## Course Outline

### Week 1

**Today's Dialysis Environment**
- Overview of Dialysis
- Quality in Dialysis - National Kidney Foundation - KDOQI
- Certification requirements

**The Person with Kidney Failure**
- Renal Anatomy and Physiology
- Types of Kidney Failure
- Causes of Chronic Kidney Disease
- Conditions Caused by Chronic Kidney Disease

**Treatment Options**
- Hemodialysis Care Team
- Communication
- Patient Education
- Patient Resources

### Week 2

**Principles of Dialysis**
- Scientific Principles
- Solution
- Semipermeable Membrane
- Diffusion
- Osmosis
- Filtration
- Ultrafiltration
- Applying Scientific Principles

**Hemodialysis Devices**
- Dialyzers
- Dialysate
- Hemodialysis Delivery Systems
- Review/Compare clearance specs of dialyzers
- Streamline Bloodline Video
- Bloodlines and explain parts of bloodlines

**Vascular Access**
- Types of Accesses
  - AV Fistula
  - AV Graft
- Dialysis Catheters
- Constant Site Cannulation & Management - Using Buttonhole Technique
- Anesthetics Used for Needle Insertion
- National Vascular Access Improvement Initiative
- Cath Flo Activase

### Week 3

**Hemodialysis Procedures and Complications**
- Patient and Staff Safety
- Body Mechanics
- Transferring Patients
- Emergency Procedures
- Infection Control
- Bloodborne Disease
- Antibiotic-Resistant Bacteria
- Tuberculosis

**Medications and Solutions**
- Measuring Dialysis Adequacy
- Monitoring During Dialysis
- Technical Monitoring
- Anticoagulation
- Clinical Complications of Dialysis
- Technical Complications

**Water Treatment**
- Water Supply
- Water Treatment System Components
- Pretreatment Components
- Reverse Osmosis Process and Systems
- Distribution System
- Patient Monitoring

### Week 4

**Emergency Planning and Response**
- Regulation and Oversight
- Types of Emergencies
- Prepare for Emergencies
- Patient Education for Emergencies
- Responding to Emergencies
- Recovering from an Emergency and Quality Improvement

**Medications Commonly used for Dialysis Patients**
- Erythropoietin Stimulating Agents: Epogen, Aranesp, Mircera
- Intravenous Iron Products, Ferrlecit, Venofer
- Vitamin D Analogs, Hectorol, Zemplar, Calcijex
- Calcium Sensing Receptor Antagonist: Etelcalcetide (Parsabiv)
- Select Antimicrobial Agents: Ancef, Gentamycin, Rocephin, Vancomycin
- Vaccines: Flu, Pneumovax, Energix, COVID-19

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Each module will have a corresponding quiz at the end of the week, with a final exam at the end the course. For additional program details and registration, visit RenalHealthcare.org.