

MED 805: Gastroenterology, Endocrinology & Reproduction (GER)
Spring 2018

Mondays, Tuesdays, Thursdays & Fridays
8:00 a.m. to 12:00 p.m. & 1:00 to 5:00 p.m.
1001 Shadow Lane

Course Chairs:
Jeffrey Fahl, MD
Larry Shaw, MD / Ken Azoura, MD

Course Description and Learning Objectives:

This course takes an integrated approach to the gastrointestinal, endocrine, and reproductive systems to provide a broad understanding of the normal structure and function of each system. A comprehensive overview of anatomy, embryology, pathophysiology, epidemiology, biostatistics, diagnostic tests, as well as therapeutic principles related to disorders of these systems are covered.

- Describe the essential features of the gastrointestinal, endocrine, and reproductive systems, their normal structure and function, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with gastrointestinal, endocrine, and reproductive diseases (including disorders of pregnancy).
- Identify appropriate therapeutic options for selected diseases of the gastrointestinal, endocrine, and reproductive systems.
- Determine how epidemiologic, socioeconomic, behavioral, sociocultural, and community factors may impact the care of patients with diseases of the gastrointestinal, endocrine, and reproductive systems.
- Describe how wellness, nutrition, hospitality principles, pain management, and integrative medicine may contribute to the care of patients with diseases of the gastrointestinal, endocrine, and reproductive systems.
- Recognize bioethical issues germane to the medical care of patients with diseases of the gastrointestinal, endocrine, and reproductive systems.
- Recognize end-of-life issues germane to patients with gastrointestinal, endocrine, and reproductive diseases.
- Construct a differential diagnosis based on the clinical presentation of a patient with a gastrointestinal, endocrine, and/or reproductive disease and apply diagnostic reasoning to narrow the differential.
- Develop pertinent clinical questions related to the diagnosis and/or treatment of gastrointestinal, endocrine, and reproductive diseases, and utilize appropriate resources to answer those questions in a self-directed fashion

Required and Recommended Textbooks:

Required

- Callahan, T. C., & Caughey, A. (2013). *Blueprints Obstetrics and Gynecology* (Blueprint Series). 6th ed. Wolters Kluwer | Lippincott Williams & Wilkins.
- Kail, R. V., & Cavanaugh, J. C. (2015). *Human Development: A Life-Span View*. 7th ed. Wadsworth Publishing.
- Moore, K. L., Persaud, T. V. N., Torchia, M. G. (2016). *Before we are Born: Essentials of Embryology and Birth Defects*. 9th ed. Elsevier Saunders.

Recommended

- Fletcher, R., & Fletcher, S. (2013). *Clinical Epidemiology: The Essentials*. 5th ed. Wolters Kluwer | Lippincott Williams & Wilkins.

- Ross, M.H., & Pawlina, W. (2015). *Histology: A Text and Atlas with Correlated Cell and Molecular Biology*. 7th ed. Wolters Kluwer.

Additional materials may be assigned at the onset and throughout the duration of the course to aid/facilitate learning objectives.

Course Schedule & Weekly Objectives:**Week 1 – January 8-12, 2018 – Oral Cavity, Salivary Gland and Upper Luminal GI Tract***Topics include:*

- Normal embryology and anatomy of the oral cavity, salivary glands, and upper luminal GI tract
- Salient histologic features of the oral cavity, salivary glands & upper luminal GI tract
- Motility of the upper GI tract (including vomiting)
- Neural & hormonal mechanisms involved in the consumption and digestion of food
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders of the esophagus (including achalasia, certain types of esophagitis, *e.g.* reflux, eosinophilic, Barrett esophagus, and esophageal varices)
- Clinical features, pathogenesis, and diagnostic findings, as well as potential complications, associated with acute and chronic forms of gastritis
- Clinical features, pathogenesis, and diagnostic findings associated with selected tumors of the oral cavity, salivary gland, esophagus, and stomach
- Clinical features, pathogenesis, and diagnostic findings associated with the hypertrophic gastropathies
- Epidemiology of selected diseases of the upper gastrointestinal tract.
- Major therapeutic modalities for treating disorders of the upper gastrointestinal system (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

*Assigned Readings & Review Materials:***Week 2 – January 16-19, 2018 – Lower Luminal GI Tract and Exocrine Pancreas***Topics include:*

- Normal embryology and anatomy of the small intestine, pancreas, large intestine, and anus
- Salient histologic features of the small intestine, pancreas, large intestine, and anus
- Neural and hormonal mechanisms involved in the transit and absorption of digested materials through the intestines
- Clinical features, pathogenesis, and diagnostic findings associated with major infectious diseases of the intestines
- Clinical features, pathogenesis, and diagnostic findings associated with major inflammatory and immunologic diseases of the lower gastrointestinal tract, including celiac disease, inflammatory bowel disease (IBD), and pancreatitis
- Clinical features, pathogenesis, and diagnostic findings associated with major traumatic and mechanical disorders of the lower gastrointestinal tract (including various types of intestinal obstruction and perforation)
- Clinical features, pathogenesis, and diagnostic findings associated with major neoplastic and pre-neoplastic lesions of the lower gastrointestinal tract (including adenocarcinoma and various types of colonic polyps)
- Salient mechanisms involved in various types of familial colon cancer syndromes

- Clinical features, pathogenesis, and diagnostic findings associated with major neoplastic and pre-neoplastic lesions of the lower gastrointestinal tract (including adenocarcinoma and various types of colonic polyps)
- Clinical features, pathogenesis, and diagnostic findings associated with major vascular lesions of the lower gastrointestinal tract (including ischemia, angiodysplasia, and hemorrhoids)
- Epidemiology of selected diseases of the lower gastrointestinal tract
- Major therapeutic modalities for treating disorders of the lower gastrointestinal tract, including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions

Assigned Readings & Review Materials:

EXAM 1: January 22, 2018

Week 3 – January 22-26, 2018 – Liver and Hepatobiliary Tract

Topics include:

- Normal embryology and anatomy of the liver, gallbladder, and biliary tract
- Salient histologic features of the hepatobiliary system
- Major synthetic and metabolic functions of hepatocytes and hepatic endothelial cells, including cholesterol, bile salts, and selected drugs.
- Clinical features, pathogenesis, and diagnostic findings associated with major infectious diseases affecting the liver (including viral hepatitis)
- Clinical features, pathogenesis, and diagnostic findings associated with major inflammatory and autoimmune diseases affecting the hepatobiliary system, including cholecystitis, primary biliary cirrhosis (PBC), and primary sclerosing cholangitis (PSC).
- Clinical features, pathogenesis, and diagnostic findings associated with major drug/toxin-induced liver diseases (including alcoholic liver disease)
- Clinical features, pathogenesis, and diagnostic findings associated with major metabolic diseases affecting the hepatobiliary system, nonalcoholic fatty liver disease (NAFLD), hemochromatosis, Wilson disease, alpha-1-antitrypsin deficiency
- Clinical features, pathogenesis, and diagnostic findings associated with major circulatory disorders of the hepatobiliary system
- Clinical features, pathogenesis, and diagnostic findings associated with major tumors of the hepatobiliary system (including hepatocellular carcinoma, cholangiocarcinoma, and nodular hyperplasia)
- Epidemiology of selected diseases of the liver and hepatobiliary tract
- Major therapeutic modalities for treating disorders of the hepatobiliary system, including the uses, contraindications, side effects, and major drug-drug interactions

Assigned Readings & Review Materials:

Week 4 – January 29 - February 2, 2018 – Biochemistry

Topics include:

- Major biochemical sequences involved in energy metabolism
- Key biochemical pathways that extract energy from carbohydrates, fatty acids, and amino acids
- Key biochemical pathways that store energy in the body, primarily those involved glycogen and triglyceride synthesis

- Key features of the biochemical pathways responsible for amino acid synthesis and degradation, and describe the clinical and laboratory findings associated with inherited defects in these pathways, *e.g.* homocystinuria, maple syrup urine disease
- Key biochemical pathways involved in nucleotide synthesis and degradation
- Key features of the biochemical pathways responsible for lipid synthesis and degradation, and describe the clinical and laboratory findings associated with inherited defects in these pathways, *e.g.* dyslipidemia, carnitine deficiency
- Key features of the biochemical pathways responsible for porphyrin synthesis and degradation, and describe the clinical and laboratory findings associated with inherited defects in these pathways, *i.e.* the porphyrias
- Key features of the biochemical pathways responsible for the metabolism of galactose, and describe the clinical and laboratory findings associated with galactosemia
- Key features of the biochemical pathways responsible for alcohol synthesis and degradation
- Key features of the biochemical pathways responsible for the synthesis, storage, and degradation of selected macromolecules, *e.g.* complex carbohydrates, glycoproteins, and proteoglycans; and describe the clinical and laboratory findings associated with inherited defects in these pathways, *e.g.* lysosomal and glycogen storage diseases

EXAM 2: February 5, 2018

Week 5 – February 5-9, 2018 – Endocrine Pancreas and Nutrition

Topics include:

- Describe how energy is generated, stored, and expended at the whole-body level
- Describe how nutritional status is assessed across the human lifespan
- Primary functions of selected nutrients, including vitamins, minerals, trans-fatty acids, and cholesterol.
- major clinical features associated with deficiencies and/or toxicities of selected vitamins and minerals.
- Diagnosis and treatment of various eating disorders (including anorexia and bulimia, and those associated with obesity)
- Significance of various alternative diets, food fads, and the use and misuse of certain nutritional supplements.
- Major endocrine functions of the pancreatic islets in terms of the synthesis, secretion, and actions of pancreatic hormones
- Pathogenesis of diabetes mellitus types I and II
- Epidemiology, risk factors, clinical features, and pathophysiology of diabetes mellitus types I and II
- Classification and clinical manifestations of selected tumors of the pancreatic islets.
- Major therapeutic modalities for treating diabetes mellitus (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

Assigned Readings & Review Materials:

Week 6 – February 12-16, 2018 – Endocrine and Male Reproductive System

Topics include:

- Normal embryology and anatomy of the pituitary, thyroid, and adrenal glands

- Salient histologic features of the pituitary, thyroid, and adrenal glands
- Major endocrine functions of the thyroid and adrenal glands in terms of the synthesis, secretion, and actions of their respective hormones
- Role of the hypothalamus and anterior pituitary in regulating the thyroid & adrenal glands.
- Clinical features, pathogenesis, and diagnostic findings associated with major immunologic and inflammatory disorders of the thyroid gland (including Graves disease and Hashimoto thyroiditis)
- Clinical features, pathogenesis, and diagnostic findings associated with both hyper- and hypo-functioning of the thyroid and adrenal glands
- Clinical features, pathogenesis, and diagnostic findings associated with selected tumors of the pituitary, thyroid, and adrenal glands
- Normal embryology and anatomy of the male reproductive system
- Salient histologic features of the male reproductive system.
- Clinical and diagnostic findings associated with selected infectious, immunologic, traumatic, neoplastic, and metabolic disorders of the male reproductive system
- Epidemiology of selected diseases of the endocrine and male reproductive systems
- Major therapeutic modalities for treating disorders of the male reproductive tract (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

Assigned Readings & Review Materials:

EXAM 3: February 20, 2018

Week 7 – February 20-23, 2018 – Female Reproductive System

Topics include:

- Normal embryology and anatomy of the female reproductive system (including the breast)
- Salient histologic features of the female reproductive system (including the vulva, vagina, cervix, uterus, fallopian tube, ovary, and breast)
- Major physiologic mechanisms that regulate female reproductive function
- Major changes associated with the female reproductive system that occur throughout life, *e.g.* puberty, menopause
- Clinical features, pathogenesis, and diagnostic findings associated with major infectious and inflammatory diseases that affect the female reproductive system, including sexually transmitted infections (STIs), toxic shock syndrome (TSS), and autoimmune hypogonadism
- Clinical features, pathogenesis, and diagnostic findings associated with major female mechanical disorders of the reproductive system (including uterine prolapse and cystocele)
- Clinical features, pathogenesis, and diagnostic findings associated with major neoplastic diseases of the female reproductive system (including breast cancer)
- Clinical features, pathogenesis, and diagnostic findings associated with major regulatory disorders affecting the female reproductive system (including anovulation, infertility, polycystic ovary syndrome (PCOS), and endometriosis)
- Epidemiology of selected diseases of the female reproductive system.
- Major therapeutic modalities for treating disorders of the female reproductive tract (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

Assigned Readings & Review Materials:

Week 8 – February 26 – March 2, 2018 – Pregnancy*Topics include:*

- Salient features of human intercourse and orgasm.
- Major anatomic, histologic, physiologic, biochemical, and clinical features of normal pregnancy (including the placenta, from ovulation and fertilization through labor, delivery, and lactation)
- Clinical features, pathogenesis, and diagnostic findings associated with common and important disorders related to pregnancy (including ectopic pregnancy, third trimester bleeding, eclampsia, and gestational diabetes)
- Clinical features, pathogenesis, and diagnostic findings associated with selected disorders of the puerperium (including postpartum hemorrhage, sepsis, and depression)
- Major features of selected disorders of the fetus (including prematurity, cord compression, and macrosomia)
- Recognize how selected systemic disorders may affect pregnancy (including obesity, cirrhosis, asthma, and renal failure)
- Major features of common fertility treatments
- Uses, contraindications, side effects, and major drug-drug interactions of various types of contraception
- Epidemiology of selected diseases of pregnancy
- Major therapeutic modalities for treating disorders of pregnancy (including the uses, contraindications, side effects, and major drug-drug interactions associated with various pharmacologic interventions)

FINAL EXAM: March 5, 2018**Course Requirements & Evaluation:**

Four (4) summative National Board of Medical Examiners (NBME) exams will be administered throughout the duration of the course, utilizing U.S. Medical Licensing Examination (USMLE)-type questions. Formative and summative assessments for small group activities, *e.g.* active engagement in problem-based learning sessions, in addition to preparation quizzes and written assignments will be administered throughout the course's duration. It is imperative that students engage in individual, small group, and class discussions to effectively contribute to active learning activities.

Students are expected to arrive on time to all course sessions and prepared to participate actively and engage in all learning and small group activities. Additionally, students are expected to be respectful, take responsibility and accountability for their own choices, actions, and/or decision. This includes the demonstration of personal and professional integrity.

Grading:

A pass/fail (P/F) grade is based upon satisfactory participation in small group activities, the timely completion of written assignments and exercises, and successful passage on the summative NBME exams.

Dress Code:

Students represent not only themselves, but also the medical profession to those with whom they have contact. Appropriate and professional attire should be worn, especially when students are in

patient care settings or when contact with patients is anticipated. Students should be aware that personal appearance may serve to inspire or hinder the establishment of the trust and confidence that are essential in the doctor-patient relationship. Jeans, sandals, and shorts (and other casual attire) are not considered professional dress. Scrubs are worn in the operating room, in the anatomy lab or in other clinical circumstances to protect the operator's clothing from soilage. Scrubs, in general, should not be worn outside of the lab or hospital, and scrubs worn in the operating room should not be worn outside of the operating room. (*Please refer to Section 6: Professionalism in the UNLV SOM Student Handbook for guidelines pertaining specifically to dress and deportment.*)

University Expectations and Resources:

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>.

Copyright – The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC) – The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with UNLV SOM's Senior Associate Dean for Student Affairs, as well as a Disabilities Specialist at the DRC to discuss appropriate options.

If you are registered with the UNLV Disability Resource Center, please submit your Academic Accommodation Plan from the DRC to UNLV SOM's Office of Student Affairs to develop strategies for implementing an accommodations plan that meets both your needs and UNLV SOM requirements. Any information provided is private and confidential. To maintain confidentiality, please do not approach course chairs or instructors before or after class to discuss accommodation needs.

Religious Holidays Policy – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the Senior Associate Dean for Student Affairs and the course chair or faculty preceptor no later than the end of the first two weeks of classes, January 31, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the

university that could not have reasonably been avoided. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

Incomplete Grades – Course or clerkship/elective faculty share responsibility with individual students to monitor their performance in the curriculum. The Student Progress Committee (SPC) follows student performance throughout the curriculum, and is responsible for approving all remediation plans once students have been assigned an insufficient grade, such as an ‘Incomplete’ or ‘Fail.’

Remediation plans are developed by individual course directors, based upon individual student’s identified academic and professional deficits, and tailored by both the course director and the SPC. The SPC determines deadlines for the adequate remediation of the course and provides final approval of the remediation plan. Students have the option, upon request, to appear before the SPC when plans for remediation are being considered.

Please note: In Phase 3 of the curriculum, any remediation of elective or advanced clerkship deficits must be completed prior to April 1 to meet the School of Medicine’s graduation requirements. Students are not permitted to remediate more than two (2) course grades of ‘Incomplete’ during a single academic year. Students who receive more than two incomplete grades must be reviewed by the SPC. *(Please refer to Section 7: Academic Policies in the UNLVSOM Student Handbook for guidelines pertaining specifically to academic progress and actions.)*

Tutoring & Academic Resources – The Academic Skills Team (AST) provides academic assistance for all UNLVSOM students taking UNLVSOM courses. Students are encouraged to stop by the AST to utilize a variety of academic services, including test-tasking skills and strategies, coping with test anxiety, and improving self-study skills in preparation for USMLE and board exams. The AST is located at: 2040 West Charleston Boulevard, 89102.

UNLV E-mail – By policy, faculty and staff should e-mail students’ UNLV e-mail accounts only. All UNLV students receive a Rebelmail account after they have been admitted to the university. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. Students’ e-mail prefixes are listed on class rosters, and the suffix is: @unlv.nevada.edu.