Objectives:

1. Identify the factors that contribute to a cardiac output.
2. Compare a normal Frank-Starling curve with that of hyperdynamic and failing ventricles.
3. Construct a normal pressure volume loop including the four valvular positions, isovolumic contraction, and isovolumic relaxation. (Isovolumic is also referred to as isovolumetric.)
4. Contrast systolic dysfunction with diastolic dysfunction.
5. Compare the valve positions during systole vs. diastole.
6. Analyze the contribution of preload to stroke volume and contractility.
7. Contrast high afterload with low afterload and their effect on stroke volume.
8. Identify the valve positions that lead to the main two heart sounds, S1 and S2.
9. Calculate a stroke volume and ejection fraction and determine if the ejection fraction is normal.
10. Calculate a mean arterial pressure.
11. Compare the effects of factors that impact vascular resistance.
12. Distinguish the differences between afterload and systemic vascular resistance (SVR).
13. Categorize the forces that contribute to flow into and out of a capillary.
14. Using Ohm’s law, explain the relationship between blood pressure, cardiac output, and systemic vascular resistance.