A. Respiratory Failure and Mechanical Ventilation (Resp failure lecture orientation day - Simpson)

Some review cases: https://courses.washington.edu/med610/mechanicalventilation/cases.html

1. Understand indications and benefits of Noninvasive ventilation
    a. Understand the difference between CPAP and BiPAP
2. Understand ventilator settings
    a. What should be set in each mode
    b. "Typical vent settings"
    c. Understand the different ventilator modes and what needs to be monitored on each mode
        i. AC/VC vs AC/PC
            1. Monitor Peak pressure and plateau pressure on VC and monitor Vt on PC
        ii. SIMV
        iii. PS
3. Understand how to adjust the ventilator based on the ABG
    a. Adjust FiO2/PEEP for low pO2
    b. Adjust RR and VT for high pCO2/low pH
4. Understand ventilator mechanics
    a. Compliance
        i. Understand how to calculate compliance
        ii. Ddx of poor compliance
        iii. Management of acute change in compliance
    b. Resistance
        i. Calculate resistance
        ii. Ddx of high resistance
        iii. Management of acute change in resistance
5. ARDS
    a. Definition
    b. Physiology (shunt)
    c. Management (strategies for improving hypoxemia)
        i. Paralytics
        ii. Proning
6. Understand which types of sedation to use when a patient is on mechanical ventilation and how to monitor a patient's level of agitation and pain
    a. RASS
    b. CPOT
7. Weaning from the ventilator
    a. RSBI, NIF
    b. Requirements for attempting SBT
        i. Reason for intubation has been fixed
        ii. HD stable on min to no pressors
        iii. Normal acid base status
        iv. Awake and following commands
    c. SBT options:

i. PS, tpiece, SIMV

B. Shock (Shock lecture orientation day - Gilbert)

1. Understand the four major categories of shock and their pathophysiology
    - Warm vs cold
2. Describe the definition for sepsis (Sepsis-3) and the difference between qSOFA and SIRS
3. Understand the management of each type of shock
4. Vasopressors
    - Understand the pharmacodynamics properties of vasopressors
    - first and second line in septic shock
5. Understand what information a mixed venous O2 saturation gives you and what can be done to improve it.
6. Steroids in sepsis

C. Ethics (Ethics lecture orientation day – Hutchison)

1. Summarize the problem of uncertain prognoses in the ICU and how this problem affects intensivists ability to effectively communicate with patients and families
2. Provide a justification for the professional shift away from the concept of "futility."
3. Describe three standards for surrogate decision-making.
4. Recite strategies for building trust with family members of patients in the ICU.
5. Understand the purpose of a POLST, and demonstrate how to help patients complete a POLST according to their personal values and preferences.

D. Acid Base (Acid-base physiology online lecture – Gilbert)

1. Understand the basics of interpreting an ABG
2. Understand the medications that can cause certain acid base disorders
3. Understand how to differentiate differentiate between an acute verses a chronic respiratory acidosis

E. Nutrition (Nutrition online case)

1. Understand the basic methods of assessing a patient's nutrition status
2. Describe the different routes of nutrition, the risks associated with them, contraindications and when it is most appropriate to use them.
3. Define refeeding syndrome and understand how to manage it.
4. Discuss the consequences of poor nutrition on patient survival and outcomes.

F. Cardiology (ICU cardiology online lecture - Shah)

1. Understand basics of interpreting an EKG
2. Understand Management strategies for Acute MI
3. Discuss the approach to initial diagnosis and treatment of arrhythmias encountered in the ICU
4. Understand differences between R-sided and L-sided cardiogenic shock

5. Understand physiology and treatment of the patient with Severe Aortic Stenosis

G. Point of Care Ultrasound (POCUS workshop on orientation day – L. Ozark)

- Demonstrate proper probe location to identify the following ultrasound findings:
    - R radial artery
    - R IJ and carotid artery
    - Lung sliding (anteriorly), 2D and M mode
    - Bilateral costophrenic angles to assess for pleural effusion
    - Subxiphoid 4 chamber view to assess for RV enlargement and pericardial effusion
    - IVC for respiratory variation

H. Critical Care Radiology

1. Understand how to interpret a critical care Chest x ray
    a. Assess central line, dophoff and endotracheal tube placement
    b. Identify pleural effusion
    c. Identify consolidation
    d. Recognize pneumothorax