



Edward Via College of Osteopathic Medicine

MED 8100/MED 8115
Clinical Surgery and Surgery Modules
Academic Year 2025-2026

ROTATION SYLLABUS



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I. Rotation Description

The purpose of the VCOM Department of Surgery is to provide a high quality surgical educational experience. The Mission of the College is to provide medical education and research that prepares globally-minded, community-focused physicians and to improve the health of those most in need.

Third year medical student clerkships are offered by the majority of our regional hospitals. The general surgery rotation is four weeks in duration. The student acts as a surgical extern as they rotate with the Discipline. The student learns how to do a surgical history, assess the patient by Goldman's criteria, provide pre- and post-op care, make rounds, write orders, and attend all conferences that are for surgical cases. The Department of Surgery faculty believe the surgical disciplines have important roles in medical education and the provision of healthcare and that educational and healthcare advances are founded upon sound clinical and basic research.

During the third-year surgery rotation, students expand their knowledge of surgical conditions and gain the ability to apply this knowledge in the clinical setting. The curriculum is taught through case modules, assigned readings, and through one-on-one student-preceptor interaction in the clinical setting. Students are expected to complete their assignments for both surgery and the longitudinal OMM course. The practice of surgery occurs in the outpatient office setting and in the inpatient setting. Due to the variety of practice opportunities and formats in surgery, students should review their [specific site instructions](#) for a more detailed description of their specific practice setting.

II. Course Goals and Objectives

A. Goals of the Course

1. Practice – The student will become familiar with the characteristics of the practice of general surgery, including the knowledge base required, manner of patient communications, intermittent patient encounters, and aspects of clinical reasoning, lifestyle considerations, and continuing education issues.
2. Surgical/Clinical Reasoning – The student will develop knowledge and skills in learning to differentiate between elective, urgent, and emergent surgical clinical problems from the perspective of clinical reasoning skills.
3. Communication – The student will develop the ability to transmit information through a concise, accurate, and timely oral presentation, as well as documenting their History and Physical and recording progress notes in the hospital chart where applicable.

B. Objectives of the Course

1. To provide a working knowledge of surgical conditions of patients a primary care physician is likely to encounter in daily practice.
2. To provide a challenging and interesting introduction to surgery as a choice to practice, recognizing the need for general surgeons in rural and underserved areas.
3. To broaden the students' knowledge of surgical disease and procedures.
4. To provide clinical research in new techniques and surgical devices that will enhance the health of all humans.
5. To foster compassionate and altruistic care by participation in our Appalachian and International Medical Missions.
6. To promote the development of surgical technical skills in students and residents including:
 - a. Basic surgical instruments, knots and ties
 - b. Elementary wound closure and local anesthesia
 - c. Subcutaneous and fascial closures
 - d. Wound debridement, irrigation and drainage, securing tubes, Z plasties, VY plasties, rotation flaps

7. To become familiar with more complicated procedures including skin grafts, nerve, vessel and tendon repair.
8. To become familiar with the surgical specialties and how they are practiced, including:
 - a. Otorhinolaryngology
 - b. Ophthalmology
 - c. Neurosurgery
 - d. Cardiovascular Surgery
 - e. Orthopedics
 - f. Urology
 - g. Plastic Surgery

C. Clinical Performance Objectives

While the end-of-rotation exam is derived from the didactic curriculum and objectives described above in the “Clinical Modules – Required Curriculum” section, the end-of-rotation evaluation completed by your preceptor is based on clinical core competencies. These core competencies reflect student performance in 6 key areas: communication, problem solving, clinical skills, medical knowledge, osteopathic medicine and professional and ethical considerations. Your end-of-rotation evaluation from your preceptor will be based directly on your performance in these 6 core competencies as described below.

1. **Communication** - the student should demonstrate the following clinical communication skills:
 - a. Effective listening to patient, family, peers, and healthcare team
 - b. Demonstrates compassion and respect in patient communications
 - c. Effective investigation of chief complaint, medical and psychosocial history specific to the rotation
 - d. Considers whole patient: social, spiritual & cultural concerns
 - e. Efficiently prioritizes essential from non-essential information
 - f. Assures patient understands instructions, consents & medications
 - g. Presents cases in an accurate, concise, well-organized manner
2. **Problem Solving** – the student should demonstrate the following problem-solving skills:
 - a. Identify important questions and separate data in organized fashion organizing positives & negatives
 - b. Discern major from minor patient problems
 - c. Formulate a differential while identifying the most common diagnoses
 - d. Identify indications for & apply findings from the most common radiographic and diagnostic tests
 - e. Identify correct management plan considering contraindications & interaction
3. **Clinical Skills** - the student should demonstrate the following problem-solving skills:
 - a. Assesses vital signs & triage patient according to degree of illness
 - b. Perform good auscultatory, palpatory & visual skills
 - c. Perform a thorough physical exam pertinent to the rotation
4. **Osteopathic Manipulative Medicine** - the student should demonstrate the following skills in regard to osteopathic manipulative medicine
 - a. Apply osteopathic manipulative medicine successfully when appropriate
 - b. Perform and document a thorough musculoskeletal exam
 - c. Utilize palpatory skills to accurately discern physical changes that occur with various clinical disorders
 - d. Apply osteopathic manipulative treatments successfully
5. **Medical Knowledge** – the student should demonstrate the following in regards to medical knowledge
 - a. Identify & correlate anatomy, pathology and pathophysiology related to most disease processes

- b. Demonstrate characteristics of a self-motivated learner including demonstrating interest and enthusiasm about patient cases and research of the literature
 - c. Are thorough & knowledgeable in researching evidence-based literature
 - d. Actively seek feedback from preceptor on areas for improvement
 - e. Correlate symptoms & signs with most common disease
6. **Professional and Ethical Behaviors** - the student should demonstrate the following professional and ethical behaviors and skills:
- a. Is dutiful, arrives on time & stays until all tasks are complete
 - b. Consistently follows through on patient care responsibilities
 - c. Accepts & readily responds to feedback, is not resistant to advice
 - d. Assures professionalism in relationships with patients, staff, & peers
 - e. Displays integrity & honesty in medical ability and documentation
 - f. Acknowledges errors, seeks to correct errors appropriately
 - g. Is well prepared for and seeks to provide high quality patient care
 - h. Identifies the importance to care for underserved populations in a non-judgmental & altruistic manner

III. Rotation Design

A. Educational Modules

Educational modules using lectures, cases, and other forms of delivery are used for third year curriculum. Each student must complete a post-rotation exam to assure that the expected basic content or medical knowledge has been acquired during the rotation. In addition to the experiences received in the clinical training sites, students are expected to read the content of the assigned textbooks and online materials in order to complete the entire curriculum assigned for the clinical module.

B. Summative Evaluations

Students are assessed during their third year through both a clinical rotation competency evaluation and an end-of-rotation exam.

Student competency-based rating forms are used by the preceptor to evaluate each student's clinical skills and the application of medical knowledge in the clinical setting. These forms are only completed by the clinical faculty member or preceptor. Performance on rotations will be evaluated by the primary clinical faculty member precepting the student. VCOM uses a competency-based evaluation form which includes the osteopathic core competencies. These competencies evaluated include:

- a. Medical knowledge;
- b. Communication;
- c. Physical exam skills;
- d. Problem solving and clinical decision making;
- e. Professionalism and ethics;
- f. Osteopathic specific competencies; and
- g. Additional VCOM values.

Student competency is judged on clinical skill performance. Each skill is rated as to how often the student performs the skill appropriately (i.e. unacceptable, below expectation, meets expectation, above expectation, exceptional).

In addition to being assessed on clinical performance skills during the rotation, students are also assessed on the basic science and medical knowledge acquired through the educational modules. An end-of-rotation exam is administered to each student at the end of each rotation to assess the student's basic content and medical knowledge acquired during the rotation.

C. Logging Patient Encounters and Procedures

During the clinical years students need to develop the clinical competencies required for graduation and post-graduate training. These competencies are evaluated in many different ways: by faculty observation during rotations, by examinations, by the COMLEX Level 2 CE examination, and VCOM's OMS 3 summative examinations. In order to develop many of these competencies and meet the objectives required for graduation, VCOM needs to ensure that each student sees enough patients and an appropriate mix of patients during their clinical years. For these reasons, as well as others discussed below and to meet accreditation standards, VCOM has developed requirements to log patient encounters and procedures.

Each day, students are required to log all patient type/clinical conditions and procedures/skills that they encounter that day into the VLMS application.

- Within the daily log, the clinical discipline chairs have also identified a specific set of patient presentations and procedures that each student is expected to see/do during the course of the rotation that should be logged in VLMS as you experience it. Students should be familiar with this list and should actively work to see these patients or be involved in these procedures. The list serves as a guide for the types of patients the clinical faculty think students should encounter during the rotation. The list does not include every possible diagnosis or even every diagnostic entity students must learn. The list reflects the common and typical clinical entities that the faculty feels VCOM students should experience. The list can be found in VLMS or CANVAS.
- Students must learn more than they will experience during clinical rotations. The log does not reflect the totality of the educational objectives during the rotation. Clinical experience is an important part, but only a part, of your rotation requirement. Students may discover they have not seen some of the presentations/procedures on the list during the rotation; however, they should arrange to see these problems in the fourth year or learn about them in other ways through the other course materials provided. Students need to commit themselves to extensive reading and studying during the clinical years. "Read about patients you see and read about patients you don't see".

One of the competencies students must develop during their clinical training involves documentation. Documentation is an essential and important feature of patient care and learning how and what to document is an important part of medical education. The seriousness and accuracy with which students maintain and update their patient logs are measures of professionalism. Students must review these logs with their preceptor prior to the end of the rotation period, as required by the final preceptor evaluation form. Students are encouraged to periodically review their VLMS entries with their preceptor during the rotation period.

Throughout the year, data is reviewed by Clinical Affairs, the curriculum committees, and administration to ensure the clinical experiences meet the objectives of the rotation and to assess the comparability of experiences at various sites. The logs serve to:

- Demonstrate student exposure to patients with medical problems that support course objectives.
- Demonstrate level of student involvement in the care of patients.
- Demonstrate student exposure to, and participation in, targeted clinical procedures.
- Demonstrate student exposure to patient populations in both inpatient and outpatient settings.
- Demonstrate comparability of experiences at various clinical sites.
- Quantify for students the nature and scope of their clinical education and highlight educational needs for self-directed learning.

Students will receive a report at the end of the OMS 3 year that outlines the patient encounters the student was involved in throughout their rotations. These individual log reports can be shared during interviews/audition rotations/future credentialing to demonstrate the scope of their clinical experiences.

IV. Credits

MED 8100: 4 credit hours

MED 8115: 1 credit hour

V. Course Texts and Reference Materials

A. Required Textbooks

- Nicholas, Alexander, and Evan Nicholas. *Atlas of Osteopathic Techniques*, 4th ed. Baltimore, MD: Lippincott, Williams & Wilkins, 2023. ISBN: 978-1975127480978-1451193411 (retail price \$183.99) – Available in VCOM’s eLibrary in LWW Osteopathic Medicine Collection
- Rakel, Robert, and David Rakel. *Textbook of Family Medicine*, 9th ed. Philadelphia, PA: Elsevier, 2015. ISBN: 978-0323239905 (retail price \$179.99) – Available in VCOM’s eLibrary in Clinical Key
- Seffinger, Michael. *Foundations of Osteopathic Medicine*, 4th ed. Philadelphia, PA: Wolters Kluwer Health, 2019. ISBN: 978-1496368324 (retail price \$162.99) – Available in VCOM’s eLibrary in LWW Osteopathic Medicine Collection
- Townsend, C.M., Beauchamp, R.D., Evers, B.M., & Mattox, L.L. *Sabiston Textbook of Surgery*, 21st ed. Philadelphia, PA” Elsevier., 2023. ISBN: 978-0323640626 (retail price \$210.99) - Available in VCOM’s eLibrary in Clinical Key

B. Recommended Textbooks

- Kuchera, Michael, and William Kuchera. *Osteopathic Considerations in Systemic Dysfunction*, 2nd ed revised. Centerville, OH: Greyden Press, 1994. ISBN: 978-1570741548 (retail price 54.95)

VI. Course Grading and Requirements for Successful Completion

A. Requirements

- Attendance according to VCOM and preceptor requirements as defined in the [College Catalog and Student Handbook](#).
- Review of the syllabus topics, learning objectives, and reading assignments:
 - In addition to the learning experience in the clinical site, the clinical curriculum consists of the reading assignments and learning objectives that are included in this syllabus, as well as clinical case modules and Aquifer Radiology cases that are derived from some, but not all, of the learning objectives. A student’s success as a physician will depend upon the learning skills they develop during this core rotation, as guided by this syllabus and clinical case modules. National boards, residency in-training examinations, and specialty board examinations require ever increasing sophistication in student’s ability to apply and manipulate medical knowledge to the clinical context.
- Completion and submission of 17 clinical case modules:
 - The clinical case modules were developed by VCOM Discipline Chairs and are intended to provide an OMS 3 student with a clinical, patient-centered approach to the learning content of this rotation. The modules should not be approached as rote learning, but should provide structured, clinically focused learning from the evidence base for this rotation. The same module may be included under multiple topics in the syllabus to show its relevance to the topic, but students only need to complete the module once.

The clinical case modules must be submitted in Canvas **by no later than 5 PM on the day of your end of rotation exam** at: <https://canvas.vcom.edu>. Failure to do so will result in a deduction of 5 points from your end-of-rotation exam score.

- [Module 1 - Wound Healing, Suturing and Lacerations](#)
 - [Module 2 - Disorders of Breast, Principles of Pre-Post Op](#)
 - [Module 3 - Burn Management, Principles of Pre-Post Op, Anesthesia, Wound Healing](#)
 - [Module 4 - Anorectal Disease, Anesthesia, Wound Healing](#)
 - [Module 5 - Lung Cancer](#)
 - [Module 6 - Diverticulitis and Diverticulosis](#)
 - [Module 7 - Head and Neck Tumors](#)
 - [Module 8 - Inguinal Hernia](#)
 - [Module 9 - Acute Abd SBO and Appendicitis](#)
 - [Module 10 - Adrenal Disorders](#)
 - [Module 11 - Cholecystitis and Hepatobiliary System and Pancreatic Disorders](#)
 - [Module 12 - Colon Cancer](#)
 - [Module 13 - Thyroid Disorders](#)
 - [Module 14 - Pediatric Inguinal Hernia](#)
 - [Module 15 - Trauma Resuscitation](#)
 - [Module 16 - Pain Management](#)
 - [Module 17-Skin Cancer](#)
- Completion of 3 Aquifer Radiology cases:
 - Aquifer Radiology is a case-based virtual course that provides realistic case scenarios that demonstrate best-practices, helping students develop clinical reasoning skills that bridge the gap from content to practice. Upon completion of the cases, students should have a basic understanding of the principles and applications of medical imaging and be able to interpret common radiological studies in the context of presenting patient conditions. In addition, students should be able to recognize common osteopathic structural and viscersomatic/somatosomatic changes that correlate to specific radiographic findings.
 - In order to receive credit for the radiology cases and meet the requirements for passing the rotation, students must complete the case, including all associated components of the online program such as the knowledge assessment questions associated with the cases. The same case may be included under multiple topics in the syllabus to show its relevance to the topic, but students only need to complete the case once. Progress will be reviewed by the online administrator to ensure completion of these requirements. Students must successfully complete the case and knowledge assessment questions **by no later than 5 PM on the day of your end of rotation exam.**
 - [Aquifer Radiology Case 2](#)
 - [Aquifer Radiology Case 3](#)
 - [Aquifer Radiology Case 6](#)
 - To get full credit for each case completed, please be sure to click forward to the page at the end of the case that states “Summary of Your Case Session” in the upper left-hand corner.
 - Register for the Aquifer cases at: <https://www.aquifer.org>
Your email has been pre-loaded into Aquifer, and you should have received an email about how to set up your account.

- If you are a first-time user:
 - Click “Sign in” in the top right corner.
 - Enter your institutional email address in the email box. Then click on the “Register” button at the bottom of the page.
 - You will be sent an email with a link to complete registration. Upon receipt of the registration email, click on the link “Click Here”. You will then be brought to the profile setup page. An email will be sent to you. Follow the instructions in the email to set up your account.
 - You will be asked to fill in your profile information and set up a password (8 character minimum). Once you have completed your user profile and created a password, you will receive a welcome email with links to useful information and guides. You would also be logged into the Aqueduct learning management system.
 - Once your profile is completed successfully, you will be brought to your institution’s Course page.
 - You will also receive a “Thank you for registering with Aquifer” email with links to tools, resources, and Aquifer news.
- If you are a returning user:
 - Click “Sign in” in the top right corner.
 - Please log in with your institutional email and account password and click “Sign In”.
- Logging patient encounters and procedures in VLMS:
 - **Students are required to log daily** - Students are **required to log all patient type/clinical conditions and procedures/skills that they encounter that day** into the VLMS application at: <https://vlms.app/login.html>
 - Within the daily log, the clinical discipline chairs have also identified a specific set of patient presentations and procedures that each student is expected to see/do during the course of the rotation that should be logged in VLMS as you experience it. Students should be familiar with this list and should actively work to see these patients or be involved in these procedures. The list serves as a guide for the types of patients the clinical faculty think students should encounter during the rotation. The list does not include every possible diagnosis or even every diagnostic entity students must learn. The list reflects the common and typical clinical entities that the faculty feels VCOM students should experience. The list can be found in VLMS or CANVAS.
 - Students should log only an encounter with or exposure to a real patient.
 - Simulated patients, case presentations, videos, grand rounds, written clinical vignettes, etc. should not be logged even though they are all important ways to learn clinical medicine. Many of these educational experiences, along with self-directed reading, are necessary preparation for COMLEX Level 2 and postgraduate training. This log, however, focuses on a unique and critical component of clinical training, namely, involvement with “real” patients.
 - Longitudinal care of a patient that results in a new diagnosis or secondary diagnosis should be entered as a new entry instead of editing the original entry.
 - Multiple encounters with the same patient that do not result in a new diagnosis or procedure should not be logged. However, if multiple encounters result in a new diagnosis or a new procedure is performed, these should be entered as a new entry.
 - Student involvement with patients can occur in various ways with different levels of student responsibility. The most “meaningful” learning experience

involves the student in the initial history and physical exam and participation in diagnostic decision making and management. A less involved but still meaningful encounter can be seeing a patient presented by someone else at the bedside. Although the level of responsibility in this latter case is less, students should log the diagnoses seen in these clinical encounters. Patient experiences in the operating or delivery room should also be logged.

- All students must review these logs with their preceptors prior to the end of the rotation period, as required by the final preceptor evaluation form. Students are encouraged to periodically review their VLMS entries with their preceptor during the rotation period. These reviews should stimulate discussions about cases and learning objectives, as well as identify curriculum areas the student may still need to complete.
- Failure to log daily results in the following and is cumulative throughout the academic year (not reset each rotation period):
 - First OMS 3 notification: Email warning outlining consequences
 - Second OMS 3 notification: Meeting with the Associate Dean
 - Third OMS 3 notification: Behavioral contract
 - Fourth OMS 3 notification: Students will receive an IP “In-Progress” grade for the rotation until logging for the rotation is completed.
 - Fifth OMS 3 notification: Referral to PESB/Honor Code (whichever is most appropriate), which could lead to sanctions and/or permanent record in the student file or MSPE.
- Rotation evaluations:

The following evaluations must be completed and submitted for successful completion of the rotation:

 - Mid-Rotation Evaluation: The mid-rotation evaluation form is not required but highly recommended. See the VCOM website at: <https://www.vcom.edu/academics/clinical-education-third-year/forms> to access the mid-rotation evaluation form.
 - Third-Year Preceptor Evaluation: Student competency-based rating forms are used by the preceptor to evaluate each student’s clinical skills and the application of medical knowledge in the clinical setting. These forms are only completed by the clinical faculty member or preceptor. It is the student’s responsibility to ensure that all clinical evaluation forms are completed and submitted online or turned into the Site Coordinator or the Clinical Affairs Office at the completion of each rotation. Students should inform the Clinical Affairs Office of any difficulty in obtaining an evaluation by the preceptor at the end of that rotation. Preceptors must complete the evaluation at: <https://intranet.vcom.edu/clinical>
 - Student Evaluation of the Preceptor: Students must complete and submit an evaluation of their preceptor at the end of the rotation. The form must be completed at: <https://intranet.vcom.edu/clinical>
 - Student Evaluation of the Site: At the end of the student’s last OMS 3 year rotation, the student must complete and submit an evaluation of their core rotation site, DSME, and Site Coordinator. The form must be completed at: <https://intranet.vcom.edu/clinical>
- Successful completion of the end-of-rotation written exam:

The content of the end-of-rotation exams will be based upon the learning objectives and reading assignments, including OMM, in this syllabus, the clinical case modules, and the Aquifer Radiology cases and their associated references.

B. Grading

Students must pass both the "module" and "rotation" portions of the course. All rotations have a clinical rotation grade and clinical modules/exam grade. Failure to submit all of the case module files using the Canvas link provided above and the Aquifer Radiology cases **by no later than 5 PM on the day of your end of rotation exam** will result in a **deduction of 5 points from your end-of-rotation exam score. VLMS logs are due no later than 5 PM on the day of your end of rotation exam.**

Clinical Grading Scale and GPAs						
OMS 3 End-of-Rotation Exam Grades			OMS 3 AND OMS 4 Clinical Rotation Grades		Other Grades	
A	90-100	4.0	H	Honors	IP	In Progress
B+	85-89	3.5	HP	High Pass	INC	Incomplete
B	80-84	3.0	P	Pass	CP	Conditional Pass
C+	75-79	2.5	F	Fail	R	Repeat
C	70-74	2.0			Au	Audit
F	<70	0.0				

C. Remediation

Students who fail a clinical rotation, fail an end-of-rotation exam twice, or who have more than one first attempt failure on end-of-rotation exams within an academic year (even if the student has successfully remediated the prior end-of-rotation exam on the second attempt) will be referred to the Promotion Board. If a student fails the professionalism and ethics portion of the evaluation he or she may be removed from the rotation and referred to the Professional and Ethical Standards Board. No grade will be changed unless the Office of Clinical Affairs certifies to the Registrar, in writing, that an error occurred or that the remediation results in a grade change.

- **Failure of an End-of-Rotation Exam**

Students must pass each end of rotation exam with a C (70%) or better to receive a passing grade for the clinical medical knowledge module. Students who fail an end of rotation exam but pass the clinical rotation evaluation component have a second opportunity to pass the exam within 28 days of notification. If the student passes the remediation exam, the remediated exam grade will be the grade recorded on the transcript and be GPA accountable.

If the student fails the end of rotation exam a second time, the student will receive an "F" grade for the rotation and will be brought before the Promotion Board. If the student is allowed to repeat the rotation, all components of the rotation must be repeated, and the repeated rotation must be with a different preceptor than the one from the original rotation that the student failed. Once repeated, the transcript will show both the initial clinical medical knowledge module course and the initial clinical rotation competency evaluation course, as well as the repeated clinical medical knowledge module course and the repeated clinical rotation competency evaluation course. The repeated courses will have the letter "R" at the end of the course number to reflect that they are repeated. Both the grade earned for the initial courses and the repeated courses will be recorded on the transcript, but only the repeated courses will be GPA accountable, regardless of whether the initial or repeated course grade is higher.

In addition, students who fail more than one first attempt failure of end-of-rotation exams within a semester (i.e. failed the first attempt end-of-rotation exam for pediatrics and failed the first attempt end-of-rotation exam for surgery within the first semester), even if the student has successfully remediated the prior end-of-rotation exam on the second attempt, will be placed on academic probation (at a minimum through their OMS 3 year) by the Campus Dean.

- **Failure of a Rotation**

If a student fails the clinical rotation evaluation the student will receive an “F” grade for the rotation and will be brought before the Promotion Board. If the student is allowed to repeat the rotation, all components of the rotation must be repeated, and the repeated rotation must be with a different preceptor than the one from the original rotation that the student failed. Once repeated, the transcript will show both the initial clinical medical knowledge module course and the initial clinical rotation competency evaluation course, as well as the repeated clinical medical knowledge module course and the repeated clinical rotation competency evaluation course. The repeated courses will have the letter “R” at the end of the course number to reflect that they are repeated. Both the grade earned for the initial courses and the repeated courses will be recorded on the transcript, but only the repeated courses will be GPA accountable, regardless of whether the initial or repeated course grade is higher.

- **Failure to Make Academic Progress**

In general, students should show a progression of improvement in clinical performance throughout rotations. Repeated poor or failing performance in a specific competency area on the evaluation form across more than one rotation may also be a reason for a required remediation at the discretion of the Associate Dean for Clinical Affairs in consultation with the clinical chair, the preceptor, and the Promotion Board. Those students who receive a mere “Pass” on multiple rotations will be counseled about overall performance and may be required to complete an additional rotation at the end of the year. Any additional curriculum or required remediation will be based on the performance measure. Those students who continually score in the "unsatisfactory" category or repeated "performs some of the time, but needs improvement" consistently and do not improve over time or who fail one or more rotations may be deemed as not making academic progress and, as a result, may be referred to the Promotion Board and be required to complete additional curriculum. Multiple rotation failures may result in dismissal.

Poor ratings on the clinical rotation evaluation in the professional and ethical areas of the assessment are addressed by the Associate Dean for Clinical Affairs. The Associate Dean may design a remediation appropriate to correct the behavior or if needed, may refer the student to the Professional and Ethical Standards Board. In the case of repeated concerns in a professional and/or ethical area, the Associate Dean for Clinical Affairs may refer the student to the Campus Dean for a referral to the Professional and Ethical Standards Board or Promotion Board. The Campus Dean will act upon this referral depending on the severity and the area of the performance measure. Poor ratings in this area will include comments as to the exact nature of the rating.

VII. Academic Expectations

Grading policies, academic progress, and graduation requirements may be found in the [College Catalog and Student Handbook](#).

A. Attendance

Attendance for all clinical rotation days is mandatory. The clinical site will determine the assigned days and hours to be worked within the rotation period. Students are required to attend any orientation the clinical site sets as mandatory prior to any rotation or the clinical year. The orientation sessions vary by site and are required to maintain assignment to the site. Although the clinical site determines the assigned days and hours to be worked, VCOM has established the following guidelines:

- 4-week rotations may not be less than 20, eight-hour days for a total of a minimum of 160 hours and often average 180 hours or greater.
 - Students may be required to work up to 24 days in a 4-week period or 25 days in a 1-month rotation, including call and weekends at the discretion of the clinical site.

- If the clinical site requires longer daily hours or shift work, the student may complete the required hours in less than 20 days with the following specifications:
 - Students should not work greater than an average of 12 out of every 14 days.
 - Students should not work more than 12 hours daily, exclusive of on-call assignments.
 - If on-call hours are required, the student should not be on duty for greater than 30 continuous hours.
 - Students may be required to work weekends but in general should have 2 weekends per month free and an average of 2 of 7 days per week free.

It should be noted that preceptors will have final determination of the distribution of hours, which may vary from this policy but should not in general be less than 160 hours for a 4-week rotation. The institution's DSME and assigned clinical faculty determine clinical duty hours. Students are responsible to the assigned clinical faculty and are expected to comply with the general rules and regulations established by the assigned clinical faculty, and/or the core hospital(s), or facility associated with the rotation.

The average student clinical day begins at 7 am and ends at 7 pm. Students are expected to work if their assigned clinical faculty is working. Some rotations assign students to shifts and in such cases the student may be required to work evening or night hours. If on-call hours are required, the student must take the call; however, the student should not be on duty for greater than 30 continuous hours. Students may be required to work weekends, but in general should have two weekends per month free and two of seven days per week free. Student holidays are determined by the clinical site and follow those of other students and/or residents from the clinical site. Students must be prompt and on time for the clinical rotation.

Students are expected to arrive on time for all clinical rotations. If a student is late, he or she must notify the site coordinator and the preceptor prior to or at the time they are scheduled to arrive. Students must have a reason for being late such as illness or vehicle issues and it is not anticipated that this would occur more than one occasion AND it is important the student call in prior to being late. Repeated tardiness is considered as unprofessional behavior and is a reason for dismissal from a rotation. Students with repeated tardiness will be referred to the PESB. Tardiness is defined as more than 5 minutes after the scheduled time the preceptor designates as the expected arrival time.

The Office of Clinical Affairs requires that the medical student complete and submit an Excused Absence Clinical Rotations Approval form for any time "away" from clinical rotations. Forms are available at: <https://www.vcom.edu/academics/clinical-education-third-year/forms>. The student must have this form signed by their preceptor and others designated on the form to obtain an excused absence and must be provided to the DSME and the Office of Clinical Affairs through the site coordinator. The form must be completed prior to the beginning of the leave. If an emergency does not allow the student to submit this prior to the absence, the "Excused Absence Clinical Rotations Approval" form must be submitted as soon as the student is physically able to complete the form. In addition to completion of the form, students must contact the Department of Clinical Affairs, the Site Coordinator, and the preceptor's office by 8:30 AM on the day they will be absent due to an illness or emergency. No excused absence will be granted after the fact, except in emergencies as verified by the Associate Dean for Clinical Affairs.

Regardless of an excused absence, students must still complete a minimum of 160 hours for a 4-week rotation in order to pass the rotation. Any time missed must be remediated during the course of the rotation for credit to be issued. Students may remediate up to four missed days or 48 hours missed during any rotation period by working on normal days off. OMS 3 students who have any unexcused absences will be referred to the PESB.

B. Prohibited Use of External Accelerators

At times, there may be lectures on VCOMTV where completion will be documented as part of passing the course (these will be clearly indicated in the course syllabus). For these lectures, the use of an external accelerator is prohibited, as VCOMTV is unable to track completion through these programs. If a student uses an external accelerator for these assignments, they will be required to re-watch the lecture(s) in VCOMTV within the required timeline. Failure to document a student's completion of these assignments within the required timeline due to use of an external accelerator may result in failure of the course.

VIII. Professionalism and Ethics

It is advised that students review and adhere to all behavioral policies including attendance, plagiarism, dress code, and other aspects of professionalism. Behavioral policies may be found in the [College Catalog and Student Handbook](#).

A. VCOM Honor Code

The VCOM Honor Code is based on the fundamental belief that every student is worthy of trust and that trusting a student is an integral component in making them worthy of trust. Consistent with honor code policy, by beginning this exam, I certify that I have neither given nor received any unauthorized assistance on this assignment, where "unauthorized assistance" is as defined by the Honor Code Committee. By beginning and submitting this exam, I am confirming adherence to the VCOM Honor Code. A full description of the VCOM Honor Code can be found in the [College Catalog and Student Handbook](#).

IX. Syllabus and Rotation Schedule

Please use this syllabus as a guide, paying particular attention to the learning objectives as an outline of what you are expected to know for each topic/module. Refer to the rotation calendar for specific dates of exams.

The faculty of the course will make every effort to adhere to the syllabus and rotation schedule; however, the Office of Clinical Affairs reserves the right to make changes to the syllabus; including changes to examinations, quizzes, modules, homework or other assignments; and/or the schedule with as much advance notice as possible. These changes will be communicated to the students in writing via Canvas or email.

X. Pre-requisites to a Successful Clerkship

Prior to beginning the rotation it would be advisable to review the [Video on Surgery Scrubbing Technique](#) found on VCOM-TV.

XI. Clinical Curriculum

In addition to the topics below with reading references and learning objectives, students must also complete the assigned clinical cases and the assigned Aquifer Radiology cases. The content of the end-of-rotation exams will be based upon the learning objectives and reading assignments, including OMM, in this syllabus, the clinical case modules, and the Aquifer Radiology cases and their associated references. The clinical case modules must be submitted in Canvas at: <https://canvas.vcom.edu>

1. Acute Abdomen

Reading Assignment: Sabiston Textbook of Surgery, pages 1134-1149

Module: [Module 9 - Acute Abd SBO and Appendicitis](#)

Learning Objectives:

- i. Define what is meant by Acute Abdomen.
- ii. Discuss the anatomy of the region.
- iii. Describe the investigative studies used in the workup of the acute abdomen.
- iv. Discuss the role of laparoscopy.

- v. Develop a differential diagnosis for a patient with an acute abdomen.
- vi. Describe the algorithm for management of the acute abdomen.
- vii. Describe the indications and preparation for surgical exploration.
- viii. Discuss pre-operative management.
- ix. Discuss the preparation for emergency surgery.

2. Adrenal Masses

Reading Assignment: Sabiston Textbook of Surgery, pages 964-995

Module: [Module 10 - Adrenal Disorders](#)

Learning Objectives:

- i. Define the work-up of an adrenal mass noted incidentally (incidentaloma) on a CT scan.
- ii. Define the basic physiology of aldosterone secreting tumors (Conn syndrome).
- iii. Define the basic physiology of pheochromocytoma. Understand the basic diagnostic work-up. Learn the rule of 10's as a mnemonic tool (10% malignant, 10% bilateral, 10% extra-adrenal, 10% familial p980). Define which MEN syndrome is related to pheochromocytoma.
- iv. Define glucocorticoid physiology and the difference between Cushing syndrome and Cushing disease.
- v. Identify the characteristics of adrenal cortical carcinomas (size, symptoms, CT appearance).
- vi. Identify the indications for, and the risks and benefits of, biopsy of an adrenal mass.
- vii. Compare open versus laparoscopic adrenalectomy and define the major complications of adrenal surgery and the anatomy of the region.

3. Anorectal Disease

Reading Assignment: Sabiston Textbook of Surgery, pages 1390-1418

Module: [Module 4 - Anorectal Disease, Anesthesia, Wound Healing](#)

Learning Objectives:

- i. Identify the important anatomical landmarks of the anorectal area.
- ii. Define the causes and treatment of pelvic floor disorders, including incontinence.
- iii. Define the causes and treatment of pelvic floor disorders, including:
 - a. urinary obstruction
 - b. rectal prolapse
- iv. List a differential diagnosis for a patient with perianal pain.
- v. Identify the signs, symptoms and treatment plan, including non-operative intervention and timing, for the following conditions. Discuss the characteristic history including, character and duration of complaint, presence or absence of associated bleeding and relationship of complaint to defecation. Indicate in which part of exam (external, digital, anosopic, or proctoscopic) these findings are identified.
 - a. Hemorrhoids
 - b. Anal fissures
 - c. Perianal fistulas
 - d. Perianal abscess
 - e. Pilonidal disease
 - f. Hidradenitis
 - g. Perianal condyloma
 - h. Crohn's Disease
 - i. Anal tumors

4. Appendicitis

Reading Assignment: Sabiston Textbook of Surgery, pages 304, 1301-1317

Online Case: [Aquifer Radiology Case 6](#)

Module: [Module 9 - Acute Abd SBO and Appendicitis](#)

Learning Objectives:

- i. Describe the anatomy of the appendix and its relation to other abdominal and retroperitoneal structures.
- ii. Describe the pathophysiology and clinical presentation of acute appendicitis. Discuss its diagnosis and differential diagnosis (be specific regarding different age groups and male vs. female).
- iii. Describe the diagnostic algorithm for appendicitis.
- iv. Describe the management of uncomplicated appendicitis.
- v. Discuss perforated appendix and an appendiceal abscess.
- vi. Discuss chronic or recurring appendicitis.
- vii. Describe appendicitis occurring in the elderly.
- viii. Describe the diagnosis and treatment of appendiceal cancer.
- ix. Recognize the special physical signs that are relevant to appendicitis:
 - a. McBurney's Point tenderness
 - b. Positive Rovsing's Sign
 - c. Positive Psoas Sign
- x. Describe the roles of US, CT, and MRI in the diagnosis of appendicitis.

5. Anesthesia

Reading Assignment: Sabiston Textbook of Surgery, pages 217-218, 324-340

Modules:

- [Module 3 - Burn Management, Principles of Pre-Post Op, Anesthesia, Wound Healing](#)
- [Module 4 - Anorectal Disease, Anesthesia, Wound Healing](#)

Learning Objectives:

- i. Describe preoperative evaluation for the patient undergoing anesthesia.
- ii. Describe airway assessment.
- iii. Describe assessment of physical status using the ASA classification.
- iv. Recognize the risks of death or major complications with anesthesia.
- v. Discuss the pharmacology and risks of local anesthetics.
- vi. Describe the factors behind selection of anesthetic techniques.
- vii. Identify the benefits and risks among the regional anesthetic techniques including local, spinal, epidural and peripheral blocks.
- viii. Describe "Conscious Sedation", its benefits and risks.
- ix. Recognize malignant hyperthermia and its treatment.
- x. Recognize potential complications in post-anesthesia care:
 - a. respiratory complications
 - b. nausea and vomiting
 - c. hypothermia
 - d. circulatory complications
- xi. Describe the common osteopathic structural findings associated with atelectasis and mechanical ventilation.
 - a. Identify specific indications and contraindications for OMM in patients undergoing anesthesia and mechanical ventilation.
 - b. Identify OMM treatment approaches to the care of patients with atelectasis and those on mechanical ventilation.

6. Bowel Obstruction

Reading Assignment: Sabiston Textbook of Surgery, pages 303-304, 1250-1258, 1339-1344

Module: [Module 9 - Acute Abd SBO and Appendicitis](#)

Learning Objectives:

- i. Describe the pathophysiology behind SBO and its typical etiologies.
- ii. Discuss the clinical manifestations and diagnosis of SBO including:
 - a. history
 - b. physical examination
 - c. radiologic and laboratory studies
- iii. Describe the causes of and the terms used to describe postoperative bowel obstruction.
- iv. Describe the causes of and terms used to describe ileus.
 - a. Describe the sympathetic and parasympathetic innervation to the colon.
 - b. Identify the effects of hypersympathetic and hyperparasympathetic tone on the GI system.
- v. Discuss the nuances of simple versus strangulated obstruction.
- vi. Describe diagnostic modalities for diagnosing SBO.
- vii. Discuss treatment of SBO to include:
 - a. fluid resuscitation and antibiotics
 - b. tube decompression
 - c. operative management
- viii. Describe the unique aspects of etiology, diagnosis, and treatment of SBO in the geriatric population.
- ix. Discuss the presentation of patients with postoperative small bowel obstruction (SBO).
- x. Discuss management of specific SBO issues including:
 - a. recurrent intestinal obstruction
 - b. acute postoperative obstruction
 - c. ileus
- xi. Identify OMM treatment plans for the care of patients with ileus.
 - a. Identify specific indications and contraindications for OMM in pre- and post-operative patients.
 - b. Describe OMM techniques directed at addressing hyper sympathetic and hyperparasympathetic tone.
 - c. Demonstrate proficiency in the evaluation and appropriate direct and/or indirect osteopathic treatment for somatic dysfunctions found commonly in post-surgical patients.
 - d. Osteopathic techniques reviewed in lab may include any of the following techniques:
 - 1) Direct Techniques
 - a) Direct MFR to horizontal diaphragms
 - b) Direct MFR cervical region
 - c) Rib Raising Direct MFR/Inhibition/articulatory
 - d) Sacral Rocking
 - e) Direct MFR-Arcuate ligaments
 - 2) Indirect Techniques
 - a) BLT ribs
 - b) Thoracic Pump
 - c) Abdominal Pump
 - d) Pedal Pump
 - e) Thoracolumbar paraspinal inhibition
 - f) Mesenteric Ganglion Release
 - g) Mesenteric Release small and large intestines
 - h) Colonic Milking
 - i) Indirect MFR to horizontal

- xii. Discuss the classification, diagnosis and treatment of Large Bowel Obstruction (LBO) and pseudo obstruction.
- xiii. Describe Ogilvie's Syndrome.
- xiv. Discuss the diagnosis and treatment of LBO.

7. Breast Disorders and Breast Cancer

Reading Assignment: Sabiston Textbook of Surgery, pages 809-871

Module: [Module 2 - Disorders of Breast, Principles of Pre-Post Op](#)

Learning Objectives:

- i. Recognize the anatomy of the breast and its lymphatic drainage.
- ii. Describe breast development and physiology, both normal and abnormal.
- iii. Describe the diagnosis of breast disease (breast cancer, fibro-adenoma, breast cysts, fibrocystic change, papilloma) and the use of radiographic-guided needle biopsy techniques for diagnosis.
- iv. Describe breast imaging (mammography, ultrasonography, MRI) and the limitations of each modality.
- v. Describe the current recommendations for screening management both for low risk and high-risk patients regarding breast cancer.
- vi. Identify and manage high-risk breast patients.
 - a. Describe the Gail model and how it is useful to primary care physicians.
 - b. Describe the more common genetic aberrations that lead to an increase in risk for development of breast cancer.
- vii. Describe benign breast tumors and related diseases with attention to diagnosis and treatment.
 - a. Recognize breast pain vs. chest wall pain and the differential diagnosis and treatment.
 - b. Describe treatment options for cyclical breast pain.
 - c. Define pathologic nipple discharge and its work-up and treatment.
- viii. Describe staging systems (TNM) used in breast cancer and the more common pathologic types.
- ix. Discuss the surgical treatment issues in breast cancer.
 - a. Breast preservation vs. mastectomy
 - b. Sentinel node biopsy
 - c. Post-mastectomy reconstruction
- x. Describe the modern concept of breast cancer classification using molecular markers.
- xi. Recall the incidence of breast cancer with individuals with BRCA gene mutations.
- xii. Discuss preventive measures that may mitigate the risk of hereditary breast development in individuals with BRCA gene mutations (including prophylactic mastectomy).
- xiii. Discuss adjuvant chemo- and radio- therapies.
- xiv. Describe recognition and treatment of special conditions including:
 - a. Disease in the elderly
 - b. Chronic subareolar breast abscesses
 - c. Paget's disease
 - d. Breast cancer in men

8. Burn Management

Reading Assignment: Sabiston Textbook of Surgery, pages 484-505

Module: [Module 3 - Burn Management, Principles of Pre-Post Op, Anesthesia, Wound Healing](#)

Learning Objectives:

- i. Describe the more common types of burns and the most common types of burns and their mechanisms of injury.
- ii. Recognize the role of education and prevention.
- iii. Recognize the difference between chemical, electrical and thermal injuries.
- iv. Define superficial burns (1st degree), partial thickness burns (2nd degree), and full thickness burns (3rd degree).

- v. Define emergency care of superficial (1st degree) and uncomplicated partial thickness burns (2nd degree).
- vi. Define the rule of Nines for burn assessment.
- vii. Define criteria for transfer to a major burn center.
- viii. Recognize the rationale for burn resuscitation for major burns.
- ix. Recognize the Parkland and similar formulas and recognize the magnitude of fluid that may be required to manage a major burn.
- x. Recognize inhalational injury - the importance of careful assessment of patients burned in closed spaces (apartments, garages, etc.).
- xi. Recognize the necessity of tetanus prophylaxis in burns.
- xii. Recognize the basics of treatment of chemical burns in the emergency setting.

9. Cholecystitis and Biliary System Disease

Reading Assignment: Sabiston Textbook of Surgery, pages 1432-1435, 1489-1514

Online Case: [Aquifer Radiology Case 6](#)

Module: [Module 11 - Cholecystitis and Hepatobiliary System and Pancreatic Disorders](#)

Learning Objectives:

- i. Describe the anatomical arrangement of the hepatobiliary system.
- ii. Discuss the general considerations of biliary tree disease, including:
 - a. biliary colic
 - b. fever
 - c. jaundice
 - d. cholangitis
- iii. Identify pertinent historical and physical examination facts related to gallbladder disease, including:
 - a. gallstones
 - b. acute and chronic cholecystitis
 - c. emphysematous cholecystitis
 - d. gallstone ileus
 - e. bacterial cholangitis
 - f. choledocholithiasis
 - g. biliary dyskinesia
 - h. Sphincter of Oddi dysfunction
- iv. Differentiate among the various diagnostic modalities used to diagnose hepatobiliary disease (ultrasonography, CT scan, HIDA scan, MRCP).
- v. Describe treatment options for the above hepatobiliary disorders including laparoscopic or open cholecystectomy and ERCP.
- vi. Describe the indications for selective cholangiography.
- vii. Discuss the complications in dealing with these disorders, including:
 - a. bile duct injury
 - b. lost stones
 - c. postcholecystectomy pain
 - d. retained biliary stones
 - e. biliary leak
- viii. Describe the recognition and treatment of post cholecystectomy syndromes.
- ix. Discuss noncalculous biliary disease, its diagnosis and management.
- x. Describe the appropriate imaging management for suspected acute cholecystitis.
- xi. Describe the use of nuclear medicine hepatobiliary scanning findings in suspected acute cholecystitis.
- xii. Describe what a MRCP scan is and identify the most common indication.
- xiii. Describe the appropriate imaging management for biliary obstruction with different presentations.

10. Colon Cancer

Reading Assignment: Sabiston Textbook of Surgery, pages 1361-1389

Module: [Module 12 - Colon Cancer](#)

Learning Objectives:

- i. Discuss colorectal cancer genetics and specific genetic mutations.
 - a. Describe what is meant by “mismatch repair genes.
 - b. Discuss the adenoma-carcinoma sequence.
 - c. Discuss Lynch syndrome.
- ii. Describe Colorectal polyps, their diagnosis and management.
- iii. Describe the epidemiology of colorectal cancer regarding prevalence in different parts of the colon, age at diagnosis, gender predilection (if any), frequency of hereditary versus sporadic.
- iv. Discuss the importance of screening colonoscopy as a way to decrease colorectal cancer mortality.
- v. Describe the preoperative workup (staging) for a patient diagnosed with colorectal cancer.
- vi. Discuss the surgical management of colon cancer with respect to the location in the colon.
- vii. Discuss the role of chemotherapy in colorectal cancer and the role of radiotherapy for colorectal cancer.
- viii. Describe the main postoperative complications for colon resections for colorectal carcinoma.
- ix. Describe the indications for temporary and permanent colostomy, including rectal cancer, Hartmann’s Procedure, large bowel obstruction (diverting colostomy).

11. Diverticulitis

Reading Assignment: Sabiston Textbook of Surgery, pages 1337-1340

Module: [Module 6 - Diverticulitis and Diverticulosis](#)

Learning Objectives:

- i. Define diverticular disease.
- ii. Discuss the anatomy and pathogenesis of diverticular disease.
- iii. Describe the Hinchey Classification used to assess severity of disease.
- iv. Compare the diagnosis and treatment of uncomplicated and complicated diverticulitis.
- v. Define a treatment algorithm based on pathology (perforated vs. nonperforated, abscess vs. no abscess etc.).
- vi. Define the impact of patient condition, physical findings such as localized or generalized peritonitis, and CT findings on your treatment plan.
- vii. Identify the appropriate antibiotics for treatment of diverticulitis.
- viii. Identify which patients require interventional radiology for abscess drainage.
- ix. Define which patients require urgent surgical intervention.
 - x. Define which patients require a colostomy.
- xi. Describe the surgical technique for primary anastomosis and Hartmann’s procedure.
- xii. Describe the management of patients with recurrent diverticulitis.
- xiii. Discuss the diagnosis and treatment of complications of diverticulitis including abscess, fistula, generalized peritonitis, pneumoperitoneum, bowel stricture/obstruction.

12. Head and Neck Tumors

Reading Assignment: Sabiston Textbook of Surgery, pages 770-807

Module: [Module 7 - Head and Neck Tumors](#)

Learning Objectives:

- i. Recognize the etiology and most common clinical findings found in sialolithiasis and sialadenitis.
- ii. Understand the systemic illnesses or conditions that are associated with salivary gland disorders.
- iii. List the most common tumors of the salivary glands, presentations, workup and treatment.
- iv. Understand the physical findings of parotid, salivary and oral tumors.
- v. Identify the most common oral cancers.
- vi. Understand HPV and smoking risks associated with oral cancers.

- vii. Understand the risks of salivary gland and oral cancer surgery.
- viii. Define primary hyperparathyroidism including basic issues regarding the diagnosis, gland localization and surgical options.

13. Inguinal Hernia

Reading Assignment: Sabiston Textbook of Surgery, pages 1105-1133

Module: [Module 8 - Inguinal Hernia](#)

Learning Objectives:

- i. Describe the epidemiology of inguinal hernia (Age, gender, activities, etc.).
- ii. Describe the anatomy of the inguinal region as it pertains to indirect, direct, and femoral hernias.
- iii. Define the key historical and physical findings in the diagnosis of an inguinal hernia.
- iv. List the differential diagnosis for:
 - a. groin masses
 - b. scrotal masses
- v. Define nonoperative management of an inguinal hernia.
- vi. Define the operative management of inguinal hernias.
- vii. Define the diagnosis and management of a:
 - a. sliding inguinal hernia.
 - b. strangulated inguinal hernia.
 - c. bilateral inguinal hernias.
- viii. Define surgical site infection as a complication of inguinal hernia repair.
- ix. Define the nerve injuries that occur as a complication of inguinal hernia repair.
- x. Define injury to the spermatic cord, ischemic orchitis and testicular atrophy as a complication of inguinal hernia repair.
- xi. Define inguinal hernia recurrence as a complication of inguinal hernia repair.
- xii. List the pros and cons of open vs. laparoscopic repair of inguinal hernias including the rationale for using synthetic mesh for most inguinal hernia repairs.

14. Laceration and Suturing

Reading Assignment: Rakel Textbook of Family Medicine, Chapter 28, pages 594, 602-605, and 608 (Available in electronic format on the VCOM Library)

Module: [Module 1 - Wound Healing, Suturing and Lacerations](#)

Learning Objectives:

- i. Recognize the elements of an initial evaluation of patients with lacerations.
- ii. Discuss the importance of tetanus vaccination and indications.
- iii. Describe local anesthetics and their duration of action.
- iv. Discuss the different types of suture techniques and their indications.
- v. Describe the different types of suture material according to site and extent of laceration.
- vi. Discuss management of complicated lacerations.
- vii. Recognize the importance of the time of suture removal.
- viii. Recognize the use of tissue adhesive and when it can be utilized.
- ix. Recognize relaxed skin tension lines and the importance with skin closure.
- x. Educate patients on proper wound care after laceration repair.
- xi. Recognize an abscessed wound and the appropriate treatment.

15. Lung Cancer

Reading Assignment: Sabiston Textbook of Surgery, pages 1583-1603

Online Case: [Aquifer Radiology Case 2](#)

Module: [Module 5 - Lung Cancer](#)

Learning Objectives:

- i. Describe the anatomy of the lung.
- ii. Describe the physiologic evaluation of the lung.

- iii. Describe the epidemiology of lung cancer.
 - a. Prevalence
 - b. gender risks
 - c. age risks
 - d. screening recommendations, including indications for low dose CT scanning
- iv. Recognize the difference between the pathologic types:
 - a. adenocarcinoma
 - b. squamous cell carcinoma
 - c. small cell carcinoma
- v. Describe the history and physical exam finding in lung cancer.
- vi. Describe the diagnostic workup in lung cancer.
- vii. Define the staging of lung cancer.
- viii. Describe the surgical treatment of lung cancer and the multi-specialty approach to lung cancer.
- ix. Describe the recommended follow-up algorithm for a lung cancer patient.
- x. Describe the current recommendations for preoperative chest radiographs.
- xi. Describe the current recommendations for low-dose CT lung cancer screening.
- xii. Explain the use of FDG PET imaging in the evaluation of pulmonary nodules.
- xiii. Describe contraindications and common complications of percutaneous lung biopsies.
- xiv. Recognize typical signs of a pneumothorax on upright and supine radiographs.
- xv. Recognize typical signs of a tension pneumothorax and explain its consequences.
- xvi. Describe options for treating pneumothorax.
- xvii. Compare and contrast the appearances of different etiologies that may cause complete opacification of a hemithorax.

16. Pancreatic Disease

Reading Assignment: Sabiston Textbook of Surgery, pages 1533-1544, 1551-1558

Module: [Module 11 - Cholecystitis and Hepatobiliary System and Pancreatic Disorders](#)

Learning Objectives:

- i. Define and classify pancreatitis.
- ii. Describe the risk factors associated with acute pancreatitis (AP).
- iii. Define the pathophysiology of AP.
- iv. Define the clinical manifestations of AP.
- v. Define the diagnosis and differential diagnosis of AP.
- vi. Define the treatment for an episode of AP.
- vii. Define the role of ERCP in the treatment of AP.
- viii. Define the role of laparoscopic cholecystectomy in the treatment of acute pancreatitis.
- ix. Define the treatment of complications of pancreatitis including:
 - a. Peripancreatic fluid collections
 - b. pancreatic necrosis
 - c. pancreatic pseudocysts
 - d. pancreatic ascites
 - e. pancreatocutaneous fistula
 - f. vascular complications
- x. Define the assessment tools used for prognosis including Ranson's Criteria for non-gallstone pancreatitis.
- xi. Define the pathology, etiology, diagnosis and treatment of chronic pancreatitis.
- xii. Define the management of chronic pain associated with pancreatitis.
- xiii. Define malignant pancreatic tumors, their diagnosis, treatment and prognosis.

17. Pediatric Inguinal Hernia and Hydrocele

Reading Assignment: Sabiston Textbook of Surgery, page 1868-1869

Module: [Module 14 - Pediatric Inguinal Hernia](#)

Learning Objectives:

- i. Define testicular descent and its relationship to pediatric inguinal hernias.
- ii. Define the approach to a groin mass in a child.
- iii. Identify the type of inguinal hernia that is most common in infants and children.
- iv. Define reducible and non-reducible hernia.
- v. Define the anatomy of an inguinal hernia including open vs obliterated processes vaginalis.
- vi. Define the anatomy of a hydrocele in a child.
- vii. Define communicating hydrocele.
- viii. Define non-communicating hydrocele.
- ix. Define the surgical approach to inguinal hernias in children.
- x. List the complications related to inguinal hernias in children.

18. Principles of Preoperative, Operative, and Postoperative Surgery

Reading Assignment: Sabiston Textbook of Surgery, pages 187-314

Modules:

- [Module 2 - Disorders of Breast, Principles of Pre-Post Op](#)
- [Module 3 - Burn Management, Principles of Pre-Post Op, Anesthesia, Wound Healing](#)

Learning Objectives:

- i. Describe pre-operative, peri-operative and post-operative periods.
- ii. Describe the goal of a pre-operative evaluation.
- iii. Describe the top patient risk factors most predictive of post-operative mortality.
- iv. Describe the system used to categorize general risk using the American Society of Anesthesiologist (ASA) classification.
- v. Identify the role of OMM in surgical patients, both pre and post operatively.
- vi. Describe a systems approach to preoperative evaluation considering the following topics:
 - a. Cardiovascular
 - 1) Revised Cardiac Risk Index using six predictors
 - 2) “Stepwise approach to preoperative cardiac assessment for non-cardiac surgery”
 - 3) Timing of surgery after PTCA and MI
 - 4) Ability to climb stairs
 - b. Pulmonary
 - 1) Indications for PFT’s
 - 2) Risk factors for post-op complications
 - c. Renal
 - 1) Relationship to cardiac complications
 - 2) Timing of dialysis
 - d. Hepatobiliary
 - 1) Child-Pugh classification
 - e. Endocrine
 - 1) Insulin dosing
 - 2) Steroid dosing
 - f. Immunologic
 - 1) Steroids
 - g. Hematologic
 - 1) Guidelines for RBC transfusion
 - 2) Management of patients on chronic anticoagulation
- vii. Define the considerations given to the following surgical issues:
 - a. Age
 - b. Risk factors for post-op delirium

- c. Nutritional status
 - d. Obesity
- viii. Identify indications for antibiotic prophylaxis based on the types of operative wounds listed by the National Research Council.
- ix. Identify the logic and evidence of pre-operative fasting.
- x. Recognize the usual presentation and treatment for the following causes of intra-operative instability:
 - a. Myocardial infarction
 - b. Pulmonary embolism
 - c. Pneumothorax
 - d. Malignant hyperthermia
 - e. Anaphylaxis and latex allergy
- xi. Recognize Universal Protocol with respect to Wrong-Site Surgery.

19. Skin Cancer

Reading Assignment: Sabiston Textbook of Surgery, pages 705-730

Module: [Module 17-Skin Cancer](#)

Learning Objectives:

- i. Describe risk factors and treatment options for Basal Cell Carcinoma.
- ii. Describe risk factors and treatment options for Squamous Cell Carcinoma.
- iii. Recognize the risk factors for melanoma including pre-existing lesions and association with other cancers with gene mutations.
- iv. Describe the physical appearance of a melanoma (ABCDE).
- v. Describe Breslow's thickness and recognize Clark's levels and their relevance to prognosis, treatment, and survival.
- vi. Describe the surgical treatment options for melanoma including width of surgical margins and indications for sentinel node biopsy.
- vii. Describe the indication for sentinel node biopsy and subsequent treatment in the biopsy is positive.
- viii. Recognize treatment alternatives for metastatic melanoma.
- ix. Recognize the risk of developing skin cancer in transplant patients and the necessity for life-long surveillance.
- x. Define Merkel Cell Carcinoma and treatment options.

20. Surgical Treatment of Thyroid Disease

Reading Assignment: Sabiston Textbook of Surgery, pages 873-920

Module: [Module 13 - Thyroid Disorders](#)

Learning Objectives:

- i. Discuss the epidemiology of thyroid nodules (changing prevalence, gender variance, predisposing conditions).
- ii. Describe the typical symptoms of goiter and hyperthyroidism and the physical examination of the thyroid gland.
- iii. Describe the work-up of thyroid nodules (TSH, ultrasound, fine needle aspiration).
- iv. Describe the indications (and alternative treatments) for surgical treatment of thyroid disease. Including: thyroid nodules, thyroid cancer, and hyperthyroidism.
- v. Describe the general conduct of thyroid surgery including the relevant anatomy and common complications, including recurrent laryngeal nerve injury and parathyroid gland injury.
- vi. Compare the four major types of thyroid cancer and differentiate them according to: prognosis, potential sites of metastases, need for post-operative treatment (radio-iodine, chemotherapy, etc.).

21. Trauma Resuscitation

Reading Assignment: Sabiston Textbook of Surgery, pages 386-428

Online Case: [Aquifer Radiology Case 3](#)

Module: [Module 15 - Trauma Resuscitation](#)

Learning Objectives:

- i. Describe the ABCDE of the primary survey.
- ii. Describe airway management including indications and means of definitive airway control including:
 - a. Endotracheal intubation
 - b. Cricothyroidotomy
- iii. Recognize basic chest injuries and radiographic trauma and their treatment including:
 - a. Simple pneumothorax
 - b. Tension pneumothorax
 - c. Hemothorax
 - d. Flail chest
- iv. Define the appropriate role for CT in suspected chest/abdomen/pelvis trauma.
- v. Define means to determine adequacy of circulation.
- vi. Define means to control external bleeding.
- vii. Define means to gain emergent vascular access including intraosseous needle insertion and the Seldinger technique for central venous access.
- viii. Define means to determine neurologic deficits including the Glasgow Coma Score and AVPU.
- ix. Define the steps and importance of complete patient exposure including log rolling, identification of a spinal “step off”, digital rectal exam, and the prevention of hypothermia.
- x. Define the secondary survey.
- xi. Define the role of the trauma team leader.

22. Wound Healing

Reading Assignment: Sabiston Textbook of Surgery, pages 119-149

Modules:

- [Module 1 - Wound Healing, Suturing and Lacerations](#)
- [Module 3 - Burn Management, Principles of Pre-Post Op, Anesthesia, Wound Healing](#)
- [Module 4 - Anorectal Disease, Anesthesia, Wound Healing](#)

Learning Objectives:

- i. Describe the tissue response in the phases of wound healing.
- ii. Discuss the importance of macrophages in wound healing.
- iii. Describe the Collagen Synthesis and its relevance to wound healing.
- iv. Recognize the factors that inhibit wound healing.
- v. Define Keloid and Methods for possible prevention and treatment.
- vi. Describe the characteristics of an ideal wound dressing.
- vii. Discuss the different treatment options for chronic open wounds.
- viii. Identify the characteristics of fetal wound healing.
- ix. Discuss the importance of tissue engineering and when it is applicable to open wounds.

23. Pain Management

Reading Assignment: Sabiston Textbook of Surgery, pages 340-346

Module: [Module 16 - Pain Management](#)

Learning Objectives:

- i. Describe the importance of pain control in the post-operative period.
- ii. Describe the assessment of pain by exams and scales.
- iii. Compare and contrast the different type of narcotics used in pain control.
- iv. Recognize the role of non-narcotic methods and medicines available for pain control.

- v. Recognize the variability in management based on special patient populations (Pediatrics, Geriatrics and Acute pain management in Chronic Pain Management patients).
- vi. Recognize the side-effects and complications of the use of opioids.
- vii. Describe different treatment options for complications in both acute and chronic use of opioids.
- viii. Recognize the importance of the proper documentation of prescribing narcotics.
- ix. Recognize the signs of opioid addiction, tolerance, dependence and abuse.
- x. Define how to effectively manage opioid addiction.
- xi. Describe the role of OMT in acute and chronic pain management.
 - a. Identify specific indications and contraindications to OMT in acute and chronic pain management.
 - b. List the signs and symptoms associated with autonomic dysregulation in acute and chronic pain.
 - c. Develop appropriate OMT treatment plans to address common acute and chronic pain scenarios.