



Edward Via College of Osteopathic Medicine

4th Year Clinical Rotation: Cardiology

MED 8200: Medical Selective Clinical Rotation I

COURSE SYLLABUS

Chair	Contact Information
Megan Thomas, DO Chair of Internal Medicine - VC	Phone: 540-231-0375 Email: mcthomas@vcom.vt.edu
Teresa Kilgore, DO Chair of Internal Medicine - CC	Phone: 864-327-9817 Email: tkilgore@carolinas.vcom.edu
Andy Langley, DO Chair of Internal Medicine - AC	Phone: 334-442-4070 Email: dlangley@auburn.vcom.edu

I. Rotation Description

Students will learn to identify the diagnostic criteria and principles of management for the most common cardiovascular disorders, understand the benefits, limitations and appropriateness of cardiovascular diagnostic studies including echo, ETT, cardiac catheterization, holter monitoring, stress electrocardiography and competently interpret EKGs. The curriculum is taught through VCOM TV on-line lectures, on-line case modules and presentations, assigned readings, bedside and clinic teaching, journal clubs, grand rounds, and through one-on-one student-preceptor experience in caring for patients in the clinical setting.

II. Rotation Objectives

- a. Demonstrate understanding of how to conduct a complete cardiovascular history and cardiac centered physical examination
- b. Understand the changes in cardiovascular physiology with age
- c. Understand risk factors for coronary artery disease and the interventions necessary to correct them
- d. Understand indications for the following examinations:
 1. Electrocardiography
 2. Chest X-ray
 3. Stress testing (including treadmill/bicycle and pharmacological techniques)
 4. Echocardiography imaging (both rest and stress using treadmill/bicycle or pharmacologic techniques)
 5. ECG monitoring (in hospital and ambulatory)
 6. Vascular doppler and ultrasound examination
- e. Understand indications and complications of the following:
 1. Diagnostic cardiac catheterization and angiography
 2. Intracoronary and peripheral vascular intervention using appropriate devices
 3. Diagnostic carotid and peripheral vascular angiography
 4. Internal monitoring devices (central venous and peripheral arterial)

5. Electrophysiologic studies
- f. Understand indications and contraindications of the following therapeutic interventions:
 1. Coronary artery bypass
 2. Stenting
 3. Angioplasty
 4. Pacemaker insertion
 5. Valve replacement or repair, percutaneous balloon valvotomy
 6. Electrophysiologic ablation
- g. Interpret laboratory information of the following:
 1. Cardiac enzymes
 2. Lipids
- h. Demonstrate understanding of the following specific diseases/conditions:
 1. Coronary artery disease
 - i. Stable/unstable angina
 - ii. Myocardial infarction with and without complications
 - iii. Sudden death
 2. Syncope
 3. Arrhythmias (tachyarrhythmias and bradyarrhythmias)
 - i. Supraventricular tachycardia, atrial fibrillation and atrial flutter
 - ii. Ventricular fibrillation and tachycardia, Torsades des pointes
 4. Hypertension
 5. Cor Pulmonale
 6. Congestive heart failure (systolic and diastolic dysfunction)
 7. Thromboembolic disease
 8. Congenital heart disease
 9. Dissecting aneurysm
 10. Innocent vs. significant heart murmurs
 11. Peripheral vascular disease
 12. Cardiomyopathies
 13. Pericardial disease
 14. Evaluation of cardiac patient for non-cardiac surgery
 15. Antibiotic prophylaxis for and management of valvular disease
 - i. Aortic stenosis and Aortic insufficiency
 - ii. Pulsus Paradoxicus
 - iii. Mitral valve prolapse
 - iv. Mitral valve regurgitation
 16. Develop the basic skills to perform the following:
 - i. A focused cardiology exam
 - ii. Recognizing cardiac risk factors and the interventions necessary to correct them
 - iii. Identify the importance of a fixed split S2, diminished S1
 - iv. Performing and interpreting EKGs
 - v. Acute MI protocol
 - vi. ACLS
 - vii. Use of common cardiac medications
 - viii. Interpret cardiac enzymes
 - ix. The cardiac history and physical for surgery clearance
 17. Demonstrate understanding of the following techniques and procedures:
 - i. 2D echo
 - ii. Stress ECHO

- iii. TEE
 - iv. Cardiac stress testing
 - v. Cardiac catheterization
 - vi. Cardioversion
 - vii. Pacers
18. Effectively integrate osteopathic philosophies and clinical skills in the practice of cardiology by:
- i. Assuring the patient is considered as the whole person and each system that may be affected by cardiac disease
 - ii. Understanding and treating the psychosocial impact of chronic disease
 - iii. Utilizing Chapman's points for diagnosis and treatment that relates to cardiovascular disease
 - iv. Identifying the T1-T4 components of the cardiac system as it relates to abnormalities that may occur within the system in relation to both diagnosis and treatment

III. Rotation Design

The cardiology rotation occurs in the hospital as a consulting service and in the clinic setting.

IV. Credits

4 week course = 4 credit hours

V. Suggested Textbook and References

- a. Hurst's *The Heart*, 13th ed. Available on AccessMedicine
 - 1. Ch. 14 – The History, Physical Examination and Cardiac Auscultation
 - 2. Ch. 18 – Echocardiography
 - 3. Ch. 19 – Cardiac Catheterization, Cardiac Angiography and Coronary Blood Flow and Pressure Measurements
 - 4. Ch. 27 – The Epidemiology and Diagnosis of Heart Failure
 - 5. Ch. 28 – Diagnosis and Management of Heart Failure
- b. Goldberger: *Clinical Electrocardiography: A Simplified Approach*, 8th ed. Available on MD Consult
 - 1. Ch. 8 – Myocardial Infarction and Ischemia, I: ST Segment Elevation and Q Wave Syndromes
 - 2. Ch. 9 – Myocardial Infarction and Ischemia, II: Non-ST Segment Elevation and Non-Q Wave Syndromes
 - 3. Ch. 15 – Supraventricular Arrhythmias, Part II: Atrial Flutter and Atrial Fibrillation
 - 4. Ch. 20 – Bradycardias and Tachycardias: Review and Differential Diagnosis

VI. Course Grading/Requirements for Successful Completion of the Cardiology Rotation

- a. Attendance according to VCOM and preceptor requirements
- b. Preceptor Evaluation at end-of-rotation

Grading policies, academic progress, and graduation requirements may be found in the *College Catalog and Student Handbook* at: <http://www.vcom.vt.edu/catalog/>.

VII. Clinical Performance Objectives

The end-of-rotation evaluation for this rotation will be completed by your preceptor and 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.

- a. Communication - the student should demonstrate the following clinical communication skills:
 1. Effective listening to patient, family, peers, and healthcare team
 2. Demonstrates compassion and respect in patient communications
 3. Effective investigation of chief complaint, medical and psychosocial history specific to the rotation
 4. Considers whole patient: social, spiritual & cultural concerns
 5. Efficiently prioritizes essential from non-essential information
 6. Assures patient understands instructions, consents & medications
 7. Presents cases in an accurate, concise, well organized manner

- b. Problem Solving – the student should demonstrate the following problem solving skills:
 1. Identify important questions and separate data in organized fashion organizing positives & negatives
 2. Discern major from minor patient problems
 3. Formulate a differential while identifying the most common diagnoses
 4. Identify indications for & apply findings from the most common radiographic and diagnostic tests
 5. Identify correct management plan considering contraindications & interactions

- c. Clinical Skills - the student should demonstrate the following problem solving skills:
 1. Assesses vital signs & triage patient according to degree of illness
 2. Perform good auscultatory, palpatory & visual skills
 3. Perform a thorough physical exam pertinent to the rotation

- d. Osteopathic Manipulative Medicine - the student should demonstrate the following skills in regards to osteopathic manipulative medicine:
 1. Apply osteopathic manipulative medicine successfully when appropriate
 2. Perform and document a thorough musculoskeletal exam
 3. Utilize palpatory skills to accurately discern physical changes that occur with various clinical disorders
 4. Apply osteopathic manipulative treatments successfully

- e. Medical Knowledge – the student should demonstrate the following in regards to medical knowledge:
 1. Identify & correlate anatomy, pathology and pathophysiology related to most disease processes
 2. Demonstrate characteristics of a self-motivated learner including demonstrating interest and enthusiasm about patient cases and research of the literature
 3. Are thorough & knowledgeable in researching evidence based literature
 4. Actively seek feedback from preceptor on areas for improvement
 5. Correlate symptoms & signs with most common diseases

- f. Professional and Ethical Behaviors - the student should demonstrate the following professional and ethical behaviors and skills:
1. Is dutiful, arrives on time & stays until all tasks are complete
 2. Consistently follows through on patient care responsibilities
 3. Accepts & readily responds to feedback, is not resistant to advice
 4. Assures professionalism in relationships with patients, staff, & peers
 5. Displays integrity & honesty in medical ability and documentation
 6. Acknowledges errors, seeks to correct errors appropriately
 7. Is well prepared for and seeks to provide high quality patient care
 8. Identifies the importance to care for underserved populations in a non-judgmental & altruistic manner
- g. Osteopathic Manipulative Medicine Components
Students must be familiar with the OMM didactic and workshop requirements for their OMS-4 year as described in the Osteopathic Manipulative Medicine website.