The following Pediatric Learning Solutions courses align to focus areas of the Pediatric CRRN® Exam Content Outline. These courses equip candidates with the foundational knowledge necessary to approach the Pediatric CRRN® exam with confidence. Go to the Association of Critical-Care Nurses site for more information on the CCRN Exam.

**Pediatric Learning Solutions’ course alignment with Pediatric CRRN® Exam Content Outline.** (Note: PLS Courses are in italics under topic area)

I. **Clinical Judgment**

A. **Cardiovascular**

1. Cardiac Infection and Inflammatory Diseases
   PLS Courses:
   - Acquired Heart Disease
   - Congestive Heart Failure
   - Introduction to Hemodynamic Monitoring
   - Cardiovascular Laboratory Procedures: Diagnostic and Interventional
   - Vasoactive Medications
   - Introduction to ECMO
   - General Post-Op Care of the Transplant Patient

2. Cardiac Malformations
   PLS Courses:
   - Congenital Heart Disease: Overview
   - Congenital Heart Disease: Acyanotic Defects
   - Congenital Heart Disease: Cyanotic Defects
   - Cardiovascular Laboratory Procedures: Diagnostic and Interventional
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications
   - Introduction to ECMO
   - General Post-Op Care of the Transplant Patient

3. Cardiac Surgery
   PLS Courses:
   - Congenital Heart Disease: Overview
   - Congenital Heart Disease: Acyanotic Defects
   - Congenital Heart Disease: Cyanotic Defects
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications
   - Introduction to ECMO
   - General Post-Op Care of the Transplant Patient
   - Nursing Management of Chest Tubes

4. Cardiogenic Shock
   PLS Course:
   - Caring for the Pediatric Patient in Shock
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications
   - Introduction to ECMO
5. Cardiomyopathies
   PLS Courses:
   - Acquired Heart Disease
   - Cardiovascular Laboratory Procedures: Diagnostic and Interventional
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications
   - Introduction to ECMO
   - General Post-Op Care of the Transplant Patient

6. Cardiovascular Catheterization
   PLS Course:
   - Cardiovascular Laboratory Procedures: Diagnostic and Interventional

7. Dysrhythmias
   PLS Courses:
   - Structure and Function of the Heart
   - Electrophysiology
   - The Cardiac Monitor
   - Lines, Waves and Segments
   - Analyzing the ECG Rhythm Strip
   - Sinus Rhythms
   - Atrial Arrhythmias
   - Junctional Arrhythmias
   - Ventricular Arrhythmias
   - Atrioventricular Arrhythmias
   - Channelopathies
   - Temporary Pacemakers
   - Permanent Pacemakers and ICDs

8. Heart Failure
   PLS Courses:
   - Congestive Heart Failure
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications
   - Introduction to ECMO

9. Hypertensive Crises
   PLS Courses:
   - Pulmonary Arterial Hypertension
   - Introduction to Hemodynamic Monitoring
   - Vasoactive Medications

10. Myocardial Conduction System Defects
    PLS Courses:
    - Acquired Heart Disease
    - Arrhythmia Recognition Series
      - Atrial Arrhythmias
      - Junctional Arrhythmias
      - Ventricular Arrhythmias
      - Atrioventricular Arrhythmias
      - Channelopathies
11. Obstructive Shock
   PLS Courses:
   Caring for the Pediatric Patient in Shock
   Introduction to Hemodynamic Monitoring
   Vasoactive Medications
   Introduction to ECMO

12. Vascular Occlusion
   PLS Courses:
   Acquired Heart Disease
   Cardiovascular Laboratory Procedures: Diagnostic and Interventional

B. Respiratory

1. Acute Pulmonary Edema
   PLS Courses:
   Acquired Heart Disease
   Acute Respiratory Distress Syndrome
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
   Introduction to Arterial Blood Interpretation
   Understanding Abnormal Blood Gases
   Advanced Concepts in Respiratory Physiology
   Mechanical Ventilation: Introduction to Pediatric Practices
   High-Frequency Ventilation
   Preventing Ventilator-Associated Infections
   Congestive Heart Failure
   Lower Airway Disease
   Status Asthmaticus
   Pediatric Burns
   Pediatric Drowning

2. Acute Pulmonary Embolus

3. Acute Respiratory Distress Syndrome (ARDS)
   PLS Courses:
   Acute Respiratory Distress Syndrome
   Introduction to Arterial Blood Interpretation
   Understanding Abnormal Blood Gases
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
   Management of the Difficult Airway
   Advanced Concepts in Respiratory Physiology
   Mechanical Ventilation: Introduction to Pediatric Practices
   High-Frequency Ventilation
   Preventing Ventilator-Associated Infections
   Caring for the Pediatric Patient in Shock
   Caring for a Child with a Tracheostomy

4. Acute Respiratory Failure
   PLS Courses:
   Acute Respiratory Distress Syndrome
Introduction to Arterial Blood Interpretation
Understanding Abnormal Blood Gases
Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
Management of the Difficult Airway
Advanced Concepts in Respiratory Physiology
Mechanical Ventilation: Introduction to Pediatric Practices
High-Frequency Ventilation
Preventing Ventilator-Associated Infections
Caring for the Pediatric Patient in Shock
Status Asthmaticus
Introduction to ECMO
Caring for a Child with a Tracheostomy

5. Acute Respiratory Infection
   PLS Courses:
   Acute Respiratory Distress Syndrome
   Lower Airway Diseases
   Neonatal Sepsis
   Pediatric Sepsis
   Caring for the Pediatric Patient in Shock

6. Air-leak Syndromes
   PLS Courses:
   Neonatal Respiratory Distress Syndrome
   Pneumothorax in the Neonate

7. Apnea of Prematurity
   PLS Courses:
   Apnea of Prematurity
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
   Neonatal Respiratory Distress Syndrome
   Neonatal Sepsis

8. Aspiration
   PLS Courses:
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
   Meconium Aspiration Syndrome

9. Chronic Pulmonary Conditions
   PLS Course:
   Bronchopulmonary Dysplasia
   Cystic Fibrosis
   Lower Airway Disease
   Status Asthmaticus
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
   Caring for a Child with a Tracheostomy

10. Congenital Airway Malformations
    PLS Courses:
    Congenital Diaphragmatic Hernia
    Esophageal Atresia and TE Fistula
Gastroschisis and Omphalocele
Management of the Difficult Airway

11. Failure to Wean from Mechanical Ventilation
   PLS Courses:
   Advanced Concepts in Respiratory Physiology
   Mechanical Ventilation: Introduction to Pediatric Practices
   Caring for a Child with a Tracheostomy

12. Pulmonary Hypertension
   PLS Courses:
   Pulmonary Arterial Hypertension
   Persistent Pulmonary Hypertension of the Newborn

13. Status Asthmaticus
   PLS Course:
   Lower Airway Disease
   Status Asthmaticus
   Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation

14. Thoracic and Airway Trauma
   PLS Course:
   Pediatric Thoracic Trauma
   Management of the Difficult Airway

15. Thoracic Surgery
   PLS Courses:
   Congenital Heart Disease: Acyanotic Defects
   Congenital Heart Disease: Cyanotic Defects
   General Post-Op Care of the Transplant Patient
   Nursing Management of Chest Tubes

C. Endocrine/Hematology/Gastrointestinal/Renal/Integumentary

1. Endocrine
   a. Adrenal Insufficiency
   b. Diabetes Insipidus
      PLS Course:
      Diabetes Insipidus and SIADH
   c. Diabetic Ketoacidosis
      PLS Course:
      Diabetic Ketoacidosis
   d. Diabetes Mellitus
      PLS Courses:
      Diabetes Mellitus
   e. Hyperglycemia
      PLS Courses:
      Diabetes Mellitus
Diabetes Insipidus and SIADH

f. Hypoglycemia
   PLS Courses:
   Diabetes Mellitus

g. Inborn Errors of Metabolism
   PLS Course:
   Metabolic Disorders of the Newborn

h. SIADH
   PLS Course:
   Diabetes Insipidus and SIADH

2. Hematology/Immunology
a. Anemia
   PLS Course:
   Anemia and Polycythemia in the Newborn

b. Coagulopathies (e.g., ITP, DIC, HIT)
   PLS Course:
   Disseminated Intravascular Coagulation
   Thrombocytopenia: ITP and HIT/T

c. Immune Deficiencies
   PLS Course:
   Diabetes Mellitus
   Metabolic Disorders of the Newborn
   Pediatric Sepsis

d. Myelosuppression (e.g., thrombocytopenia, neutropenia)
   PLS Course:
   Disseminated Intravascular Coagulation
   Blood Administration: Exchange Transfusion
   Thrombocytopenia: ITP and HIT/T

e. Oncologic Complications
   PLS Course:
   Oncologic Emergencies

f. Sickle Cell Crisis
   PLS Course:
   Sickle Cell Crisis

g. Transfusion Reactions
   PLS Courses:
   Blood Transfusion Reaction

3. Gastrointestinal
a. Abdominal Compartment Syndrome
   PLS Course:
Abdominal Emergencies
Pediatric Abdominal Trauma

b. Abdominal Trauma
    PLS Course:
    Pediatric Abdominal Trauma

c. Bowel Infarction/Obstruction/Perforation
    PLS Course:
    Abdominal Emergencies

d. Gastroesophageal reflux
    PLS Course:
    Nutrition in the Critically Ill Child

e. GI Hemorrhage
    PLS Course:
    Abdominal Emergencies
    Pediatric Abdominal Trauma

f. GI Surgeries
    PLS Courses:
    Abdominal Emergencies
    Gastroschisis and Omphalocele
    Congenital Diaphragmatic Hemia
    General Post-Op Care of the Transplant Patient

g. Liver Disease and Failure
    PLS Courses:
    Liver Transplant
    General Post-Op Care of the Transplant Patient

h. Malnutrition and Malabsorption
    PLS Courses:
    Nutrition in the Critically Ill Child
    Neonatal Nutrition
    Pediatric Nutrition Overview

i. Necrotizing Enterocolitis (NEC)
    PLS Courses:
    Necrotizing Enterocolitis

j. Peritonitis
    Abdominal Emergencies
    Pediatric Abdominal Trauma

4. Renal/Genitourinary
a. Acute Kidney Injury (AKI)
    PLS Courses:
    Renal Failure in the Pediatric Patient
    Hemodialysis
    Continuous Renal Replacement Therapy
b. Chronic Kidney Disease (CKD)
   PLS Courses:
   Renal Failure in the Pediatric Patient
   Hemodialysis
   Peritoneal Dialysis
   General Post-Op Care of the Transplant Patient

c. Hemolytic Uremic Syndrome
d. Kidney Transplant
   PLS Courses:
   Renal Failure in the Pediatric Patient
   General Post-Op Care of the Transplant Patient

e. Life-threatening Electrolyte Imbalances
   PLS Courses:
   Fluids and Electrolytes Imbalance: Dehydration
   Fluids and Electrolytes: Laboratory Assessment
   Fluids and Electrolytes: Physical Assessment
   Fluids and Electrolytes: Physiological Differences
   Fluids and Electrolytes: Replacement Therapy
   Fluids and Electrolytes: Water Intoxication and Fluid Shift

f. Renal and Genitourinary Infections
   PLS Courses:
   Pediatric Assessment: The Genitourinary System
   Preventing Catheter-Associated Urinary Tract Infections

g. Renal and Genitourinary Surgery
   PLS Courses:
   Pediatric Assessment: The Genitourinary System
   General Post-Op Care of the Transplant Patient

5. Integumentary
a. IV Infiltration
   PLS Courses:
   Pediatric Peripheral IV Care & Management
   Management of PIV Complications in the Pediatric Patient

b. Pressure Injury
   PLS Courses:
   Introduction to Pediatric Pressure Injuries
   Pressure Injuries in the Pediatric Population: Staging and Care
   Pressure Injury Staging Assessment

c. Skin Failure (e.g., hypoperfusion)
   PLS Courses:
   Care of the Pediatric Patient in Shock

d. Wounds
D. **Musculoskeletal/Neurology/Psychosocial**

1. **Musculoskeletal**
   a. **Compartment Syndrome**
      
      *PLS Courses:*
      - *Pediatric Orthopedic Trauma*
   
   b. **Musculoskeletal Surgery**
      
      *PLS Courses:*
      - *Pediatric Orthopedic Trauma*
   
   c. **Musculoskeletal Trauma**
      
      *PLS Courses:*
      - *Pediatric Orthopedic Trauma*
   
   d. **Rhabdomyolysis**

2. **Neurological**
   
   a. **Acute Spinal Cord Injury**
      
      *PLS Courses:*
      - *Pediatric Spinal Column/Cord Injuries*
   
   b. **Agitation**
      
      *PLS Courses:*
      - Anxiety and Obsessive-Compulsive Disorders (OCD)
      - Attention-Deficit/Hyperactivity Disorder (ADHD)
      - Autism Spectrum Disorder (ASD)
      - Care of the Pediatric Patient with Suicidal Ideation
      - Caring for the Behaviorally Challenged Patient
      - Crisis Prevention through Verbal and Nonverbal De-escalation Strategies
      - Effective Use of Psychotropic Medications in the Prevention and Management of Disruptive Behavior
      - Oppositional Defiant Disorder (ODD)
      - Pediatric Mood Disorders
      - Pediatric Restraint and Seclusion
      - Psychotic Disorders
      - Trauma-Informed Practice: Concepts, Goals and Key Principles
      - Implementing Trauma-Informed Sensitive Practice
      - Trauma- and Stressor-related Disorders
   
   c. **Brain Death**
      
      *PLS Courses:*
      - Pediatric Traumatic Brain Injury
      - Intracranial Pressure Monitoring
      - Organ and Tissue Donation: The Gift of Life
   
   d. **Congenital Neurologic Abnormalities**
      
      *PLS Course:*
      - Hydrocephalus
Neonatal Cranial Hemorrhage
Craniotomy

e. Delirium
   PLS Courses:
   Sedation and Analgesia in the ICU

f. Encephalopathy
   PLS Courses:
   Meningitis and Encephalitis
   Intracranial Pressure Monitoring

g. Head Trauma
   PLS Courses:
   Pediatric Traumatic Brain Injury
   Intracranial Pressure Monitoring
   Craniotomy
   The Deadly Triad of Trauma

h. Hydrocephalus
   PLS Course:
   Hydrocephalus

i. Intracranial Hemorrhage
   PLS Course:
   Neonatal Cranial Hemorrhage
   Intracranial Pressure Monitoring
   Craniotomy
   Pediatric Stroke

j. Neurogenic Shock
   PLS Course:
   Care of the Pediatric Patient in Shock

k. Neurologic Infectious Disease
   PLS Course:
   Meningitis and Encephalitis

l. Neuromuscular Disorders

m. Neurosurgery
   PLS Courses:
   Craniotomy
   Pediatric Traumatic Brain Injury

n. Pain (acute, chronic)
   PLS Courses:
   Pain Management: Assessment of Pain
   Pain Management: Non-Pharmacological Therapies in the Management of Pediatric Pain
   Pain Management: Pain Pathophysiology
   Pain Management: Pharmacological Management of Pediatric Pain
   Pain Technologies: PCA & Epidural Analgesia
   Procedural Sedation in the Pediatric Patient
o. Seizure Disorders
   PLS Courses:
   Status Epilepticus
   Neonatal Seizures

p. Space-occupying Lesions
   PLS Courses:
   Craniotomy
   Intracranial Pressure Monitoring

q. Spinal Fusion
r. Stroke
   PLS Course:
   Pediatric Stroke

s. Traumatic Brain Injury
   PLS Courses:
   Pediatric Traumatic Brain Injury
   Intracranial Pressure Monitoring
   Craniotomy

3. Behavioral and Psychosocial
a. Abuse and Neglect
   PLS Course:
   Child Abuse and Neglect
   Intimate Partner Violence
   Trauma-Informed Practice: Concepts, Goals and Principles
   Implementing Trauma-Informed Sensitive Practice

b. Post-Traumatic Stress Disorder (PTSD)
   PLS Courses:
   Trauma-Informed Practice: Concepts, Goals and Key Principles
   Implementing Trauma-Informed Sensitive Practice
   Trauma- and Stressor-related Disorders
   Care of the Pediatric Patient with Suicidal Ideation
   Crisis Prevention through Verbal and Nonverbal De-escalation Strategies
   Effective Use of Psychotropic Medications in the Prevention and Management of Disruptive Behaviors
   Pediatric Restraint and Seclusion
   Anxiety Disorders and Obsessive-Compulsive Disorder

c. Post-Intensive Care Syndrome (PICS)
   PLS Courses:
   Trauma-Informed Practice: Concepts, Goals and Key Principles
   Implementing Trauma-Informed Sensitive Practice
   Trauma- and Stressor-related Disorders

d. Self-Harm
   PLS Courses:
   Care of the Pediatric Patient with Suicidal Ideation
   Anxiety and Obsessive-Compulsive Disorders (OCD)
   Pediatric Mood Disorders
e. Suicidal Ideation and Behavior
   PLS Courses:
   Care of the Pediatric Patient with Suicidal Ideation
   Caring for the Behaviorally Challenged Patient
   Crisis Prevention through Verbal and Nonverbal De-escalation Strategies
   Effective Use of Psychotropic Medications in the Prevention and Management of Disruptive Behaviors
   Pediatric Mood Disorders
   Psychotic Disorders
   Trauma and Stress-related Disorders
   Trauma-Informed Practice: Concepts, Goals and Key Principles
   Implementing Trauma-Informed Sensitive Practice

E. Multisystem

1. Acid-Base Imbalance
   PLS Courses:
   Introduction to Arterial Blood Interpretation
   Understanding Abnormal Blood Gases
   Advanced Concepts in Respiratory Physiology
   The Deadly Triad of Trauma

2. Anaphylactic Shock
   PLS Courses:
   Care of the Pediatric Patient in Shock

3. Death and Dying
   PLS Courses:
   Care of the Dying Child: Care Issues
   Care of the Dying Child: Grief
   Care of the Dying Child: The Dying Process
   Health Care Advance Directives: Communicating Wishes
   Organ and Tissue Donation: The Gift of Life

4. Healthcare-associated Conditions (e.g., VAE, CAUTI, CLABSI)
   PLS Courses:
   Preventing Catheter-Associated Urinary Tract Infection (CAUTI)
   Preventing Central Line-Associated Bloodstream Infections (CLABSI)
   Preventing Surgical Site Infections
   Preventing Ventilator-Associated Infections

5. Hypovolemic Shock
   PLS Courses:
   Care of the Pediatric Patient in Shock

6. Post-Transplant Complications
   PLS Courses:
   Liver Transplant
   General Post-Op Care of the Transplant Patient
II. Professional Caring and Ethical Practice

1. Advocacy/Moral Agency
   PLS Courses:
   Introduction to Ethics
   Family-Centered Care in the ICU
   Therapeutic Relationships and Professional Behavior

2. Caring Practices
   PLS Courses:
   Introduction to Ethics
   Family-Centered Care in the ICU

3. Response to Diversity
   PLS Course:
   Introduction to Workplace Diversity

4. Facilitation of Learning
   PLS Courses:
   Precepting: Adult Learners
   Precepting: Preceptor Roles and Responsibilities

5. Collaboration
   PLS Courses:
   Building Effective Teams
   Clinical Delegation
   Coaching
   Empowering Teams
   Giving and Receiving Feedback
   Therapeutic Relationships and Professional Behavior
6. Systems Thinking
   PLS Courses:
   Building Effective Teams
   Empowering Teams
   Introduction to Finance

7. Clinical Inquiry
   PLS Course:
   Introduction to Research Ethics

Other related and supporting PLS content:

Patient Care
Assessment of the Critically Ill Child
Blood Administration: Administration of Blood and Blood Components
Blood Administration: Blood Components
Caring for the Complex Patient