

1. **Course Description:** The student will build upon the knowledge and skills attained in MPAS 541 to study the presentation in the following modules: cardiology, hematology, oncology, neurology, psychology, geriatrics, alternative medicine, rehabilitation, chronic care, occupational medicine, and palliative or end of life care. This is part two of a series of three courses in the study of medicine that will be taught in a modular format utilizing a combination of lecture and interactive techniques. It is designed to explore the common medical and surgical disorders encountered in general adult medicine. This will include: clinical presentation, acute care, etiology, pathophysiology, prevention, genetic involvement, diagnostic work-up, lab interpretation, appropriate referral, and management of disorders pertaining to the listed modules. Students will develop a deeper curiosity about the art and science of clinical medicine, a passion about the field of medicine, and learn the skills of self directed learning.

2. **Required Course Materials:**

3. **Optional Course Materials:**
   3.7. *Current Geriatric Diagnosis and Treatment [LANGE CURRENT Series]* by C. Landefeld

4. **Course Objectives:** Upon completion of this series of courses each student should be able to:
   4.1. Understand and reasonably discuss the clinical elements of a broad range of topics, using both cellular and holistic terms
   4.2. Evaluate resources for exploration of topics and issues pertinent to current clinical practice.
   4.3. Efficiently formulate a strategy for researching the clinical elements of topics pertinent to PA practice
   4.4. Demonstrate effective tactics for researching the underlying clinical elements of topics pertinent to PA practice
   4.5. Correctly recall or define clinical elements of topics and systems covered during this course
   4.6. Compare and contrast data and concepts of clinical elements of topics covered during this course
   4.7. Collaborate with colleagues to formulate conclusions using evidence based principles
   4.8. Build foundational knowledge and basic understanding of each of the topics listed in the syllabus
   4.9. Develop basic critical thinking skills necessary to evaluate a patient with specific signs and symptoms and formulate a differential diagnosis.
   4.10. Demonstrate an understanding of the interdisciplinary nature of medicine.
   4.11. Develop skills in teamwork necessary to function as a member of a functioning health care team.
   4.12. Develop an emerging understanding of the importance of empathy and social skills in the practice of medicine.
4.13. Be able to analyze a clinical vignette in case study format and draw conclusions.

4.14. Accomplish objectives in the following modules:

4.14.1. Cardiology Module
   4.14.1.1. Describe normal cardiac function
   4.14.1.2. Describe pathologic manifestations of cardiac disease and the electrical mechanisms of normal heart rhythm and arrhythmias.
   4.14.1.3. Discuss common manifestations of cardiac disease (i.e. dyspnea, orthopnea, edema, paroxysmal nocturnal dyspnea, diaphoresis, cyanosis, pulmonary findings with cardiac origins, and peripheral pulse findings.
   4.14.1.4. Identify heart sounds and murmurs as they related to normal and abnormal cardiac function.
   4.14.1.5. Determine when to order and how to properly interpret cardiac diagnostic tests including: Electrocardiogram, Echocardiography, Transesophageal echocardiogram, Stress echocardiography, Cardiac MRI, Cardiac catheterization, and angiography.
   4.14.1.6. Describe the following miscellaneous effects seen on ECG: Pulmonary Embolus, hyperkalemia/ hypokalemia, Digitalis effect / toxicity, hypoclaemia/ hypercalcemia, quinidine effects / toxicity, pacemakers, and heart transplant.
   4.14.1.8. Elicit cardiovascular disease risk factors, including diabetes mellitus, hypertension, hyperlipidemia, obesity, gender, family history, age, and smoking history.
   4.14.1.9. Elicit a cardiac and peripheral vascular history and demonstrate a proper physical exam including: vital sign assessment, inspection of the precordium/neck, auscultation of heart, evaluation for bruits, peripheral edema, and cyanosis (central vs. peripheral).
   4.14.1.10. Evaluate and trace through the cardiac cycle, cardiac murmurs of aortic stenosis/regurgitation, pulmonic stenosis/regurgitation, mitral stenosis/regurgitation, tricuspid stenosis/regurgitation, atrial septal defect, ventricular septal defect, and aortic coarctation, and describe the course, hemodynamic effect and typical clinical findings of these conditions
   4.14.1.11. Develop a diagnostic plan and differential diagnosis for:
       4.14.1.11.1. chest pain
       4.14.1.11.2. shortness of breath
       4.14.1.11.3. syncope
       4.14.1.11.4. new onset murmurs or bruits
       4.14.1.11.5. rhythm or conduction disturbances
       4.14.1.11.6. peripheral vascular complaints
   4.14.1.12. Perform and interpret 3 and 12 lead electrocardiogram (EKG) tracings recognizing conduction delays and disturbances, signs of acute myocardial infarction, and dysrhythmias including asystole, premature atrial contractions (PAC’s), premature ventricular contractions (PVC’s), tachycardic rhythms, atrial fibrillation/flutter, bradycardic rhythms, sinus blocks (1st
2\textsuperscript{nd} types I and II, and 3\textsuperscript{rd} degree), Wolff Parkinson White (WPW) syndrome, and bundle branch/fascicular blocks.

4.14.1.13. Select and interpret laboratory testing appropriate to evaluation of cardiac disease including lipid profiles (LDL, VLDL, HDL, triglycerides, total cholesterol), CRP, BNP, and acute cardiac markers (CPK, CK-MB, troponin)


4.14.1.15. Provide patient education regarding cardiovascular health promotion and disease prevention including diet, exercise, smoking cessation and age appropriate screening exams.

4.14.1.16. Combine historical, physical exam findings and ancillary testing to formulate an appropriate differential diagnosis/treatment plan and disposition of mentioned cardiac conditions.

4.14.1.17. Contrast between and select appropriate cardiac pharmacotherapeutic interventions.

4.14.1.18. Evaluate and present case studies of patients with cardiovascular disorders, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plan.

4.14.2. Hematology and Oncology Module:


4.14.2.2. Explain blood transfusion and be familiar with data regarding the need and availability of blood, regulations covering the collection, storage, and transportation of blood and components, safety issues, and public perception.

4.14.2.3. List the indications for the transfusion of blood and its components.

4.14.2.4. Identify tests required prior to transfusion.

4.14.2.5. Explain the different blood types and describe potential blood transfusion reactions and complications due to ABO and RH incompatibilities.

4.14.2.6. Describe the morphological characteristics of the RBCs in each of the anemic disorders.


4.14.2.8. Describe and discuss cancer treatments, including indications, side effects, and complications.

4.14.2.9. Demonstrate understanding of how tumor size and tumor markers are used to evaluate the effectiveness of treatment.

4.14.2.10. Describe and discuss current cancer screening and prevention recommendations, staging, and general management of common cancers:

4.14.2.11. Describe and discuss the basics of oncologic pain management. Include an assessment of treatment effectiveness.
4.14.2.12. Evaluate and present case studies of patients with hematologic and oncologic disorders, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.14.2.13. Discuss the incidence of cancer in the US.


4.14.2.15. Define the following oncologic disorders and discuss etiology, common presentations, diagnostic workup, diagnosis, staging, laboratory findings, prognosis, complications, and treatment: multiple myeloma, ALL, AML, CLL, CML, Hodgkin’s Disease and Non-Hodgkin’s Lymphoma.

4.14.3. Neurology Module:


4.14.3.2. Stroke: Define stroke, rank its relative incidence as a major cause of death, specify diseases commonly associated with stroke, differentiate between TIA, reversible ischemic neurological deficit, progressive stroke and completed stroke. For the different types of strokes, specify their more frequent etiologies, diagnostic workup, prevention, recommended treatment, and distinguish their common clinical manifestations. Rate the risk for thromboembolic disease through PMH, (i.e., history of rheumatic heart disease, valve replacement), PE (murmur 2º to valvular disease, irregular heart rate 2º to atrial fibrillation, carotid bruit, etc.) and lab studies (EKG - atrial fibrillation; echocardiography - valvular disease; carotid angiography). Distinguish signs and symptoms of thromboembolic disease complications of the following systems: peripheral vascular, neurological, ophthalmic, and pulmonary. Choose and explain the respective tests for the intrinsic and extrinsic coagulation pathways.

4.14.3.3. Seizure Disorders: Identify general potential etiologies for the disordered electrical activity of the cerebral cortex. Distinguish and interpret the differences in presentation between different seizures. Recommend and specify the currently accepted medications used in seizure therapy.

4.14.3.4. Demyelinating Disorders: Rank the most common age and geographic background for individuals first diagnosed with multiple sclerosis (MS). Integrate the ocular, bladder and peripheral neuropathic signs of MS. Order and interpret diagnostic tests and discuss the management of MS.

4.14.3.5. CNS Infections: Distinguish between meningitis and encephalitis according to general location of infection. Select the most common groups of viruses and bacteria which are associated with meningitis. Identify historical and physical exam findings associated with meningitis and encephalitis. Specify the contraindications to the use of lumbar puncture as identified in the history and physical exam. Utilize history, physical exam and combined CSF and CT findings to diagnose CNS infections. Discuss/recommend the treatment of meningitis and encephalitis.

4.14.3.7. Ill-Defined Neurologic Presentations:
   4.14.3.7.1.1. Differentiate vertigo and benign positional vertigo.
   4.14.3.7.1.2. Distinguish vertigo from dizziness.
   4.14.3.7.1.3. Distinguish and list the characteristics of central and peripheral vertigo.
   4.14.3.7.1.4. Discuss/debate/recommend the treatment for vertigo.
   4.14.3.7.1.5. Distinguish and reason the etiology of weakness and distinguish between upper motor neuron disorders, lower motor neuron disorders, nerve root and peripheral nerve disorders and muscle disease.
   4.14.3.7.1.6. Discuss Tics and Tourette's syndrome including their manifestations, etiology and therapy.

4.14.3.8. Headache And Facial Pain: Organize the different classifications, common precipitating factors, presenting symptoms, diagnostic workup, exam findings, laboratory findings, and treatment options for headache and facial pain.

4.14.3.9. CNS Trauma: Discuss the role of serial neurologic exams in the evaluation of CNS injury. Specify the types of brain and spinal injuries and the respective etiologies. Discuss the clinical presentation, diagnostic workup, potential complications, and treatment of patients with suspected CNS trauma. Differentiate between the following terms: epidural/subdural/parenchymal hematoma, concussion, cerebral contusion, mass lesion, basilar skull fracture, cerebral hemorrhage, coup/contrecoup.

4.14.3.10. CNS Tumors: Specify the different classifications of intracranial and spinal space occupying lesions. Specify and interpret the clinical presentation of CNS tumors, including generalized and focal features. Specify and select the methods used in the diagnosis and treatment of CNS tumors. Discuss/debate the prognosis of CNS tumors.

4.14.3.11. Evaluate and present case studies of patients with neurologic conditions, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plan.

4.14.4. Psychiatry Module
   4.14.4.1. Discuss the clinical use of psychiatric assessment tools, pharmacotherapy, psychotherapy and counseling, and the DSM-IV.
   4.14.4.2. Define the following addictions with respect to their epidemiology, etiologies, clinical signs and symptoms, physical exam findings, diagnosis, treatment, and prognosis: Alcohol, Opiates, Drugs, and Tobacco.
   4.14.4.3. Define the following with respect to their epidemiology, etiologies, clinical signs and symptoms, physical exam findings, diagnosis, treatment, and prognosis: Situational anxiety disorder, Generalized anxiety disorder, Obsessive compulsive disorder, Panic, Phobia, Dissociative disorder, PTSD, Somatoform disorder, Conversion disorder, Somatization disorder, Hypochondriasis, Factitious disorder, child and adolescent behavioral and emotional disturbances, Chronic pain syndromes, ADHD, Psychosexual disorders.
Personality disorders, Mood disorders, Depression, Bipolar disorder, Sleep disorders, Delirium, Dementia, and cognitive disorders.

4.14.4.4. Describe and discuss the components of a mental status exam and able to conduct the Mini-Folstein Mental Status Exam.

4.14.4.5. Discuss and describe state of the art predictors of suicidal/homicidal risk and able to conduct an interview to assess these risks in an individual patient.

4.14.4.6. Describe the multiaxial diagnosis and the major diagnostic categories within DSM-IV.


4.14.4.8. Describe the psychosocial impact of chronic illness and death on patients and their families.

4.14.5. Alternative and Occupational Medicine Module

4.14.5.1. Discuss the training and role of occupational medicine practitioners.

4.14.5.2. Review and describe each of the following: OSHA, NIOSH, DOT, NFPA, MRO, and MSDS.

4.14.5.3. Review and discuss a case study involving an occupational medicine patient.

4.14.5.4. Counsel patients about potential hazards in the community and workplace.

4.14.5.5. Take an occupational and environmental screening history when the patient's complaints or physical findings suggest an occupational or environmental health hazard.


4.14.5.7. Describe the ethical, legal, and regulatory concerns specific to occupational and environmental medicine.

4.14.5.8. Demonstrate an understanding of relevant epidemiological, toxicological, and exposure factors; provide understandable information about risk reduction strategies; and discuss environmental risks in ways that exhibit sensitivity to patient’s health beliefs and concerns.

4.14.5.9. Identify the informational, clinical, and other resources available to help address patient and community environmental health problems and concerns.

4.14.5.10. Define and discuss the following: herbal remedies, Christian vs. non Christian approaches to holistic health, clinically proven vs. “quack” forms of alternative therapy, truths and fallacies about supernatural healing, and ancient medical lore.

4.14.5.11. Discuss and describe different forms of alternative medicine and how they may impact patient health.

4.14.6. Geriatric Medicine Module


4.14.6.2. Effectively question and critique our culture's tendency towards ageism.

4.14.6.3. Recognize the importance and growth of geriatrics as a relatively “young” specialty.

4.14.6.4. Understand the value of effective communication with elderly patients.

4.14.6.5. Describe the importance of demonstrating empathic concern toward the elderly while also valuing their dignity and autonomy.

4.14.6.6. Produce a comprehensive geriatric evaluation that includes a medical and functional component.

4.14.6.7. Differentiate dementia from delirium using a Folstein mini mental status exam.


4.14.6.11. Understand the normal aging process versus pathologic senescence.
4.14.6.13. Recognize those physiologic and anatomic changes that occur in the aging process, being able to differentiate between those findings that are considered normal in aging and those that are pathologic.
4.14.6.14. Demonstrate competence in obtaining a history and appropriate physical exam in this population.
4.14.6.15. Define the appropriate screening exams, both physical and laboratory/diagnostic, necessary to maintain the elder patients health and well being in terms of health promotion and disease/injury prevention.
4.14.6.16. Recognize common pharmacotherapeutic issues in the treatment of the elderly including medication side effect profiles in the aged, polypharmacy, and weighing of treatment priorities vs. risks of medication therapies.
4.14.6.17. Identify and evaluate for those complaints common in the elderly including: Incontinence, Dementia, Delirium, Depression, Trauma secondary to falls and gait disturbances, Nutritional and dietary issues in the aged, Elder abuse, and care giver issues.
4.14.6.18. Describe those medicolegal concepts surrounding aging and end of life issues including powers of attorney, living wills, and advance directives including DNR orders.

4.14.7. Rehab, Chronic care, Occupational medicine, and Palliative Care
4.14.7.2. Explain common issues and clinical decisions encountered in the above listed settings and demonstrate critical thinking skills to make decisions regarding patient care in these settings.
4.14.7.3. Describe the health care team for rehabilitative medicine and the role of allied health professionals to include physical therapists, speech and language pathologists, prosthetists, orthotists, occupational therapists, etc.
4.14.7.4. Describe various physical medicine modalities including diathermy, ultrasound, electrical stimulation, etc.
4.14.7.5. Diagnose and manage the common musculoskeletal disorders including fibromyalgia, myofascial pain, repetitive motion disorders, chronic pain, and overuse syndromes.
4.14.7.6. Recognize and prevent the complications of prolonged bedrest including contractures, pressure sores, DVT, osteoporosis, deconditioning, etc.
4.14.7.7. Describe the differences among impairment, disability, and handicap.
4.14.7.8. Describe the types of and indications for various therapeutic exercises including aerobic exercise.
4.14.7.9. Describe the indications for various assistive devices to reduce disability including wheelchairs, prosthetics, orthotics, and others.
4.14.7.11. Define “disability” and rehabilitative medicine and be able to apply its principles to various situations as appropriate.
4.14.7.12. Differentiate disease, impairment, disability and handicap and be able to apply rehabilitative principles as necessary.
4.14.7.14. Understand and be able to utilize the individuals involved in the rehabilitation team.
4.14.7.15. Define the different care settings utilized for rehabilitation and be able to decipher which is most appropriate for which conditions.
4.14.7.17. Differentiate between the acute care phase, rehabilitative phase and chronic phase of various conditions and the various therapeutic measures used in each.

5. **Student Activities and Experiences (Instructional techniques)**
   5.1. Case studies that provide opportunity to analyze clinical correlations
   5.2. Guided faculty Lecture
   5.3. Group discussion
   5.4. Independent reading assignments
   5.5. Integrated computer technology will be utilized to enhance learning.
   5.6. Collaborative experience will be gained through cooperative case study learning groups

6. **Assessment Techniques**
   6.1. End of module exams (60% of total grade)
   6.2. Clinical correlation Cooperative Group Assignments given each module (30% of total grade)
   6.3. Full attendance and participation with professional behavior (10% of total grade)

7. **Grading**: Examinations will be based on classroom lectures, assignments, and textbook material. The ability to synthesize and manipulate concepts as they relate to clinical situations will be emphasized. Exams may be multiple choice, short answer, essay, practical, problem based, true and false, matching, or fill-in-the-blank. Students will refer to the academic bulletin and the PA department grading policies for requirements for progression in the PA program. Grades are based not only on exam performance but on Cooperative Group Assignments, and attendance with participation.

Course grades are calculated on a percentage basis. All final course grade percentages are rounded to the nearest integer. *(XX.50% or higher is rounded up to the next higher integer. XX.49% or less is rounded down.)* Final course grades are assigned according to the following academic standards:

<table>
<thead>
<tr>
<th>Didactic &amp; Research Courses</th>
<th>Percent Grade</th>
<th>Letter Grade</th>
<th>Grade Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90 – 100</td>
<td>A</td>
<td>student has exceeded expectations</td>
</tr>
<tr>
<td></td>
<td>80 – 89</td>
<td>B</td>
<td>student has met expectations</td>
</tr>
<tr>
<td></td>
<td>70-79</td>
<td>C</td>
<td>student is below expectations</td>
</tr>
<tr>
<td></td>
<td>Less than 70</td>
<td>F</td>
<td>student has failed expectations</td>
</tr>
</tbody>
</table>

An “I” may be temporarily awarded to individuals who fail to complete course requirements within the defined time. A final grade of “F” in any PA course is a non-passing grade and results in automatic and immediate dismissal from the PA Program.

8. **Tentative Schedule**:

<table>
<thead>
<tr>
<th>Module</th>
<th>Dates</th>
<th>Lecture and small group discussion TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>May 10-June 4</td>
<td>Cardiology topics and case studies.</td>
</tr>
<tr>
<td>Hematology</td>
<td>June 7-15</td>
<td>Hematology topics and case studies</td>
</tr>
</tbody>
</table>
9. **Cooperative Learning Assignments**: Cooperative learning is the instructional use of small groups that allows students to work together to maximize their own and each others’ learning. The cooperative learning method uses a group study task structure with an incentive structure in which students receive a group reward for a group product. This involves a high degree of cooperation between students. Assignments will be case-based upon the module that is being completed. Grades will be based on the accuracy and the completeness of the group’s responses to the questions in each case. Each group will receive one grade for the cases (each member will receive that grade therefore, it is expected that each member contribute fully to this group assignment).

10. **Academic Honesty Policy**: At a Christian liberal arts university, committed to the pursuit of truth and understanding, any act of academic dishonesty is especially distressing and cannot be tolerated. In general, academic dishonesty involves the abuse and misuse of information or people to gain an undeserved academic advantage or evaluation. The common forms of academic dishonesty include:

10.1. **Cheating**: using deception in the taking of tests or the preparation of written work, using unauthorized materials, copying another person’s work with or without consent, or assisting another in such activities;

10.2. **Lying**: falsifying, fabricating, or forging information in either written or spoken presentations;

10.3. **Plagiarism**: using the published writings, data, interpretations of ideas of another without proper documentation

10.4. Episodes of academic dishonesty are reported to the Vice President for Academic Affairs. The potential penalty for academic dishonesty includes:

10.4.1. A failing grade on a particular assignment

10.4.2. A failing grade for the entire course

10.4.3. Charges against the student with the appropriate discipline body

11. **ADA Statement**: In accordance with Americans with Disabilities Act, any student in this class who has a documented learning disability will be provided with reasonable accommodations designed to meet his/her needs. Before any such assistance can occur, it is the responsibility of the student to see that documentation is on file with Academic Affairs. If you have documented special needs you must make them known to the instructor prior to the third week of class.

12. **Emergency Contact**: All cell phones and pagers need to remain OFF during lectures and labs, Monday through Friday. If someone needs to reach you during that time, the administrative assistant for the program will take any important phone messages.
MPAS 543
Clinical Medicine III

1. **Course Description:** The student will build upon the knowledge and skills attained in MPAS 542 to study the following modules: endocrine, nutritional disorders, nephrology, urology, men’s health, women’s health, gynecology, obstetrics, pediatrics, rheumatology, and orthopedics. This is part three of a series of three courses in the study of medicine that will be taught in a modular format utilizing a combination of lecture and interactive techniques. It is designed to explore the common medical and surgical disorders encountered in general adult medicine. This will include: clinical presentation, acute care, etiology, pathophysiology, prevention, genetic involvement, diagnostic work-up, lab interpretation, appropriate referral, and management of disorders pertaining to the listed modules. Students will develop a deeper curiosity about the art and science of clinical medicine, a passion about the field of medicine, and perfect the skills of self directed learning.

2. **Required Course Materials:**

3. **Optional Course Materials:**
   3.5. *Harrison’s Principles of Internal Medicine*, McGraw Hill
   3.6. *Current Diagnosis and Treatment Pediatrics*: (LANGE CURRENT Series), William Hay
   3.7. *CURRENT Obstetrics And Gynecologic Diagnosis And Treatment* (C LANGE CURRENT Series), Alan DeCherney

4. **Course Objectives:** Upon completion of this series of courses each student should be able to:
   4.1. Understand and reasonably discuss the clinical elements of a broad range of topics, using both cellular and holistic terms
   4.2. Evaluate resources for exploration of topics and issues pertinent to current clinical practice.
   4.3. Efficiently formulate a strategy for researching the clinical elements of topics pertinent to PA practice
   4.4. Demonstrate effective tactics for researching the underlying clinical elements of topics pertinent to PA practice
   4.5. Correctly recall or define clinical elements of topics and systems covered during this course
   4.6. Compare and contrast data and concepts of clinical elements of topics covered during this course
   4.7. Collaborate with colleagues to formulate conclusions using evidence based principles
   4.8. Build foundational knowledge and basic understanding of each of the topics listed in the syllabus
   4.9. Develop basic critical thinking skills necessary to evaluate a patient with specific signs and symptoms and formulate a differential diagnosis.
   4.10. Demonstrate an understanding of the interdisciplinary nature of medicine.
   4.11. Develop skills in teamwork necessary to function as a member of a functioning health care team.
4.12. Develop an emerging understanding of the importance of empathy and social skills in the practice of medicine.

4.13. Be able to analyze a clinical vignette in case study format and draw conclusions.

4.14. Accomplish objectives in the following modules:

4.15. Endocrinology Module:

4.15.1. Differentiate and describe the etiology, presenting symptoms, diagnostic workup, laboratory findings, patient education, common complications, and disease management for the following endocrine conditions: hypopituitarism, diabetes insipidus, diabetes mellitus Type I and Type II, insulin resistance, metabolic syndrome, hypoglycemia, hyperglycemia, acromegaly, gigantism, dwarfism, adrenal disorders, pheochromocytoma, hyperprolactinemia, thyroid cancer, endemic goiter, hypothyroidism, myxedema, hyperthyroidism, thyroiditis, thyroid nodule, pituitary adenomas, hypoparathyroidism, pseudohypoparathyroidism, hyperparathyroidism, osteoporosis, osteomalacia, Paget's disease of bone, adrenocortical insufficiency, islet cell tumors, Cushing's syndrome, Addison's disease, hirsutism, hypogonadism, hypercalcemia, hypocalcemia, and hyperaldosteronism.

4.15.2. Combine historical, physical exam findings and ancillary testing to formulate an appropriate differential diagnosis/treatment plan and disposition of the previous conditions.

4.15.3. Contrast between and select appropriate pharmacotherapeutic intervention as relates to the previous conditions listed.

4.15.4. Recommend and debate the appropriate diagnostic protocol to be used for an individual with a thyroid nodule found on physical examination.

4.15.5. Distinguish and differentiate between toxic multinodular goiter, non-toxic multinodular goiter, Hashimoto's thyroiditis, subacute thyroiditis and Grave's disease in terms of etiology, associated signs and symptoms, and treatment.

4.15.6. Review and Distinguish between mineralocorticoids (e.g., aldosterone), glucocorticoids (e.g., cortisol), androgens (e.g., estrogen, progesterone), and catecholamines (e.g., epinephrine) in terms of synthesis site and general action.

4.15.7. Distinguish the clinical manifestations of overt diabetes, ketoacidosis and insulin reaction.

4.15.8. Realize and specify the effects of insulin deficiency on CHO, protein and fat metabolism.

4.15.9. Measure and determine the onset, peak action and duration (in hours) of regular, lente and NPH insulin.

4.15.10. Choose and judge appropriate management of a newly diagnosed IDDM patient to include insulin therapy and dietary principles.

4.15.11. Recommend the appropriate therapeutic principles for a newly diagnosed NIDDM patient.

4.15.12. Diagnose the Somogyi effect.

4.15.13. Select and interpret laboratory testing appropriate to the evaluation of a patient with endocrine disorders including thyroid stimulating hormone, free T3, free T4, prolactin, follicular stimulating hormone, luteinizing hormone, adrenocorticotropic hormone, growth stimulating hormone, parathyroid hormone, insulin, glucose, electrolytes, HgbA1C (hemoglobin A1C)), testosterone (total/free).

4.15.14. Develop a diagnostic plan and differential diagnosis for: Obesity, weight loss/gain, abnormal skin pigmentation, gynecomastia, galactorrhea, erectile dysfunction and decreased libido in men, cryptorchism, bone pain and pathologic fractures, and muscle cramps and tetany.

4.15.15. Explain body mass index including its calculation and potential limitations.

4.15.16. Develop counseling strategies, both pharmacologic and non-pharmacologic, to assist patients in the control of a healthy weight.
4.15.17. Evaluate and present case studies of patients endocrine disorders, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, appropriate treatment plan and patient education.

4.16. Nephrology and Nutrition Module

4.16.1. Define elements of nutritional assessment and diet with respect to their clinical significance.
4.16.2. Describe and discuss elements of commonly prescribed diets such as the ADA and AHA diets.
4.16.4. Discuss the benefits and risks from common diets such as the South Beach and Aktins’ diets.
4.16.5. Discuss the benefits and risks of commonly available nutritional supplements.
4.16.6. Discuss the treatment plan for common nutritional disorders.
4.16.7. Discuss and describe the following with respect to their etiologies, epidemiology, clinical presentation, diagnostic test findings, treatments and prognosis: disorders of sodium concentration, IgA nephropathy, disorders of potassium concentration, disorders of calcium concentration, disorders of magnesium concentration, hyperosmolar disorders, acid-base disorders, Respiratory acidosis / alkalois, metabolic acidosis / alkalosis, normal anion gap acidosis, increased and decreased anion gap acidosis, acute renal failure, chronic renal failure, renal artery stenosis, interstitial nephritis, glomerulonephropathies, nephrotic disease in primary renal disorders, nephrotic disease from systemic disorders, pyelonephritis, nephrolithiasis, drug induced nephrotoxicity, tubulointerstitial disease, cystic diseases of kidney, UTI’s, cystitis, pyelonephritis, hypernatremia, and hyponatremia, hyperkalemia and hypokalemia, and hyperaldosteronism.

4.16.8. Identify components of the history and physical exam appropriate to the development of a differential diagnosis in the patient with renal disorder.


4.16.10. Select and interpret laboratory testing appropriate to the evaluation of a patient with renal disorder including urinalysis with microscopic examination and culture/sensitivity, specific gravity, fractional excretion of sodium, urine sodium, urine/plasma osmolality, 24 hr urine collections, glomerular filtration rate and creatinine clearance, evaluation of BUN/creatinine, performance of correction calculations in electrolyte evaluations.

4.16.11. Select and interpret the results of appropriate diagnostic imaging studies including plain radiographs, intravenous pyelogram, helical CT kidney-ureter-bladder (KUB) and ultrasound studies.


4.16.13. Explain the indications for and techniques used in dialysis.

4.16.14. Combine historical, physical exam findings and ancillary testing to formulate an appropriate differential diagnosis/treatment plan and disposition of the previous conditions.

4.16.15. Evaluate and present case studies of patient’s renal disorders, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, appropriate treatment plan and patient education.

4.16.16. Recognize pharmacologic/non-pharmacologic approaches which are used to slow the progression of renal disease, i.e., corticosteroids, BP control, BS control in DM, avoidance of nephrotoxic drugs, fluid balance, dietary changes, etc.

4.16.17. Identify conditions under which referral to a nephrologist is indicated, considering unexpected abnormal changes in BUN, creatinine, creatinine clearance, and possible acid/base disturbances (i.e., metabolic acidosis).
4.16.18. Recognize historical and physical exam findings consistent with the following components of the uremic syndrome: cardiovascular, HTN, pericarditis, bone disease, renal osteodystrophy to phosphate unbalance, hematologic, anemia, hyperlipidemia, gastrointestinal, nausea, vomiting, GI bleed, dermatologic manifestations, pruritus, nervous system effects, and neuropathies.


4.16.20. Recognize physical exam and lab findings associated with bladder and renal Ca.

4.16.21. Utilize historical data to identify potential risks for nephrolithiasis.

4.16.22. Identify physical exam (e.g., flank pain, pain unrelieved by change in body position) and laboratory findings (e.g., hematuria) which are consistent with Nephrolithiasis.

4.16.23. Identify the role of kidney biopsy in the diagnosis of acute vs. chronic and treatable vs. symptomatic disease.

4.16.24. Identify important considerations in the management of a patient with glomerular disease, including control of risks (e.g., HTN, dietary protein), monitoring of kidney function (e.g., fluid output vs. intake, labs) and when to consider initiation of dialysis.

4.16.25. Describe the natural host defenses against urinary tract infections.

4.16.26. Group the known mechanisms by which UTI’s most frequently occur and recognize the patients at highest risk.

4.16.27. Explain and integrate the appropriate use of urinalysis and colony counts, culture and sensitivities in radiology in evaluating the female and male patient.

4.16.28. Group the microorganisms that most frequently cause UTI’s.

4.16.29. Utilize historical and physical exam clues which distinguish vaginitis from UTI.

4.16.30. Choose appropriate treatment and follow up for a male with a UTI with no immediately apparent etiology.

4.16.31. Revise and select the common causes and treatments of dehydration and water excess.

4.17. Men’s and Women’s health (Urology, sex, and OBGYN) Modules

4.17.1. Sexual Function

4.17.1.1. Describe and discuss human sexual issues through the lifespan.

4.17.1.2. Describe and relate the continuum of normal sexual development in males and females.

4.17.1.3. Describe normal sexual function including the sexual response cycle, distinguishing gender differences, and the changes that take place through the lifespan.

4.17.1.4. Define and explain the following concepts: human sexuality, sexual identity, gender identity, gender role, sexual orientation, paraphilia.

4.17.1.5. Describe and explain disorders of sexual differentiation, including the diagnosis and treatment, as well as the impact of the disorder on gender identity, gender role, and sexual orientation; including: Turner syndrome, Klinefelter syndrome, Androgen insensitivity syndrome, and Congenital adrenal hyperplasia.

4.17.1.6. Identify and explain the pathophysiology, diagnosis, and treatment options for the following disorders of sexual function: Inhibited sexual desire, Arousal phase disorders, Orgasmic phase disorders, Dyspareunia, Vaginismus, Priapism, Phimosis, paraphimosis, Hypospadias, and epispadias.

4.17.1.7. Describe and explain the following paraphilias: Pedophilia, Frotteurism, Sadism, Masochism, Exhibitionism, Voyeurism, Transvestic Fetishism, and Fetishism.

4.17.1.8. Formulate and demonstrate methods for facilitation of open, factual discussions of sexual issues with patients.

4.17.1.9. Demonstrate the ability to take a thorough sexual history.

4.17.1.10. Demonstrate and explain physical examination techniques, procedures, and findings.
relevant to the STDs, and disorders of sexual function.

4.17.1.11. Identify and explain the diagnosis, treatment, and sequelae of the following sexually transmitted diseases: Herpes, types I and II, Human papilloma virus, Gonorrhea, Chlamydia, Syphilis, lymphogranuloma venereum, molluscum contagiosum, bacterial vaginosis, chancroid, granuloma inguinale, HSV, HAV, HBV, CMV, HPV, Trichomonas., E. histolytica, Giardia, albicans, pubic lice, scabies, and HIV.

4.17.1.12. Describe and explain the use and contraindications of common pharmacotherapeutic agents used in the treatment of sexual disorders, and list common medications that can affect sexual function.

4.17.1.13. Define erectile dysfunction and sexual dysfunction of males and describe the appropriate evaluation and treatment.


4.17.1.15. Discuss case studies regarding sexuality.

4.17.2. Urology

4.17.3. Explain the presentation, risk factors, evaluation, and management of each of the following: Urinary tract infection (UTI), Incontinence, Interstitial cystitis.

4.17.4. Describe and interpret laboratory tests to include: UA, PSA, Urethral swab for STD, Tests for testicular cancer including follow-up tests—FSH, LH, HCG, and Semen analysis.

4.17.5. Identify and describe the signs, symptoms, evaluation and treatment of each of the following: UTI/cystitis, prostatitis, Incontinence, BPH, Urinary outlet obstruction, Epididymitis, Orchitis, Testicular torsion, Penile disorders, Peyronie’s disease, Hernia, and Hydrocele.

4.17.6. Define and describe genital trauma and the proper evaluation and treatment.

4.17.7. Describe the following genito-urinary tumors and describe the evaluation and treatment options: Prostate cancer, Penile cancer, Testicular tumors, and Bladder tumors.

4.17.8. Discuss case studies of the male genito-urinary tract disorders.

4.17.9. Consider age-related differences in risk for prostatitis and BPH.

4.17.10. Distinguish the differences in history, physical exam, and lab findings to ascertain the presence of prostatitis or BPH.

4.17.11. Identify differences in urinary WBC concentration with initial specimen, mid-stream, and end-stream catches in a case of prostatitis.

4.17.12. Specify the historical and physical exam findings related to overflow incontinence secondary to BPH.

4.17.13. Distinguish between physical exam (i.e., hypertrophy vs. nodularity) and laboratory findings with BPH and prostatic Ca.

4.17.14. Discuss/choose the management of prostatic disease.

4.17.15. Discuss the epidemiologic data, pathophysiology, risk factors, screening tests, etiology, clinical manifestations, diagnosis, staging/grading, treatment, complications, and prognosis of genitourinary malignancies.

4.17.16. Discuss and describe the following with respect to their etiologies, epidemiology, clinical presentation, diagnostic test findings, treatments and prognosis: male infertility, benign prostatic hyperplasia, Primary tumors of the testis, prostatitis, prostatodynia, acute epididymitis, testicular torsion, hydrocele, varicocele, male and hypoapotism.

4.17.17. GYN

4.17.18. Explain the presentation, risk factors, evaluation, and management of each of the following: Pelvic pain, amenorrhea, oligomenorrhea, menorrhagia, metrorrhagia, dysmenorrheal, dysfunctional uterine bleeding (DUB), premenstrual syndrome, premenstrual dysphoric disorder.
(PMDD), benign breast diseases, breast cancer, menopause, pelvic support problems, and perimenopausal osteoporosis.

4.17.19. Describe the following procedures and interpret results pertaining to women’s health: CBC, Urinalysis, dipstick, Wet prep/KOH, Pregnancy tests, Hormonal assays: LH, FSH, Prolactin, Testosterone, Thyroid Function Test, Basal body temperature charting and interpretation, Artificial insemination.

4.17.20. Distinguish and interpret diagnostic procedures including appropriate referral for each of the following: Pelvic ultrasound, CT and MRI, Hysterosalpingogram, Mammogram, Pap smear, Culdocentesis, and Biopsies (vulvar, breast, cervical, and endometrial).

4.17.21. Explain the presentation, evaluation, and management of diseases of the female external genital tract and vagina, to include: Sexually transmitted diseases, Vaginal candidiasis, bacterial vaginosis, trichomoniasis, Dermatologic problems of the vulva, Malignancy, and Bartholin’s cysts and abscess.

4.17.22. Explain the presentation, evaluation, and management of the following disorders of the uterus, fallopian tubes, ovaries: Endometriosis/Adenomyosis, Endometritis, Leiomyoma/Fibroids, Pelvic inflammatory disease (PID), Ovarian torsion, Ovarian cysts, and polycystic ovarian syndrome (PCOS).

4.17.23. Describe presentation, evaluation methods and initial management of gynecologic cancers.


4.17.25. Evaluate and present case studies of patients that have women’s health issues, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.17.26. Understand and describe the normal mechanisms of the female menstrual cycle, and its relationship to family planning, contraception, fertility, fertilization, PMS, the climacteric, menopause and aging.

4.17.27. Analyze and summarize the abnormalities of the menstrual cycle as it relates to dysmenorrhea, amenorrhea, and abnormal bleeding.

4.17.28. Describe and summarize the etiology, pathophysiology, clinical presentation, work-up, and management of common gynecological problems, including those that are infectious, benign, and/or malignant.

4.17.29. Obstetrics

4.17.29.1. Explain healthy female fertility and explain the presentation, risk factors, evaluation, and management of infertility.

4.17.29.2. Recognize patients at risk for unintended pregnancy and explain family planning options.

4.17.29.3. Differentiate contraceptive methods in regard to side effects, efficacy, compliance issues, indications and contraindications and appropriateness for any given patient.

4.17.29.4. Describe and discuss the normal physiologic mechanisms of pregnancy, the pre-natal period, labor and delivery, and the puerperium.

4.17.29.5. Recognize and summarize the complications of pregnancy, and to be able to discuss their etiology, clinical presentation, and management.

4.17.29.6. Describe the anatomy and physiology unique to pregnant women and the neonate.

4.17.29.7. Describe diagnosis of pregnancy and appropriate care and evaluation of the pregnant patient, including pre-conception, prenatal and postpartum stages.

4.17.29.8. Select and interpret the following laboratory tests and imaging appropriate to the
evaluation of a pregnant patient, especially as pertinent to pregnancy trimester: Serum Labs; Genetic testing; Vaginal Cultures; Pap test; Colposcopy; Urinalysis; Ultrasound, AFI, biophysical profile and amniocentesis; Stress Testing; and Fetal Monitoring.

4.17.29.9. Assess risks in pregnant patients with the following maternal-fetal diseases, potential effects and appropriate treatment and management: Diabetes; Anemia; Asthma; Hypertension; Group B Streptococcus; HIV; Toxoplasmosis; Rubella; Cytomegalovirus; Varicella; Herpes simplex virus; and Hepatitis.

4.17.29.10. Describe the diagnosis, evaluation and management for the following complications of early pregnancy: Ectopic Pregnancy; Molar Pregnancy; and Spontaneous abortion.

4.17.29.11. Describe normal labor and management strategies, to include vaginal deliveries, cesarean sections (C-section) and vaginal birth after cesarean (VBAC).

4.17.29.12. Identify indications and contraindications for induction of labor.

4.17.29.13. Recognize the following complications in labor and delivery and describe basic management: Dystocia; Fetal Distress; and Post partum Hemorrhage.

4.17.29.14. Recognize the presentation, describe the risks and explain the evaluation and management of the following complications in pregnancy, labor, and the puerperium: Abruption placentae & placenta accrete; Gestational Diabetes; Intrauterine Growth Restriction (IUGR); Multiple Gestation; Placenta Previa & vasa previa; Eclampsia, Pre-eclampsia & HELLP syndrome; Premature Rupture of Membranes; Preterm labor; and Rh Incompatibility.

4.17.29.15. Provide appropriate patient education regarding nutrition, exercise and medication use in pregnancy.

4.17.29.16. Describe appropriate post-partum care and follow-up recommendations.

4.17.29.17. Provide appropriate patient education related to breastfeeding.

4.17.29.18. Evaluate and present case studies of patients that have obstetric and neonatal conditions, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.17.29.19. Describe and discuss neonatal evaluation and care following delivery.

4.18. Pediatrics Module

4.18.1. Demonstrate the proper use and interpretation of growth charts.

4.18.2. Identify familial, genetic and systemic disorders that can cause growth abnormalities in children.

4.18.3. Describe the nutritional needs of infants through adolescents

4.18.4. Discuss and contrast theories of development.

4.18.5. Using developmental milestones, determine whether or not a child is achieving normal neurodevelopmental maturation.

4.18.6. Review and discuss the immunization schedule in the pediatric population

4.18.7. Describe the performance of an examination on an infant and child

4.18.8. Produce an appropriate schedule for routine well baby care, to include frequency of visits and historical physical and laboratory data to be evaluated. Describe common causes and risks of childhood morbidity and mortality.

4.18.9. Describe adolescent health care issues including: Morbidity and mortality, use of health care; Confidentiality and consent; Barriers to health care; Determining sexual development; Psychosocial development; Cognitive development; Interpersonal and social development; and Psychological development.

4.18.10. Describe the questions asked during an adolescent psychosocial screening
4.18.11. Identify the common dermatoses seen in childhood and adolescence
4.18.12. Describe common childhood concerns, such as temper tantrums, thumb sucking, and enuresis, and address strategies to deal with them.
4.18.13. Identify the common orthopedic problems in the pediatric population.
4.18.14. Describe the specific components of a complete pediatric history and physical exam to include major headings as well as specific data in each of the major areas.
4.18.15. Recognize and differentiate the more common normal variants and abnormal physical findings seen on routine neonatal examination.
4.18.16. Recognize, describe, and summarize normal growth and development in terms of major developmental achievements. Recognize the more common milestones and their age of occurrence.
4.18.17. Recognize, define, and discuss the etiology, dermatologic and general clinical manifestations, laboratory findings, and treatment of the common viral and bacterial infections.
4.18.18. Recognize, define and discuss the etiology, dermatologic and general clinical manifestations, laboratory findings, and treatment of upper and lower respiratory infections.
4.18.19. Recognize, define and discuss the etiology, and general clinical manifestations, laboratory findings, and treatment of common pediatric orthopedic abnormalities.
4.18.20. Recognize, define and discuss the etiology, and general clinical manifestations, laboratory findings, and treatment of common pediatric neurological abnormalities.
4.18.21. Define "Attention Deficit Disorder" and "Specific Learning Disabilities" and list the behavioral characteristics of each.
4.18.22. Organize an appropriate workup of a child with suspected learning disabilities and discuss the general principles of diagnosis.
4.18.23. Compare and contrast specific learning disabilities, mental retardation, psychosis, and behavioral disorders in terms of H&P findings, IQ, neurological deficits, and parental observations.
4.18.24. Discuss the various types of child abuse that are commonly seen today and recognize the typical historical findings associated with child abuse.
4.18.25. Recognize and summarize the typical physical findings seen in physically and sexually abused children.
4.18.26. Discuss the general principles of accident prevention that should be explained to parents as part of routine pediatric patient education.

4.19. Rheumatology Module Objectives

4.19.1. Define and discuss the laboratory tests used for the diagnosis of rheumatologic disease and describe when they are ordered, and interpret results, including: CRP, Sedimentation rate, Rheumatoid factor, Anti CCP, Antinuclear antibody, Antineutrophil Cytoplasmic Antibodies – ANCA, Anticentromere antibody, Anti-SCI 70, Anti SS-A (ro), Anti SS-B (la), and Joint fluid analysis for septic joint, gout/pseudogout, arthritis.

4.19.2. Describe and discuss the clinical findings, differential diagnosis, and treatment of the following pain syndromes: Reflex sympathetic dystrophy, Fibromyalgia, Neck pain, Thoracic outlet syndrome, Lumbar back pain, Sciatica, and Lumbar spinal stenosis.

4.19.3. Identify the collagen vascular diseases and discuss their signs, symptoms and evaluation. Describe also, the treatments for each of the diseases: Lupus, Vasculitis, Temporal arteritis, Scleroderma, and Polymyalgia rheumatica.

4.19.4. Describe and discuss the pathophysiology, clinical findings, differential diagnosis, and treatment of the following diseases: Osteoarthritis, Paget’s disease of bone, Rheumatoid arthritis, Sjögren’s, Reiter’s, Psoriatic arthritis, Ankylosing spondylitis, Gout, and Pseudogout.
4.19.5. Identify the signs, symptoms, risk factors, and treatment options for: Osteoporosis, Septic joints, Avascular necrosis, Bursitis, and Tendonitis.

4.19.6. Describe and discuss the clinical findings, differential diagnosis, and treatment of benign and malignant bone tumors

4.19.7. Discuss, describe, trigger point injections, joint aspiration, joint injections, bursa aspiration and demonstrate palpation of trigger points and joint lines for injection/aspiration (injections/aspirations will not actually be performed).

4.19.8. Evaluate and present case studies of patients that have rheumatologic diseases, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plans.

4.20. Orthopedics Module Objectives

4.20.1. Describe and recognize the evaluation and treatment for; and distinguish, based on history and physical exam each of the following: Plantar fasciitis, Fractures, dislocations, sprains, strains, tendonitis of different joints, patellofemoral syndrome, bursitis of varied joints, Osgood-Schlatter disease, various ligament injuries, meniscal injury, slipped capital femoral epiphysis, trochanteric bursitis, avascular necrosis of the hip, low back pain, scoliosis/, lordosis, torticollis, spondylolisthesis, herniated nucleus pulposis, cauda equina syndrome, spinal stenosis, spinal compression fractures, rotator cuff injury, Impingement syndromes, acromioclavicular separation, nursemaid’s elbow, epicondylitis, carpal tunnel syndrome, ganglion cyst, dupuytren’s syndrome, deQuervain’s disease, trigger finger, mallet finger, gamekeeper’s thumb, subungual hematoma, and infectious musculoskeletal disorders (septic joint, osteomyelitis, paronychia, felon, tenosynovitis).

4.20.2. Apply the Salter-Harris fracture classification system for each of the fractures listed above and demonstrate the proper terminology appropriate for a referral, including angulation, rotation, and neurovascular assessment.

4.20.3. Develop familiarity with the following techniques, common surgical procedures to include anatomic landmarks and common post-operative care and complications:

4.20.3.1. Closed reductions
4.20.3.2. Open reductions
4.20.3.3. Joint replacements
4.20.3.4. Carpal tunnel release
4.20.3.5. Back surgery procedures
4.20.3.6. Bracing
4.20.3.7. Arthroscopic procedures

4.20.4. Describe appropriate indications for referral (i.e. emergent vs. urgent vs. non-urgent) of the orthopedic injuries/pathologies in the above objectives.

4.20.5. Demonstrate the ability to evaluate and interpret diagnostic images and related studies of the extremities related to the above list of disorders.

4.20.6. Describe appropriate pain management strategies in the orthopedic patient.

4.20.7. Evaluate and present case studies of patients orthopedic conditions, demonstrating an understanding of pertinent history, physical examination findings, pertinent diagnostic studies, and appropriate treatment plan

4.20.8. Provide patient education with regards to avoidance of common overuse syndromes found in recreational and workplace settings, return to play criteria with regards to sports medicine injuries and appropriate use of therapies and restrictions.
5. **Student Activities and Experiences (Instructional techniques)**
   - 5.1. Case studies that provide opportunity to analyze clinical correlations
   - 5.2. Guided faculty Lecture
   - 5.3. Group discussion
   - 5.4. Independent reading assignments
   - 5.5. Integrated computer technology will be utilized to enhance learning.
   - 5.6. Collaborative experience will be gained through cooperative case study learning groups

6. **Assessment Techniques**
   - 6.1. End of module exams (60 % of total grade)
   - 6.2. Clinical correlation Cooperative Group Assignments (30% of total grade)
   - 6.3. Full attendance and participation with professional behavior (10% of total grade)

7. **Grading:** Examinations will be based on classroom lectures, assignments, and textbook material. The ability to synthesize and manipulate concepts as they relate to clinical situations will be emphasized. Exams may be multiple choice, short answer, essay, practical, problem based, true and false, matching, or fill-in-the-blank. Students will refer to the academic bulletin and the PA department grading policies for requirements for progression in the PA program. Grades are based not only on exam performance but on, Cooperative Group Assignments, and attendance with participation.

   Course grades are calculated on a percentage basis. All final course grade percentages are rounded to the nearest integer. *(XX.50% or higher is rounded up to the next higher integer. XX.49% or less is rounded down.)* Final course grades are assigned according to the following academic standards:

<table>
<thead>
<tr>
<th>Didactic &amp; Research Courses</th>
<th>Percent Grade</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90 – 100</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>student has exceeded expectations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>80 – 89</td>
<td>B</td>
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<tr>
<td></td>
<td>student has met expectations</td>
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<tr>
<td></td>
<td>70-79</td>
<td>C</td>
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<tr>
<td></td>
<td>student is below expectations</td>
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<tr>
<td></td>
<td>Less than 70</td>
<td>F</td>
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<tr>
<td></td>
<td>student has failed expectations</td>
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</tbody>
</table>

An “I” may be temporarily awarded to individuals who fail to complete course requirements within the defined time. A final grade of “F” in any PA course is a non-passing grade and results in automatic and immediate dismissal from the PA Program.

8. **Tentative Schedule:**

<table>
<thead>
<tr>
<th>Module</th>
<th>Dates</th>
<th>Lecture and discussion TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endocrine and nutrition</td>
<td>August 25-September 10</td>
<td>Endocrine topics and case studies.</td>
</tr>
<tr>
<td>Nephrology and nutrition</td>
<td>September 13-27</td>
<td>Nephrology and nutrition topics and case studies.</td>
</tr>
<tr>
<td>Topic</td>
<td>Start Date</td>
<td>End Date</td>
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<tr>
<td>-------------------------------</td>
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<tr>
<td><strong>Urology and men’s health</strong></td>
<td>September 28-Oct 5</td>
<td></td>
</tr>
<tr>
<td><strong>GYN and women’s health</strong></td>
<td>Oct 5-13</td>
<td></td>
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<tr>
<td><strong>OB</strong></td>
<td>Oct 18-26</td>
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<tr>
<td><strong>Pediatrics</strong></td>
<td>Oct 27-Nov 10</td>
<td></td>
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<tr>
<td><strong>Rheumatology</strong></td>
<td>Nov 15-23</td>
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<tr>
<td><strong>Orthopedics</strong></td>
<td>Nov 29-Dec 8</td>
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<tr>
<td><strong>December 10</strong></td>
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</tbody>
</table>

9. **Cooperative Learning Assignments**: Cooperative learning is the instructional use of small groups that allows students to work together to maximize their own and each others’ learning. The cooperative learning method uses a group study task structure with an incentive structure in which students receive a group reward for a group product. This involves a high degree of cooperation between students. Assignments will be case-based upon the module that is being completed. Grades will be based on the accuracy and the completeness of the group’s responses to the questions in each case. Each group will receive one grade for the cases (each member will receive that grade therefore, it is expected that each member contribute fully to this group assignment).

10. **Academic Honesty Policy**: At a Christian liberal arts university, committed to the pursuit of truth and understanding, any act of academic dishonesty is especially distressing and cannot be tolerated. In general, academic dishonesty involves the abuse and misuse of information or people to gain an undeserved academic advantage or evaluation. The common forms of academic dishonesty include:

10.1. **Cheating**: using deception in the taking of tests or the preparation of written work, using unauthorized materials, copying another person’s work with or without consent, or assisting another in such activities;

10.2. **Lying**: falsifying, fabricating, or forging information in either written or spoken presentations;

10.3. **Plagiarism**: using the published writings, data, interpretations of ideas of another without proper documentation

10.4. **Episodes of academic dishonesty** are reported to the Vice President for Academic Affairs. The potential penalty for academic dishonesty includes:

10.4.1. **A failing grade** on a particular assignment

10.4.2. **A failing grade** for the entire course

10.4.3. **Charges against the student** with the appropriate discipline body
11. **ADA Statement**: In accordance with Americans with Disabilities Act, any student in this class who has a documented learning disability will be provided with reasonable accommodations designed to meet his/her needs. Before any such assistance can occur, it is the responsibility of the student to see that documentation is on file with Academic Affairs. If you have documented special needs you must make them known to the instructor prior to the third week of class.

12. **Emergency Contact**: All cell phones and pagers need to remain OFF during lectures and labs, Monday through Friday. If someone needs to reach you during that time, the administrative assistant for the program will take any important phone messages.