

Critical Care Nursing Course

Course Overview:

1- Course Description:

This course in Critical Care Nursing is meticulously designed to prepare undergraduate & postgraduate nurses for the complex and dynamic environment of critical care units. It provides in-depth theoretical knowledge, clinical reasoning, technical skills, and professional competencies necessary for the assessment, stabilization, and management of critically ill adult patients with life-threatening conditions.

The course emphasizes a system-based approach to patient care, incorporating advanced pathophysiology, evidence-based interventions, critical decision-making, and holistic, patient-centered care. Critical care nursing requires the integration of complex physiological understanding with the integration of high-tech equipment, invasive monitoring, and rapid intervention in unstable situations.

Learners will explore multisystem organ failure, mechanical ventilation, sepsis, hemodynamic instability, intensive care pharmacology, and the psychosocial dimensions of critical illness. The course also addresses ethical dilemmas, legal implications, and the support of families during crisis situations.

Incorporating simulations, case-based learning, and supervised clinical practice, this course fosters clinical confidence and prepares nurses for professional certification and leadership roles in intensive care environments.

2-Course objective :

Patient Assessment & Monitoring

Perform comprehensive assessments of critically ill patients and interpret vital signs, hemodynamic data, and laboratory results.

Clinical Management

- Apply evidence-based nursing interventions for patients with cardiovascular, respiratory, neurological, renal, and multisystem disorders.

Technical Skills

- Demonstrate proficiency in critical care procedures, including mechanical ventilation, IV therapy, cardiac monitoring, and emergency interventions (e.g., ACLS).

Critical Thinking & Decision-Making

- Prioritize care, analyze complex patient situations, and implement appropriate nursing actions.

Communication & Professionalism

- Communicate effectively with patients, families, and the healthcare team while adhering to ethical and professional standards.

3- Course Duration and Structure:

- **Total Hours:** 36 hours

4- Target group:

- Fresh graduate nurse
- Nurses transitioning to or currently working in intensive care, high-dependency units, cardiac care, or emergency departments
- ICU nurses

5- Intended Learning Outcomes:

Upon successful completion, students will be able to:

Domain	Outcomes
Cognitive	<p>-Analyze complex patient data and apply clinical reasoning for rapid and effective decision making.</p> <p>-Describe the pathophysiology of critical illnesses such as shock, sepsis, ARDS, and multi-organ dysfunction syndromes, and multi-organ dysfunction.</p> <p>-Enumerate the principles of advanced patient monitoring, including ECG interpretation, arterial blood gases, and invasive hemodynamic parameters.</p> <p>-Discuss the pharmacokinetics and pharmacodynamics of commonly used critical care medications, including vasoactive drugs, sedatives, analgesics, and antibiotics.</p> <p>-Identify evidence-based guidelines for managing critical conditions (e.g., Surviving Sepsis Campaign, ACLS protocols).</p> <p>-Enumerate ethical and legal principles relevant to end-of-life care, informed consent, and patient advocacy in the ICU.</p>
Psychomotor	<p>-Utilize advanced technology for monitoring and intervention, including mechanical ventilation, infusion pumps, and invasive lines.</p> <p>-Interpret Accurately vital signs, hemodynamic parameters, ECGs, and arterial blood gases to identify patient deterioration.</p> <p>-Perform comprehensive assessments using a structured framework (e.g., ABCDE, head-to-toe assessments).</p>

	<p>-Demonstrate competency in operating critical care equipment, including mechanical ventilators, pumps, cardiac monitors, and arterial lines.</p> <p>- Administer high-risk medications safely via IV infusion with appropriate monitoring according to ICU protocols.</p> <p>- Implement airway management techniques, including suctioning, endotracheal care, tracheostomy care, and assisting with intubation.</p> <p>-Provide emergency interventions during clinical deterioration or code situations according to hospital guidelines.</p> <p>-Document assessments, interventions, and patient responses accurately and professionally with legal and institutional standards.</p> <p>-Implement infection prevention protocols to minimize ICU-associated infections such as CLABSI, and CAUTI.</p>
Affective	<p>-Judge and prioritize in rapidly changing situations to ensure patient safety.</p> <p>-Communicate effectively and empathetically with patients, families, and multidisciplinary team members during high-stress and emotionally charged situations.</p> <p>- Adhere to ethical and professional standards in delivering culturally sensitive, family-centered care.</p> <p>- Collaborate within interprofessional teams to ensure continuity and quality of care for critical care patients.</p> <p>-Engage in reflective practice to evaluate performance and identify opportunities for ongoing professional development.</p>

6- Course Content & Modules:

The curriculum is structured into **thematic modules**, blending theoretical instruction with clinical application.

Module 1: Foundations of Critical Care Nursing (2 hrs)

- Historical foundations
- Role and responsibilities of the critical care nurse
- ICU environment, safety, infection control

Module 2: Advanced Assessment and Monitoring (3hrs)

- Comprehensive head-to-toe and focused assessments
- Neurological (Glasgow Coma Scale, ICP monitoring)
- Cardiovascular (ECG, CVP, arterial lines, PA catheter)
- Respiratory (auscultation, ABG interpretation, pulse oximetry)
- Renal, hepatic, and integumentary assessments
- Early Warning Scores

Module 3: Pharmacology in Critical Care(3 hrs)

- Nursing monitoring of critical care drugs
- Sedation and pain management

Module 4: Cardiovascular and Hemodynamic Management(4hrs)

- Acute coronary syndrome, heart failure, dysrhythmias
- Shock (hypovolemic, distributive, cardiogenic, obstructive)
- Hemodynamic monitoring and interpretation
- Use of vasoactive agents (e.g., dopamine, norepinephrine)

Module 5: Respiratory Management and Mechanical Ventilation(4hrs)

- Respiratory failure (Type I & II), ARDS
- Intubation and airway maintenance
- Ventilator modes and settings
- Alarms, troubleshooting, and weaning
- Tracheostomy care

Module 6: Neurological and Endocrine Emergencies(3hrs)

- Stroke (ischemic, hemorrhagic), nursing care of comatose patients
- DKA

Module 7: Renal, and Hepatic Failure(3hrs)

- Nursing Management of hepatic encephalopathy patients
- Fluid, electrolyte, and acid-base management

Module 8: Sepsis and Multi-Organ Dysfunction(3hrs)

- SIRS, sepsis, septic shock

Module 9: Psychosocial and Ethical Considerations(2hrs)

- Communication with patients and families
- Ethical dilemmas in ICU
- Legal considerations: consent, documentation, restraint

7- Practical sessions of the course: Hands on Training (9 hrs)

- Suctioning **techniques** (oral, nasopharyngeal, endotracheal, and tracheostomy suctioning)
- Endotracheal **tube (ETT) care and securing**
- Tracheostomy **care and management**
- Assisting with or performing **manual ventilation using a bag-valve-mask (BVM)**
- Electrocardiogram (ECG) monitoring and lead placement
- Non-invasive and invasive blood pressure monitoring
- Monitoring and managing central venous pressure (CVP) and arterial lines
- IV medication administration (ICU Drugs)
- Use of infusion pumps and syringe drivers
- Arterial blood gas (ABG) sampling and interpretation
- Cardiopulmonary resuscitation (CPR) – BLS protocol
- Use of crash carts and emergency drugs
- Gastrostomy tube care and feeding protocols & Parenteral nutrition monitoring (TPN line care& monitoring)

8- Evaluation Methods

Evaluation Method	Weight (%)
Written Exam	30%
Skills Lab Assessment	20%
Clinical Practicum Evaluation	25%
Case Study Presentation/Assignment	10%
Professionalism	10%
Participation/Attendance	5%
Total	100%

11- Minimum Passing Criteria:

- Combination of $\geq 80\%$ in knowledge exams
- Attendance 90% of the course