

| Class | What you should read | Source |
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| Physiology of RBC | Concentration of Red Blood Cells in the Blood, Quantity of Hemoglobin in the Cells, Hemoglobin formation Iron transport and metabolism (pages 445-452), the life span of the red blood cells. Hematocrit. Oxygen-Hemoglobin Dissociation Curve | <ul style="list-style-type: none"> • Chapter 14 Cardiovascular page 177. • Unit VII Respiration, page 530 Guyton or Costanzo • Page 213 Respiratory Physiology |
| Hemostasis | Pages 483-490 | <ul style="list-style-type: none"> • Chapter 37 |
| White blood cells | White blood cells and Immunity | <ul style="list-style-type: none"> • Chapter 34, 35 |
| Blood pressure regulation of BP | Basic principles of circulatory function, Blood pressure, effects of pressure on vascular resistance and tissue blood flow, clinical methods for measuring systolic and diastolic pressure, effects of the gravitational factor on arterial and other pressures. Nervous regulation of the circulation and rapid control of arterial pressure, baroreceptor arterial pressure control system, function of the baroreceptors during changes in body posture, Bainbridge reflex | <ul style="list-style-type: none"> • Chapter 14 • Chapter 15 • Chapter 18 Guyton |
| Microcirculation and thermoregulation | Microcirculation, exchange of substances across the capillary wall, fluid exchange across the capillary, Starling equation, changes in Starling forces, mechanisms for control of regional blood flow, temperature regulation Guyton – the microcirculation and lymphatic system, capillary fluid exchange, interstitial fluid and lymph flow, local and humoral control of tissue blood flow, body temperature regulation and fever | <ul style="list-style-type: none"> • Costanzo chapter 4 – cardiovascular physiology • Guyton – whole chapter 17, 18 and 73 |
| The heart | Guyton – chapter 9 (physiology of cardiac muscle – the whole part, regulation of heart pumping – the whole part) Chapter 10 (specialized excitatory and conductive system of the heart, control of excitation and conduction in the heart) Costanzo – chapter 4 (cardiac electrophysiology, cardiac action potentials, conduction velocity, excitability and refractory periods, autonomic effects on the heart and blood vessels, cardiac muscle contraction, myocardial cell structure, excitation-contraction coupling, contractility, length-tension relationship in cardiac muscle) | <ul style="list-style-type: none"> • Guyton – chapter 9, 10 • Costanzo – chapter 4 |
| | Characteristic of the normal ECG, | <ul style="list-style-type: none"> • Chapter 11 Guyton |

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| ECG and heart sounds | voltage and time calibration of ECG, portions of the ECG which are associated with electrical activity in specific cardiac regions, characterization of intervals, , waves, and complex on ECG, bipolar limb leads, chest leads, augmented unipolar limb leads, Einthoven triangle, how the ECG provides information about cardiac dipoles as vectors, the mean QRS electrical axis, sinus arrhythmia. Heart valves and heart sounds (only physiology), chest areas from which sound from each valve is best heard, function of the heart valves. | <ul style="list-style-type: none"> • Chapter 12 Guyton • Chapter 13 Guyton • You may also additionally read from Costanzo about ECG. • Chapter 23 • Chapter 9 |
| Respiratory I | Conducting zone, respiratory zone, dead space anatomic dead space , physiologic dead space, pulmonary blood flow. Ventilation rates, minute ventilation, alveolar ventilation. Mechanics of breathing, compliance, transmural pressure, intrapleural pressure, distribution of pulmonary blood flow. Control of breathing, brain stem control of breathing, CONTROL OF BREATHING BY H ⁺ , PCO ₂ , and PO ₂ (central chemoreceptors, peripheral chemoreceptors). | <ul style="list-style-type: none"> • Costanzo Chapter 5 Respiratory Physiology • Guyton Chapter 37, 41 |
| Respiratory II | Spirometry. Pulmonary volumes and capacities, learn all the abbreviations and symbols for pulmonary function especially for spirometry and values for arterial blood (table in Costanzo). Forced expiratory volumes in normal subjects and patients with lung disease (asthma, fibrosis). | <ul style="list-style-type: none"> • Chapter 37 Guyton • Costanzo Chapter 5 Respiratory Physiology |
| Exercise Physiology | Sports Physiology | <ul style="list-style-type: none"> • “Medical Physiology” Guyton and Hall, Chapter 21 “Muscle blood flow and cardiac output during exercise” • Sports Physiology |

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Detailed lab regulation you will find on our website <http://wl.uwm.edu.pl/en/kfc/teaching/ii-year/physiology/winter-semester>