**Circulation**
(01/14/2013 - 03/08/2013)
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This module encompasses basic and clinical science concepts related to the cardiovascular and hematopoietic systems. Topics include normal structure and function of the cardiovascular and hematopoietic systems, including the cardiac cycle, cardiovascular pressures and flows, nutrient and oxygen delivery, and the hemostatic system. Also included are pathophysiology, epidemiology, biostatistics, interpretation of diagnostic tests, and pharmacotherapeutic and other therapeutic principles related to cardiovascular and hematopoietic disorders.

### Description

**Module Goals**

The goal of this course is to expose students to the pathogenesis and pathophysiology of disease and disorders as they pertain to the specialty of circulatory medicine including hematology. During the module, the first year medical students will come to appreciate the basic science foundation for the clinical practice of circulatory medicine. Students will gain an understanding of the non-medical factors that impact circulatory health in these areas.

### Module Pedagogy

- **Lecture:** 45 hours
- **Team Based Learning:** 14 hours
- **Self-Study and Online Cases and Labs:** 18 hours
- **Histopathology Lab:** 14 hours
- **Case-Based Group Discussion:** 28 hours
- **Conferences and Lab:** 20 hours
- **Total:** 139 hours

### Weekly Themes

**Week 1:** Normal Cardiovascular Dysfunction and HTN
**Week 2:** Cardiac Output, Heart Failure, and Anemia
**Week 3:** Valve Disease and Bradycardia
**Week 4:** Congenital Heart Disease and Tachycardia
**Week 5:** Peripheral Arterial Disease and Hemostasis
**Week 6:** Coronary Artery Disease and Tumors
**Week 7:** Bone Marrow Disorders
**Week 8:** Self-Study and Exam

### Major Competencies

2.1, 2.2, 2.3 Demonstrate knowledge of normal structure and function, pathophysiology, and clinical manifestations of common diseases of the circulatory system
2.4, 2.5 Demonstrate knowledge of the pharmacotherapeutic modalities and translational research related to common circulatory disorders
2.6 Understand the epidemiology of common circulatory disorders
3.1, 3.2, 3.3 Obtain and perform a cardiovascular history and exam, and interpret common tests such as an EKG and CBC
3.6 Demonstrate clinical reasoning and problem solving related to circulatory disorders

### Case-Based Synthesis Topics

**Week 1:** Patient with HTN
**Week 2:** Patient with Thalassemia and Heart Failure
**Week 3:** Patient with Rheumatic MS, A.fib, and CHF
**Week 4:** Cyanotic Newborn
**Week 5:** Patient with Pulmonary Embolism and DVT
**Week 6:** Patient with Acute MI, MR, and VT
**Week 7:** Adult Patient with Acute Leukemia
**Week 8:** Self-Study and Exam

<table>
<thead>
<tr>
<th>Week 4</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>8 - 8:50 AM</td>
<td>Lipoproteins, Familial Hypercholesterolemia and Hyperlipidemia (Lecture with Basic Science and Clinical Faculty)</td>
<td>Ventricular Tachycardias (Online Self-Study)</td>
<td>Imaging of Valvular and Congenital Disease (Online Self-Study)</td>
<td>Cyanosis and Tachycardia Cases (Team-Based Learning)</td>
<td>Individual and Group Quizzes</td>
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<tr>
<td>9 - 9:50 AM</td>
<td>Hyperlipidemia Drugs (Online Self-Study)</td>
<td>Congenital Heart Disease (Lecture)</td>
<td>Congenital Case Conference (Large Group)</td>
<td>Cyanosis and Tachycardia Cases (Team-Based Learning)</td>
<td>Group Case Activity (Cyanotic Newborn)</td>
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<td>10 - 10:50 AM</td>
<td>Oxidative Stress and Atherosclerosis (Online Self-Study)</td>
<td>Congenital Heart Disease (Lecture)</td>
<td>Supraventricular Tachycardias (Online Self-Study)</td>
<td>Histopathology Lab (Congenital Disease and Atherosclerosis/Vasculitis)</td>
<td>Group Case Activity (Cyanotic Newborn)</td>
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<tr>
<td>11 - 11:50 AM</td>
<td>Peripheral Vascular Disease (Lecture)</td>
<td>Congenital Heart Disease (Lecture)</td>
<td>Palpitations Case Conference (Large Group)</td>
<td>Histopathology Lab (Congenital Disease and Atherosclerosis/Vasculitis)</td>
<td>Multidisciplinary Rounds</td>
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