# SGT University, Gurugram

# **Faculty of Nursing**

**Post Graduate Course**: Nurse Practitioner in Critical Care Post Graduate Residency Program

# **Syllabus**

#### Preamble

Healthcare system landscape in India is changing rapidly to meet the growing health needs and demands of the population. Nurses in India are expected to extend and expand their scope of practice beyond general practice. The need for significant expansion in tertiary care services in public and private health sector is recognised by the government. Specialist nurses with advanced educational preparation are required to support specialized and super specialized healthcare services. Recognizing this need, INC has prepared Nurse Practitioner in Critical Care post graduate residency program to meet the challenges and demands of tertiary care services reflected in NHP 2015 draft document in order to provide quality care to critically ill patients of all age groups and families.

These programs have a strong clinical component and utilize a competence based training approach. The curriculum comprises three major areas namely core courses, advanced practice courses and critical care speciality courses. Through development of competencies and accreditation, this program aims to enhance service delivery and improve health outcomes. It is hoped to provide new opportunities for Nurses practitioners in terms of career pathway and professional development. Established institutional protocols/standing orders will guide their independent and advanced critical care nursing practice. The critical care nursing practice standard of INC will regulate their practice

The basic principles and practices of nursing as taught in educational programs for nurses. In a course on the Nurse Practitioner in Critical Care Post Graduate Residency Program, the student attends classes and gives care to selected patients. A Nurse Practitioner in Critical Care Post Graduate Residency Program emphasizes the importance of the fundamental needs of humans as well as competence in basic skills as prerequisites to providing comprehensive nursing care for Critical Care Patients. The Course provides a solid foundation in critical thinking, evidence-

based practice, nursing theory, and safe clinical care especially in Critical Care and ICU settings. This course will introduce fundamentals of being a Nurse practitioner, the roles, responsibilities and scopes of Nurse practitioner course for the student.

# Course as per council

#### First Year

S.No	Subject	Theory(Hrs)	Lab/Skill (Hrs)	Clinical (Hrs)
	Core Course			
I	Theoretical Basis for Advanced Practice	40	-	-
	Nursing			
П	Research Application and Evidence	56	24	336 (7wks)
	Based Practice in Critical Care			
Ш	Advanced skills in Leadership,	56	24	184 (4wks)
	Management and Teaching			
	Advanced Nursing Course			
IV	Advanced Pathophysiology Applied to	60	-	336 (7 wks)
	Critical Care Nursing			
V	Advanced Pharmacology relevant to	54	-	336 (7 wks)
	Critical Care Nursing			
VI	Advanced Health/Physical Assessment in	70	48	576 (12wks)
	Critical Care			
	Nursing			
Total	2208 hrs	336 (7wks)	96 (2wks)	1776(37wks)

## **Second Year**

S.No	Subject	Theory(Hrs)	Lab/Skill (Hrs)	Clinical (Hrs)
	Specialty Courses			
1	Foundations of Critical Care Nursing	96	48	552 (11 wks)
	Practice			
П	Critical Care Nursing I	96	48	552 (13wks)
Ш	Critical Care Nursing II	96	48	644 (13wks)
Total	2208hrs	288 (6wks)	144(4wks)	1748 (37wks)

## Goals

The primary goal of the course is to train specialist nurses in critical care Nursing with advanced educational preparation required to support specialized and super specialized healthcare services. The critical care NP program prepares registered B.Sc. Nurses for advanced practice

roles as clinical experts, managers, educators and consultants leading to M.Sc degree in critical care NP

## **Objectives**

After completing of the program, the Nurse Practitioner in Critical Care Post Graduate Residency Program will be able to

- 1. Assume responsibility and accountability to provide competent care to critically ill patients and appropriate family care in tertiary care centers
- 2. Demonstrate clinical competence / expertise in providing critical care which includes diagnostic reasoning, complex monitoring and therapies
- 3. Apply theoretical, patho-physiological and pharmacological principles and evidence base in implementing therapies / interventions in critical care
- 4. Identify the critical conditions using differential diagnosis and carry out treatment/interventions to stabilize and restore patient's health and minimize or manage complications independently or collaboratively as a part of critical care team
- 5. Collaborate with other health care professionals in the critical care team, across the continuum of critical care

#### Duration

Duration of Nurse Practitioner in Critical Care Post Graduate Residency Program is Two year program

#### Eligibility

- Applicants must possess a registered B.Sc. nurse with a minimum of one year clinical experience, preferably in any critical care setting prior to enrollment
- Must have undergone the BSC in an institution recognized by the Indian Nursing Council.
- Must have scored not less than 55% aggregate marks in the BSc program
- Selection must be based on the merit of an entrance examination and interview held by the competent authority critical care setting prior to enrolment.

#### **Career opportunities**

NPs are "registered nurses with additional educational preparation and experience who possess and demonstrate the competencies to autonomously diagnose, order, and interpret diagnostic tests, prescribe pharmaceuticals, and perform specific procedures within their legislative scope of practice. Nurses work in all types of critical care and ICU settings where there is a need for

health care emergencies locally and globally, such as hospitals, community agencies, ambulatory care offices, occupational settings, and government agencies.

Nursing work involves a broad range of health care activities, such as performing consultations / receiving referrals, Research patient histories, perform physical exams, Order & interpret diagnostic tests, prescribe medications, coordinate patient care, make referrals to & collaborate with other specialists as needed

## **Teaching strategies**

Teaching-theoretical, lab & Clinical can be done in the following methods and integrated during clinical posting

- Clinical conference
- Case/clinical presentation
- In depth drug study, presentation and report
- Nursing rounds
- Clinical seminars
- Journal clubs
- Case study/Nursing process
- Advanced health assessment
- · Faculty lecture in the clinical area
- Directed reading
- Assignments
- Case study analysis
- Workshops

## Subject distribution:

The subject will be for 1 year duration. The topics covered under theory training are as follows

#### 1st Year

## I. Theoretical Basis for advanced practice nursing

Unit	Topic	Hours
1.	Global Health Care Challenges and Trends(Competency-1) 2	2
2.	Health System in India	2
	Health Care Delivery System in India – Changing Scenario(Competency-3)	

3.	National Health Planning – 5 year plans and National Health	2	
	Policy(Competency-2)		
4.	Health Economics & Health Care financing(Competency- 4)	4	
5.	Health Information system including Nursing Informatics (use of	4	
	computers)(Competency-5)		
6.	Advanced Nursing Practice (ANP)	3	
	Definition, Scope, Philosophy, Accountability, Roles & Responsibilities		
	(Collaborative practice and Nurse Prescribing roles)(Competency-6&7)		
7.	Regulation (accreditation of training institutions and Credentialing) &	3	
	Ethical Dimensions of advanced nursing practice role (Competency-8)		
8.	Nurse Practitioner – Roles, Types, Competencies, Clinical settings for	3	
	practice, cultural competence(Competency-6)		
9.	Training for NPs – Preceptorship (Competency-9)	2	
10.	Future challenges of NP practice(Competency-11)	4	
11.	Theories of Nursing applied to APN(Competency-10)	3	
12.	Nursing process applied to APN(Competency-9)		
13.	Self Learning assignments	6	
	TOTAL	40 hrs	

# NP Critical Care Competencies (Adapted from ICN, 2005)

- 1. Uses advanced comprehensive assessment, diagnostic, treatment planning, implementation and evaluation skills
- 2. Applies and adapts advanced skills in complex and / or unstable environments
- 3. Applies sound advanced clinical reasoning and decision making to inform, guide and teach in practice
- 4. Documents assessment, diagnosis, management and monitors treatment and follow-up care in partnership with the patient
- 5. Administer drugs and treatments according to institutional protocols
- 6. Uses applicable communication, counselling, advocacy and interpersonal skills to initiate, develop and discontinue therapeutic relationships
- 7. Refers to and accepts referrals from other health care professionals to maintain continuity of care
- 8. Practices independently where authorizes and the regulatory framework allows in the interest of the patients, families and communities
- 9. Consults with and is consulted by other health care professionals and others
- 10. Works in collaboration with health team members in the interest of the patient

- 11. Develops a practice that is based on current scientific evidence and incorporated into the health management of patients, families and communities
- 12. Introduces, tests, evaluates and manages evidence based practice
- 13. Uses research to produce evidence based practice to improve the safety, efficiency and effectiveness of care through independent and inter-professional research
- 14. Engages in ethical practice in all aspects of the APN role responsibility
- 15. Accepts accountability and responsibility for own advanced professional judgement, actions, and continued competence
- 16. Creates and maintains a safe therapeutic environment through the use of risk management strategies and quality improvement
- 17. Assumes leadership and management responsibilities in the delivery of efficient advanced practice nursing services in a changing health care system
- 18. Acts as an advocate for patients in the health care systems and the development of health policies that promote and protect the individual patient, family and community
- 19. Adapts practice to the contextual and cultural milieu

## **CLINICAL PRACTICE**

- a. Clinical Residency experience (A minimum of 48 hrs/ week is prescribed, however, it is flexible with different shifts and OFF followed by on call duty)
- b. 8 hours duty with one day Off in a week and on call duty one per week

## Clinical placements:

I year: 44 wks (excludes 2 weeks of introductory block classes and workshop)

- Medical ICU 12 weeks
- Surgical ICU 12 weeks
- Cardio/Cardio thoracic (CT) ICU 8 weeks
- Emergency Department 6 weeks
- Other ICUs (Neurology, Burns, Dialysis unit) 6 weeks

I year: 336-96-1776hrs (Theory-skill lab-clinical) [Theory + Lab=20%, Clinical=80%]

I YEAR =46 weeks/ 2208 hrs(46x48hrs)( Theory +Lab :7.5 hrs/week for 44wks =336+96 hrs\*)

\*Theory + Lab= 96 hrs can be given for 2wks in the form of introductory block classes and workshop

# I. Theoretical Basis for Advanced Practice Nursing

# Placement: Nurse Practitioner in Critical Care 1st year

Hours of Instruction Theory 40 hours

S. No		Domain	ıs	Cognitive	psychomotor	Affective
1	Global Health Care Challenges and Trends	Good know	to	Identifyes Global Health Care Challenges and Trends		Develops understanding
2	Health System in India Health Care Delivery System in India – Changing Scenario	Good know	to			Develops understanding Health Care Delivery System in India
3	National Health Planning – 5 year plans and National Health Policy	Good know	to	Analyzes 5 year plans and National Health Policy		
4	Health Economics & Health Care financing	Good know	to			Appreciates Health Economics & Health Care financing
5	Health Information system including Nursing Informatics (use of computers)	Essential perform	to		Utilizes Health Information system including Nursing Informatics	
6	Advanced Nursing Practice (ANP) Definition, Scope, Philosophy,	Good know	to to	Aware of her Accountability and responsibilities	Performs nurse practitioner role for five patients	Write philosophy of her institution /ANP
	Accountability,	Essential perform	to			

	Dalas (salas) (Casasalasa				
	Roles [roles) (Competency-6&7)				
7	Regulation (accreditation of training institutions and Credentialing) & Ethical Dimensions of advanced nursing practice role (Competency-8)	Essential to perform	Identifies the ethical dimensions of advanced nursing practice role	Maintains nursing standard for quality assurance of her institution	Appreciate and applies ethical values in her practice
8	Nurse Practitioner – Roles, Types, Competencies, Clinical settings for practice, cultural competence(Competency-6)	Essential to perform	Discusses various role of nursing practice role	Participates in collaborative health care team	
9	Training for NPs Preceptor-ship (Competency- 9)	Essential to perform		Carries out preceptor ship role for five students	
10	Future challenges of NP practice (Competency-11)	Essential to perform	Identifies the challenges of nursing practice	Predict the future challenge of APN	
11	Theories of Nursing applied to APN (Competency-10)	Essential to perform	Described the various theories of nursing applied to ANP	Applies Nursing theories to Advanced practice nursing for five patients	
12	Nursing process applied to APN(Competency-9)	Essential to perform	Discuss the steps of nursing process	Applies Nursing process to Advanced practice nursing for five patients	
13	Self-Learning assignments  a) Identify Health Care and Education Policies and analyze its impact on Nursing	Essential to perform	Analyse the impact health care and education polices	Writes the health care policies of India.	



	<u> </u>	
b) Describe the legal		Describes the
position in India for NP	Discuss the	legal position
practice. What is the	legal issues	in India for NP
future of nurse	related to NP	practice.
prescribing policies in	practice	
India with relevance to		Examine the
these policies in other		nursing
countries?		protocols ICUs
c) Examine the nursing		in tertiary
protocols relevant to		center
NP practice found in		
various ICUs in tertiary		
center		

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching
- Annotated references from journals

# Assessment techniques for practical

- Sessional Examination = Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

# I. Theoretical Basis for Advance Practice Nursing

Placement: Nurse Practitioner in Critical Care 1<sup>st</sup> Year

Hours of Instruction Theory: 40 Hours

s. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	Global Health Care Challenges and Trends (Competency-1)	Discuss the global healthcare trends and challenges.	To teach and discuss about global healthcare trends and challenges.	with the students	2 hrs
2	Health System in India Health Care Delivery System in India – Changing	Appreciate the impact of Healthcare and Education policies in India	To teach and discuss about Health care delivery system in India.	Focus group discussion on health care delivery system.	2 hrs

	Scenario(Compet				
	ency-3)				
2	Notional Hoolth	Flabouata the National	To tooolo and discuss	Ctudout cominer	2 has
3	National Health	Elaborate the National	To teach and discuss		2 hrs
	Planning – 5 year	health planning and	aboutNational Health	on National Health	
	plans and	health information	Planning – 5 year plans		
	National Health	system in India	and National Health	plans &National	
	Policy		Policy	Health Policy	
	(Competency-2)				
4	Health	Appreciate theHealth	To teach and discuss	Panel discussion	4 hrs
	Economics &	Economics & Health	about Health	on health	
	Health Care	Care financing	Economics & Health	economics and	
	financing	G	Care financing	health care	
	(Competency- 4)		3	financing	
5	Health	Discuss the Health	To teach and discuss	Seminar on health	4 hrs
	Information	information system and	about Health	information	
	system including	Nurse informatics	information system	system	
	Nursing	ivarse informatics	and Nurse informatics	3,300111	
	Informatics (use		(use of computers)	Simulated learning	
	of		(use of computers)	on Nurse	
	computers)(Com			Informatics.	
				iiiioiiiiatics.	
_	petency-5)	Cummorizo	To tooob and discuss	Ctudont coming and	2 h ===
6	Advanced	Summarize the	To teach and discuss	Student seminar	3 hrs
	Nursing Practice	Definition, Scope,	about Definition,	on scope,	
	(ANP)	Philosophy,	Scope, Philosophy,	philosophy and	
	Definition, Scope,	Accountability, Roles &	Accountability, Roles &	•	
	Philosophy,	Responsibilities of	Responsibilities of	•	
	Accountability,	advanced nursing	advanced nursing	practice.	
	Roles &	practice	practice		
	Responsibilities			Fish bowl	
	(Collaborative			technique on roles	
	practice and			and	
	Nurse Prescribing			responsibilities of	
	roles)			Advanced nursing	
	(Competency-			practice	
	6&7)				

7	Regulation (accreditation of training institutions and Credentialing) & Ethical Dimensions of advanced nursing practice role (Competency-8)	Review the Regulation and ethical dimensions of advanced nursing practice	To teach and discuss about Regulation and ethical dimensions of advanced nursing practice	Interactive session on Regulation and ethical dimensions	3 hrs
8	Nurse Practitioner – Roles, Types, Competencies, Clinical settings for practice, culturalCompete nce (Competency-6)	Enumerate the Roles, Types, Competencies, Clinical settings for practice &culturalCompetence	To teach and discuss about Roles, Types, Competencies, Clinical settings for practice &culturalCompetencei n advance nursing practice	Simulated learning regarding clinical settings for practice  Role play	3 hrs
9	Training for NPs - Preceptorship (Competency-9)	Appreciate the Training preceptorship for Nurse practitioner	To teach and discuss about Training preceptorship for Nurse practitioner	regarding Training	2 hrs
10	Future challenges of NP practice (Competency-11)	Analyze theFuture challenges of Nurse Practitioner practice	To teach and discuss aboutFuture challenges of Nurse Practitioner practice	Panel discussion on future challenges of NP practice	4 hrs
11	Theories of Nursing applied to APN (Competency-10)	Apply the theories of Nursing in Advanced Nursing Practice	To teach and discuss about theories of Nursing applied in Advanced NursingPractice		3 hrs
12	Nursing process applied to APN (Competency-9)	Plan the Nursing process applied in Advanced Practice Nursing	To teach and discuss about Nursing process applied in Advanced Practice Nursing	Simulated learning based on nursing process related to advanced nursing	2 hrs



				practice	
13	Self-Learning				6 hrs
	assignments	Analyzes the	To teach and discuss	Spot group	
	I.Identify Health	impacthealth care	about health care	discussion	
	Care and	polices on nursing.	policy and its impact		
	Education		on nursing and nursing		
	Policies and	Prepares the nursing	protocols related to NP		
	analyse its	protocols related to NP	practice.	Role play	
	impact on	practice in ICUs and			
	Nursing	tertiary Centre.			
	II.Describe the			Panel discussion	
	legal position in				
	India for NP				
	practice. What is				
	the future of				
	nurse				
	prescribingpolicie				
	s in India with				
	relevance to				
	these policies in				
	other countries?				
	III.Examine the				
	nursing protocols				
	relevant to NP				
	practice found in				
	various ICUs in				
	you tertiary				
	Centre				

## Text book:

- 1. Barkers, A.M. (2009). Advanced Practice Nursing. Massachussets: Jones & Bartlett Publishers
- 2. Hickey, J. V., Ouimette, R. M., &Venegoni, S. L. (1996) Advanced practice nursing: Changing roles and clinical applications. Philadelphia: Lippincott Williams and Wilkins.
- 3. Schober, M., &Affara, F. A. (2006), Advanced nursing practice. Oxford: Blackwell publishing.
- 4. Stewart, G.J, & Denisco, S.M. (2015). Role Development for the Nurse Practitioner. USA: Springer Publishing Company

# II. Research application and Evidence Based Practice in critical care

# **Subject distribution:**

The subject will be for 1 year duration. The topics covered under theory training are as follows

S. No	TOPIC	HRS
1.	Research and Advanced Practice Nursing:	2
	Significance of Research and inquiry related to Advanced nursing	
	role	
2.	Research agenda for APN practice:	5
	<ul> <li>Testing current practice to develop best practice</li> </ul>	
	Health outcomes Indicators of quality care in advanced	
	practice	
	<ul> <li>Promoting research culture</li> </ul>	
3.	Research Knowledge and skills:	40 (5 days
	<ul> <li>Research competencies essential for APNs</li> </ul>	workshop)
	<ul> <li>Research Methodology: Phases / steps</li> </ul>	
	<ul> <li>Writing research proposal and research report</li> </ul>	
4.	Writing for publication	5 (Workshop)
5.	Evidence based practice	4
	<ul> <li>Concepts, principles, importance and steps</li> </ul>	
	<ul> <li>Integrating EBP to ICU environment</li> </ul>	
	Areas of evidence in critical care	
	Barriers to implement EBP	
	Strategies to promote	

# II. Research Application And Evidence Based Practice In Critical Care

Placement: Nurse Practitioner in Critical Care Post Graduate Residency Program

# **Hours of Instruction**

(Theory: 56+Lab/skill lab: 24hrs) =80hrs Research practicum: Dissertation (336 hrs.=7weeks)

S. No	TOPIC	DOMAINS	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
1	Research and Advanced	Good to	Identifies		
	Practice Nursing:	know	Significance		
	Significance of Research		of Research		
	and inquiry related		and inquiry		
	toAdvanced nursing role		related to		
			Advanced		
			nursing role		
2	Research agenda for APN	Essential to	0	Evaluates	
	practice:	perform		current practice	
	<ul> <li>Testing current</li> </ul>			to develop best	
	practice to develop			practices and	
	best practice			health	
	<ul> <li>Health outcomes</li> </ul>			outcomes and	
	Indicators of			quality care in	
	quality care in			advanced	
	advanced practice			practice	
	<ul> <li>Promoting research</li> </ul>				
	culture				
3	Research Knowledge and	Essential to	0	Applies sound	

	skills:	perform	research	
	Research	<b>,</b>	knowledge and	
	competencies		skills in	
	essential for APNs		conducting	
	Research		independent	
	Methodology:		research in	
	Phases / steps		critical care	
	<ul><li>Writing research</li></ul>		setting	
	proposal and		3338	
	research report		Writes research	
	researen report		proposal and	
			research report	
4	Writing for publication	Desirable to	Prepares	Develop
	arriania de parametra	perform	manuscript for	understanding
		<b>,</b>	publication	in writing for
				publication
			Writes	(writing for
			systematic	workshop)
			review	1 ,
5	Evidence based practice	Essential to		Analyses the
	<ul> <li>Concepts,</li> </ul>	perform		evidence for
	principles,			nursing
	importance and			interventions
	steps			carried out in
	<ul> <li>Integrating EBP to</li> </ul>			critical care
	ICU environment			nursing
	<ul> <li>Areas of evidence</li> </ul>			practice to
	in critical care			promote
	<ul> <li>Barriers to</li> </ul>			safety and
	implement EBP			effectiveness
	• Strategies to			of care.
	promote			

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment

- Project work
- Practice teaching
- Annotated references from journals

# Assessment techniques for practical

- Sessional Examination = Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

#### **II.RESEARCH APPLICATION AND EVIDENCE BASED PRACTICE IN CRITICAL CARE**

Placement: Nurse Practitioner in Critical CarePost Graduate Residency Program

**Hours of Instruction** 

(Theory: 56+Lab/skill lab: 24hrs) =80hrs Research practicum: Dissertation (336hrs.=7weeks)

S.	CONTENT OF	LEARNING OBJECTIVES TE	EACHING	METHODOLOGY	TIME
NO	TOPICS	(At the end of the O	BJECTIVES	WILTHODOLOGI	IIIVIL

	T				,
		session the student			
		should be able to)			
1	Research and Advanced Practice Nursing:  • Significance of Research • Advanced nursing role	<ol> <li>Describe the concept of Research</li> <li>Discuss the concept of Advance Practice Nursing</li> <li>Review the significance of Research.</li> <li>Analyze the relation of Research inAdvanced nursing role</li> </ol>	roles and to understand about the significance of Research and inquiry related to Advanced nursing role in respect to	<ul> <li>Interactive session with the students regarding concept of research and Advanced Practice Nursing.</li> <li>Spot group discussion on Research and Advanced Practice Nursing</li> </ul>	2 hrs
2	Research agenda for APN practice:  Testing current practice  Developing best practice  Indicators of quality care in advanced practice  Promotingresea rch culture	1. Discuss the concept and scope of Advance Practice Nurse.  2. Analyze the possible health outcomes of research in health care sector.  3. Enlist the indicators of quality care in advanced practice.  4. Summarize the advantages in promoting research culture in advanced practice.	Testing current practice to develop best practice, health outcomes and indicators of quality care in advanced practice, promoting	<ul> <li>Teachers seminar on healthoutcomes and indicators of quality care in advanced practice</li> <li>Interactive session with students regarding promoting research culture.</li> <li>Role play on application of research in advanced practice.</li> </ul>	5 hrs
3	Research Knowledge and skills:	Appreciate the research competencies essential	To teach and discuss about	• Workshop on	40 hrs



	Research	for APNs	Research	Research	(5 days
	competencies		competencies	Methodology and	workshop)
	essential for	2. Demonstrate the	essential for APNs:	Phases.	
	APNs	research competencies	interpretation and		
		essential for APNs	use of research,	• Student seminar	
	Research		evaluation	on Research	
	Methodology		ofpractice,	competencies	
	<ul><li>Phases / steps of</li></ul>	3. Elaborate steps or	participation in	essential for APNs	
	research.	phases of research.	collaborative	C35C11Cla 101 711 143	
	<ul> <li>Writing research</li> </ul>	priases or researchi	research.		
	_		Research		
	proposal and		MethodologyPhas		
	research report.				
			es / steps: Research		
			question, Review of literature,		
			,		
			conceptual		
			framework,		
			research designs,		
			sampling,data		
			collection,		
			methods &tools,		
			Analysis and		
			Reporting.		
			writing research		
			proposal and		
			research report		
4	Writing for				
	publication	1. Demonstrate on writing	To teach and	Integrated teaching	5 hrs
	<ul><li>Writing workshop</li></ul>	workshop manuscript.	practice on	on writing	
			writing workshop	workshop	• • • • • • • • • • • • • • • • • • • •
		2. Enlistthe sources for	<ul><li>Manuscript</li></ul>	manuscript	
		workshop funding.	preparation and		
			finding funding		
			sources for		
			workshop.		
5	Evidence based				
	practice	1. Explain the concept,	To teach and		4 hrs
	• Concepts,	principles, importance	discuss about	• Simulated learning	71113
	- concepts,	principles, importance	uiscuss about	Simulated learning	



principles,	and steps of Evidence Conc	• •	on implementation of EBP in ICUs.	
importance and	1	iples,	OI EBP III ICUS.	
steps	2. Demonstrate impo	rtance and	<ul><li>Role play</li></ul>	
<ul><li>Integrating EBP</li></ul>	integration of EBP to steps	, Integrating	• Focus group	
to ICU	ICU. EBP	to ICU	discussions	
environment	3. Enlist the areas of envir	onment,		
• Areas of	evidence in critical care. Areas	s of evidence		
evidence in	4. List the barriers to in o	critical care,		
critical care	implement EBP. Barri	ers to		
• Barriers to	5. Discuss the strategies to imple	ement EBP,		
implement EBP	promote EBP Strate	egies to		
•Strategies to	prom	ote.		
promote EBP				

# **Bibliography:**

- Burns, N., & Grove, S. K. (2011). Understanding nursing research: Building an evidence-based practice (5<sup>th</sup>ed.). Ist Indian reprint 2012, New Delhi: Elsevier.
- Polit, D. F., & Beck, C. T. (2012). Nursing research: Generating and assessing evidence for nursing practice (9<sup>th</sup>ed.). Philadelphia: Lippincott Williams & Wilkins.
- Schmidt, N. A., & Brown, J. M. (2009). Evidence based practice for nurses' appraisal and application of research. Sd: Jones and Bartlet Publishers.

# III. Advanced in Leadership, Management and Teaching skills Subject distribution:

The subject will be for 1 year duration. The topics covered under theory training are as follows

Unit	Topic	Hours
1	Theories, styles of leadership and current trends	2
2	Theories, styles of management and current trends	2
3	Principles of leadership and management applied to critical care settings	6
4.	Stress management and conflict management – principles and application to critical care environment, Effective time management	4
5.	Quality improvement and audit	4
6	Problem solving, critical thinking and decision making, communication skills applied to critical care nursing practice	6
7.	Team building, motivating and mentoring within ICU set up	2
8.	Budgeting and management of resources including human resources – ICU budget, material management, staffing, assignments	6
9.	Change and innovation	2
10.	Staff performance, and evaluation (performance appraisals)	6
11.	Teaching – Learning theories and principles applied to Critical Care Nursing	2
12.	Competency based education and outcome based education	2
13.	Teaching methods / strategies, media: educating patients and staff in Critical Care settings	8
14.	Staff education and use of tools in evaluation	4
15.	APN – Roles as a teacher	2
16.	Advocacy roles, family counseling in critical care environment	2
	Total	60hrs

## Practical / Lab = 20.5 hrs.

- 1. Preparation of budget
- 2. Preparation of staff duty roster
- 3. Preparation of staff patient assignment
- 4. Development of teaching plan
- 5. Micro teaching / patient education sessions
- 6. Preparation of teaching media for patients and staff

**Assignment - ICU** work place violence

## COMPETENCIES (Advanced skills in Leadership, Management and Teaching)

- 1. Applies principles of leadership and management in critical care units
- 2. Manages stress and conflicts effectively in a critical care setting using sound knowledge of principles
- 3. Applies problem solving and decision making skills effectively
- 4. Uses critical thinking and communication skills in providing leadership and managing patient care in ICU
- 5. Builds teams and motivates others in ICU setting
- 6. Develops unit budget, manages supplies at staffing effectively
- 7. Participates appropriately in times of innovation and change
- 8. Uses effective teaching methods, media and evaluation based on sound principles of teaching
- 9. Develops advocacy role in patient care, maintaining quality and ethics in ICU environment
- 10. Provides counseling to families and patients in crisis situations particularly end of life care

## **CLINICAL PRACTICE**

- c. Clinical Residency experience (A minimum of 48 hrs/ week is prescribed, however, it is flexible with different shifts and OFF followed by on call duty)
- d. 8 hours duty with one day Off in a week and on call duty one per week

#### REFERNECES

- 1. Bastable, S. B. (2010). *Nurse as educator: Principles of teaching and learning for nursing practice* (3rd ed.). New Delhi: Jones & Bartlett Publishers 17
- 2. Billings, D. M., & Halstead, J. A. (2009). *Teaching in nursing: A guide for faculty* (3rd ed.). St.Louis, Missouri: Saunders Elsevier.
- 3. Clark, C. C. (2010). Creative nursing leadership and management. New Delhi: Jones and Bartlet Publishers.
- 4. McConnel. (2008). Management principles for health professionals. Sudbury, M. A: Jones and Bartlet Publishers.
- 5. Roussel, L., &Swansburg, R. C. (2010). Management and leadership for nurse administrators (5th ed.). New Delhi: Jones and Bartlet Publishers.

## III.ADVANCED SKILLS IN LEADERSHIP, MANAGEMENT AND TEACHING

Placement: Nurse Practitioner in critical care 1st Year

Hours of Instruction Theory 60 hours Practical 20.5 hours

Total: 80.5 hours

S. No	TOPIC	DOMAINS	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
1	Theories, styles of	Good to	Develops		
	leadership and current	know	knowledge		
	trends		inTheories,		

	T					
				styles of		
				leadership and current trends		
2	Theories, styles of	Good	to	Develops		
	management and	know	ιο	knowledge in		
	current trends			Theories, styles		
				of management		
				and current		
				trends		
3	Principles of leadership	Essential	to		Applies	
	and management	perform			principles of	
	applied to critical care				leadership and	
	settings				management in	
4	Stress management and	Essential	to		critical care units  Manages stress	
4	conflict management –	perform	ιο		and conflicts	
	principles and	реттотт			effectively in a	
	application to critical				critical care	
	care environment,				setting using	
	Effective time				sound	
	management				knowledge of	
					principles	
5	Quality improvement	Desirable	to		Participates in	
	and audit	perform			quality	
					improvement and audit	
					and addit	
					Prepare nursing	
					care standards	
					and protocols	
6	Problem solving, critical	Essential	to		Applies problem	
	thinking and decision	perform			solving and	
	making, communication				decision making	
	skills applied to critical				skills effectively	
7	care nursing practice	Facantial	<b>.</b>		Duilde because and	
7	Team building,	Essential	to		Builds teams and motivates others	
	motivating and mentoring within ICU	perform			in ICU setting	
	set up				in ico setting	
8	Budgeting and	Essential	to		Develops unit	
					•	



	management of resources including human resources – ICU budget, material management, staffing,	perform			budget, manages supplies and staffing effectively	
	assignments				Prepare staff duty roster	
9	Change and innovation	Desirable perform	to		Participates appropriately in times of innovation and change	
10	Staff performance, and evaluation (performance appraisals)	Essential perform	to		Evaluates staff performance  Planning and conducting OSCE/OSPE	
11	Teaching – Learning theories and principles applied to Critical Care Nursing	Desirable perform	to		Applies Teaching  - Learning theories and principles in Critical Care Nursing	
12	Competency based education and outcome based education	Good know	to	Develops knowledge in Competency based education and outcome based education		
13	Teaching methods / strategies, media: educating patients and staff in Critical Care settings	Essential perform	to		Uses effective teaching methods, media and evaluation based on sound principles of teaching	



				Conduct microteaching- patient education		
				teaching		
14	Staff education and use of tools in evaluation	Essential perform	to	Prepares evaluation tool		
				Construction of tests		
15	APN – Roles as a teacher	Essential perform	to		 eciate role	
16	Advocacy roles, family counseling in critical care environment	Essential perform	to	Demonstrate advocacy role in patient care, maintaining quality and ethics in ICU environment		

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching
- Annotated references from journals

## Assessment techniques for practical

- Sessional Examination =Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

# III.ADVANCED SKILLS IN LEADERSHIP, MANAGEMENT AND TEACHING

Placement: Nurse Practitioner in critical care 1st Year

Hours of Instruction

Theory: 56 Hours Practical: 24 Hours Total: 80 Hours

			lotal: 80 Hours			
s. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME	
1	Theories, styles of leadership and current trends	Describe the theories, styles of leadership and current trends.		Interactive session with the students regarding theories, styles of leadership and current trends.	2hrs	
2	Theories, styles of management and current trends	Elaborate the theories, styles of management and current trends	discuss about the	<ul> <li>Teachers seminar on theories.</li> <li>Interactive session with students regarding theories and current trends.</li> <li>Role play on functions of a nurse.</li> </ul>	2hrs	
3	Principles of leadership	Review the	To teach and			

	and management applied to critical care settings	principles of leadership and management applied to critical care settings	principles of leadership and	<ul> <li>Student seminar on leadership and management</li> <li>Spot group discussions</li> </ul>	6 hrs
4	Stress management and conflict management — principles and application to critical care environment, Effective time management	Review about stress management and conflict management — principles and application to critical care environment, Effective time management	To teach and discuss about the stress management and conflict management — principles and application to critical care environment, Effective time management	<ul> <li>Role play and video film on the nurses interacting with the patient</li> <li>Problem based learning for maintaining nurse patient relationship.</li> <li>Seminar on stress and conflict management</li> </ul>	4 hrs
5	Quality improvement and audit	Summarize quality improvement and audit	To teach and discuss about quality improvement and audit	_	4 hrs
6	Problem solving, critical thinking and decision making, communication skills applied to critical care nursing practice	Describe problem solving, critical thinking and decision making, communication skills applied to	To teach and discuss about the problem solving, critical thinking and decision making, communication	<ul> <li>Case studies</li> <li>Student seminar on Problem solving, critical</li> </ul>	6 hrs



		critical care nursing practice	skills applied to critical care nursing practice	thinking and decision making, communication skills.	
7	Team building, motivating and mentoring within ICU set up	Demonstrate team building, motivating and mentoring within ICU set up.	To teach and discuss about the team building, motivating and mentoring within ICU set up.	<ul> <li>Integrated teaching on team building in ICU</li> <li>Role play</li> </ul>	2 hrs
8	Budgeting and management of resources including human resources – ICU budget, material management, staffing, assignments	Describe the budgeting and management of resources including human resources — ICU budget, material management, staffing, assignments	To teach and discuss about the budgeting and management of resources including human resources — ICU budget, material management, staffing, assignments	Focus group discussion on budgeting and management of resources.  Seminar on material management and staffing	6 hrs
9	Change and innovation	Discuss the change and innovation	To teach and discuss about change and innovation	Panel discussion on change and innovation	2 hrs
10	Staff performance, and evaluation (performance appraisals)	Review staff performance, and evaluation (performance appraisals)	To teach and discuss about Staff performance, and evaluation (performance appraisals)	Seminar on performance appraisals.  Project based learning	6hrs

	T	T	Τ		
11	Teaching – Learning theories and principles applied to Critical Care Nursing	Elaborate teaching  – Learning theories and principles applied to Critical Care Nursing		<ul> <li>Seminar on teaching — Learning theories and principles applied to Critical Care Nursing</li> <li>Interactive sessions</li> </ul>	2 hrs
12	Competency based education and outcome based education	Demonstrate the competency based education and outcome based education	To teach and discuss about competency based education and outcome based education	Focus based discussion on competency education  Fish bowl technique on outcome education	2 hrs
13	Teaching methods / strategies, media: educating patients and staff in Critical Care settings	Demonstrate teaching methods / strategies, media: educating patients and staff in Critical Care settings	teaching methods / strategies, media:	Seminar on teaching methods and strategies Interactive session	8hrs
14	Staff education and use of tools in evaluation	Summarize staff education and use of tools in evaluation	discuss about staff	Seminar on staff education  Role play on staff	4 hrs



				education and use of tools in evaluation.	
15	APN – Roles as a teacher	Elaborate the APN  — Roles as a teacher	To teach and discuss about the APN – Roles as a teacher	Teachers seminar on Simulated learning on APN – Roles as a teacher.	2 hrs
16	Advocacy roles, family counseling in critical care environment	Review the advocacy roles, family counseling in critical care environment	discuss about advocacy roles,	Project based learning Role play on family counseling	2 hrs

#### Text book:

- 1. Bastable, S. B. (2010). *Nurse as educator: Principles of teaching and learning for nursing practice* (3rd ed.). New Delhi: Jones & Bartlett Publishers 17
- 2. Billings, D. M., & Halstead, J. A. (2009). *Teaching in nursing: A guide for faculty* (3rd ed.). St.Louis, Missouri: Saunders Elsevier.
- 3. Clark, C. C. (2010). Creative nursing leadership and management. New Delhi: Jones and Bartlet Publishers.
- 4. McConnel. (2008). Management principles for health professionals. Sudbury, M. A: Jones and Bartlet Publishers.
- 5. Roussel, L., &Swansburg, R. C. (2010). Management and leadership for nurse administrators (5th ed.). New Delhi: Jones and Bartlet Publishers.

## IV. A. Advanced pathophysiology applied to critical care nursing – I

S no	Topic	Hours
1	Cardiology function	8
2	Pulmonary function	4
3	Neurological function	6
4	Renal function	4
5	Gastro-intestinal and hepatobiliary function	4
6	Endocrine function	4

## **Course distribution**

## Advanced pathophysiology applied to critical care nursing -I

S no	Content	Hours
1	Hematological function	8
2	Integumentary function	2
3	Multisystem dysfunction	8
4	Specific function	6
5	Reproductive function	6

# Clinical practice -

- Clinical residency experience(a minimum of 48 hrs/ week is prescribed, however, it is flexible with different shifts and off followed by on call duty)
- 8 hours duty with one day off in a week and on call duty one per week clinical placements:

## Bibliography -

- 1. Huether, s. E., &mccance, k. L. (2012). Understanding pathophysiology (5th ed.). St. Louis, missouri: elsevier
- 2. John, g., subramani, k., peter, j. V., pitchamuthu, k., &chacko, b. (2011). Essentials of critical care (8th ed.). Christian medical college: vellore.
- 3. Porth, c. M. (2007). Essentials of pathophysiology: concepts of altered health states (2nded.). Philadelphia: lippincottwilliams and wilkins.

4. Urden, I. D., stacy, k. M., & lough, m. E. (2014). Critical care nursing- diagnosis and management (7th ed.). Elsevier: Missouri

IV (A). Advanced pathophysiology applied to critical care nursing - I

	T _				
S no	Content	DOMAINS	COGNITIVE	PSYCHOMOTO	AFFECTIVE
				R	
1	Cardiovascular function	Good to	Analyzes the	Applies	Integrates the
	Advanced	know	pathophysiological	pathophysiologi	knowledge of
	pathophysiological		changes relevant	cal principles in	pathophysiolo
	process of	Essential	to cardiovascular	symptom	gical process in
	cardiovascular	to	conditions	management	cardiovascular
	conditions	perform	recognizing the	and secondary	conditions in
	<ul> <li>hypertensive disorder</li> </ul>		value of diagnosis,	prevention of	developing
	<ul> <li>peripheral artery</li> </ul>		treatment, care	cardiovascular	diagnosis and
	disorder		and prognosis	conditions	plan of care
	<ul><li>venous disorders</li></ul>				
	<ul> <li>coronary artery</li> </ul>				
	diseases				
	<ul> <li>Valvular heart disease</li> </ul>				
	<ul> <li>cardiomyopathy and</li> </ul>				
	heart failure				
	<ul> <li>cardiac tamponade</li> </ul>				
	<ul><li>Arrythmias</li></ul>				
	<ul> <li>Corpumonale</li> </ul>				
	<ul> <li>heart block and</li> </ul>				
	conduction				
	disturbances				_
2	pulmonary function	Good to	Analyzes the	Applies	Integrates the
	advanced	know	pathophysiological	pathophysiologi	knowledge of
	pathophysiological process		changes relevant	cal principles in	pathophysiolo

r					
of pı	ulmonary conditions	Essential	to pulmonary	symptom	gical process in
•	chronic obstructive	to	conditions	management	pulmonary
puln	nonary disease	perform	recognizing the	and secondary	conditions in
•	disorders of the		value of diagnosis,	prevention of	developing
puln	nonary vasculature		treatment, care	pulmonary	diagnosis and
• in	fectious diseases		and prognosis	conditions	plan of care
• res	spiratory failure				
• ch	nest trauma				
3 Neu	rological function	Good to	Analyzes the	Applies	Integrates the
adv	anced	know	pathophysiological	pathophysiologi	knowledge of
path	nophysiological process		changes relevant	cal principles in	pathophysiolo
of no	eurological conditions	Essential	to cardiovascular	symptom	gical process in
• se	eizure disorder	to	conditions	management	neurological
• ce	erebrovascular disease	perform	recognizing the	and secondary	conditions in
• inf	ections	-	value of diagnosis,	prevention of	developing
• spi	inal cord disorder		treatment, care	neurological	diagnosis and
• de	generative neurological		and prognosis	conditions	plan of care
disea	ases				
• ne	eurological trauma				
	oma, unconsciousness				
4 Rena	al function	Good to	Analyzes the	Applies	Integrates the
Adva	anced	know	pathophysiological	pathophysiologi	knowledge of
path	nophysiological process		changes relevant	cal principles in	pathophysiolo
of re	enal conditions	Essential	to renal conditions	symptom	gical process in
• acr	ute renal failure	to	recognizing the	management	renal
• ch	ronic renal failure	perform	value of diagnosis,	and secondary	conditions in
• bl	adder trauma	•	treatment, care	prevention of	developing
•			and prognosis	renal conditions	diagnosis and
infe	ctions(glomerulonephrit				plan of care
is)					
• ne	ephrotic syndrome.				
5 Gast	trointestinal and	Good to	Analyzes the	Applies	Integrates the
hepa	atobiliary function	know	pathophysiological	pathophysiologi	knowledge of
Adva	anced		changes relevant	cal principles in	pathophysiolo
path	ophysiological process	Essential	to gastrointestinal	symptom	gical process in
of he	epatobiliary conditions	to	and hepatobiliary	management	gastrointestina
	astrointestinal bleeding	perform	conditions	and secondary	l and
	testinal obstruction		recognizing the	prevention of	hepatobiliary
• int	estina obstruction				



	hepatic failure		treatment, care	and	developing
	<ul> <li>gastrointestinal</li> </ul>		and prognosis	hepatobiliary	diagnosis and
	perforation			conditions	plan of care
6	Endocrine functions	Good to	Analyzes the	Applies	Integrates the
	Advanced	know	pathophysiological	pathophysiologi	knowledge of
	pathophysiological process		changes relevant	cal principles in	pathophysiolo
	of endocrine conditions	Essential	to endocrine	symptom	gical process in
	<ul> <li>diabetic ketoacidosis</li> </ul>	to	conditions	management	endocrine
	<ul> <li>hyperosmolar non ketotic</li> </ul>	perform	recognizing the	and secondary	conditions in
	coma		value of diagnosis,	prevention of	developing
	<ul> <li>hypoglycemia</li> </ul>		treatment, care	endocrine	diagnosis and
	thyroid storm		and prognosis	conditions	plan of care
	myxedema coma				
	adrenal crisis				
	• syndrome of				
	inappropriate antidiuretic				
	hormone secretion				

# IV.A. Advanced Pathophysiology Applied to Critical Care Nursing – I

S. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	Cardiovascular function	Describe the pathopysiological process in critical conditions in developing diagnosis	To teach and discuss about Peripheral artery disorder  • Venous disorders • Coronary artery	Problem based learning Cooperative learning Case studies	8

and plan of care in cardiovascular function.  • Valvular heart disease function.  • Cardiomyopathy and heart failure valvular heart disease • Cardiac Tamponade • Cardiac Tamponade • Corpumonale • Corpumonale
function.  • Cardiomyopathy and heart failure • Cardiac Tamponade • Cardiac Tamponade • Arrythmias • Corpumonale • Cardiomyopathy and discussion on valvular heart • Cardiac Tamponade • Student interactive session on heart
heart failure valvular heart  • Cardiac Tamponade  • Arrythmias Student interactive  • Corpumonale session on heart
<ul> <li>Cardiac Tamponade</li> <li>Arrythmias</li> <li>Corpumonale</li> <li>Student interactive</li> <li>session on heart</li> </ul>
<ul> <li>Arrythmias</li> <li>Corpumonale</li> <li>Student interactive session on heart</li> </ul>
Corpumonale session on heart
Heart block and block and
conduction conduction.
disturbances
Pulmonary function  Pulmonary function  Pulmonary function  Final Enumerate the etiology pathopysiological process in critical conditions in developing diagnosis and plan of care in pulmonary functions  Pulmonary function  Final Enumerate the etiology pathopysiological process of pulmonary conditions on the pulmonary disease on Disorders of the pulmonary vasculature on Infectious diseases on Respiratory failure on Copplementary Case Discussion Case Discussion/Seminar Teacher seminar Spot group discussion Tutorials. Panel discussion on Copplementary Copplementary Conditions on Tutorials. Panel discussion on Copplementary Copplementary Conditions on Copplementary Cond
Neurological function  Neurological function  Discuss the etiology pathopysiological process in critical conditions in developing diagnosis and plan of care in neurological functions  Neurological functions  Discuss the etiology pathopysiological process of neurological conditions on ditions in developing diagnosis and plan of care in neurological functions  Neurological functions  To teach and discuss about the Advanced pathophysiological process of neurological conditions  Seminar Student interactive session  Problem based learning Fish bowel technique  Simulation technique  Neurological trauma  Coma, unconsciousness
4 Renal function Enumerate the etiology To teach and discuss 4

		pathophysiological process in critical conditions in developing diagnosis and plan of care in renal function.	about the about the Advanced pathophysiological process of renal conditions  • Acute renal failure  • Chronic renal failure  • Bladder trauma  • Infections(Glomerulone phritis)  • Nephrotic syndrome	Case Discussion / Seminar Role play Panel discussion Project based learning Case studies Focus group discussion	
5	Gastro- intestinal and hepatobiliary function	Elaborate and discuss the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in Gastrointestinal and hepatobiliary function	To teach and discuss about the Advanced pathophysiological process of hepatobiliary conditions  • Gastrointestinal bleeding  • Intestinal obstruction  • Pancreatitis  • Hepatic failure  • Gastrointestinal perforation	Seminar Problem based learning Panel discussion Project based learning Case studies Integrated teaching Spot group discussion Student interactive session	4
6	Endocrine functions	Review the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in endocrine functions	To teach and discuss about the Advanced pathophysiological process of endocrine conditions  • Diabetic ketoacidosis  • Hyperosmolar non ketotic coma  • Hypoglycemia  • Thyroid storm  • Myxedema coma  • Adrenal crisis  • Syndrome of inappropriate	Student interaction session Problem based learning Student interactive session Panel discussion Presentation Fish bowel technique	

	antidiuretic	hormone	
	secretion		

IV (B) Advanced pathophysiology applied to critical care nursing – II

S	TOPIC	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
NO					
1	Hematological function advanced pathophysiological process of hematological conditions • disorders of red blood cells - polycythemia - anemia - sickle cell diseases • disorders of white blood cells - leucopenia - neoplastic disorders • disorders of hemostasis - platelet disorders - coagulation disorders - disseminated intravascular coagulation	Good to know  Essential to perform	Analyzes the pathophysiological changes relevant to Hematological conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of Heatological conditions	Integrates the knowledge of pathophysiologic al process in Hematological conditions in developing diagnosis and plan of care
2	Integumenatry function advanced pathophysiological process of integumentary conditions • wound healing • burns	Good to know  Essential to perform	Analyzes the pathophysiological changes relevant to integumentary conditions recognizing the value of diagnosis,	Applies pathophysiological principles in symptom management and secondary prevention of	Integrates the knowledge of pathophysiologic al process in integumentary conditions in
	<ul><li>Stevenjohnson syndrome</li></ul>		treatment, care and prognosis	integumentary conditions	developing diagnosis and plan of care
3	multisystem dysfunction	Good to know	Analyzes the	Applies	Integrates the
3	advanced pathophysiological process of neurological conditions • shock - hypovolemic -	Essential to perform	pathophysiological changes relevant to multisystem dysfunction recognizing the	pathophysiological	knowledge of pathophysiologic al process in multisystem dysfunction in
	cardiogenic - distributive		value of diagnosis,	prevention of	developing

	<ul> <li>systemic inflammatory syndrome</li> <li>multiple organ dysfunction syndrome</li> <li>trauma - thoracic - abdominal - musculoskeletal - maxillofacial</li> <li>drug overdose and poisoning</li> <li>envenomation</li> </ul>		treatment, care and prognosis	multisystem dysfunction	diagnosis and plan of care
4	Specific infections advanced pathophysiological process of specific infections • HIV • tetanus • SARS • rickettsiosis • leptospirosis • dengue Chikungunya • rabies • avian flu • swine flu • malaria	Good to know  Essential to perform	Analyzes the pathophysiological changes relevant to specific infections recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of specific infections	Integrates the knowledge of pathophysiologic al process in specific infections in developing diagnosis and plan of care
5	Reproductive functions Advanced pathophysiological process of reproductive conditions	Good to know  Essential to perform	Analyzes the pathophysiological changes relevant to reproductive conditions recognizing the value of diagnosis, treatment, care and prognosis	pathophysiological principles in symptom management and secondary prevention of reproductive	al process in reproductive conditions in



<ul> <li>puerperal sepsis</li> <li>amniotic fluid embolism</li> <li>HELLP (hemolysis, elevated liver enzymes, low platelet count)</li> <li>trauma</li> </ul>				
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# IV. (B) Advanced Pathophysiology Applied to Critical Care Nursing – II

S. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	Hematological functions	Elaborate the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in Hematological functions	To teach and discuss about Advanced pathophysiological process of hematological conditions  • Disorders of red blood cells - Polycythemia - Anemia - Sickle cell diseases  • Disorders of white blood cells -	Seminar Student interactive session Panel discussion Spot group discussion Focus group discussion	8

			Leucopenia - Neoplastic disorders  Disorders of hemostasis - Platelet disorders - Coagulation disorders - Disseminated intravascular coagulation		
2	Integumentary function	Elaborate the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in integumentary functions	To teach and discuss about the Advanced pathophysiological process of integumentary conditions  • Wound healing  • Burns  • Steven Johnson Syndrome .	Health education Supervised clinical practice Panel discussion Spot group discussion Focus group discussion Project based learning Case presentation Seminar	2
3	Multisystem dysfunction	Describe and the etiology pathopysiological process in critical conditions in developing diagnosis and plan of care in multifunction dysfunction	To teach and discuss about the Advanced pathophysiological process of neurological conditions  Shock - Hypovolemic - Cardiogenic - Distributive  Systemic inflammatory syndrome  Multiple organ dysfunction syndrome	Case presentation Seminar teacher seminar Panel discussion Case Discussion / Seminar Case presentation Seminar Student Interactive session	

4	Specific functions	Enumerate the etiology pathophysiological process in critical conditions in developing diagnosis and plan	<ul> <li>Trauma - Thoracic</li> <li>Abdominal -</li> <li>Musculoskeletal -</li> <li>maxillofacial</li> <li>Drug overdose and poisoning</li> <li>Envenomation</li> <li>To teach and discuss about the Advanced pathophysiological process of specific infections</li> <li>HIV</li> <li>Tetanus</li> <li>SARS</li> <li>Rickettsiosis</li> <li>Leptospirosis</li> <li>Dengue</li> </ul>	Case presentation Seminar. Case studies Project based learning Seminar panel discussion teacher seminar students seminar	6
		of care in specific function	<ul> <li>Malaria</li> <li>Chickungunya</li> <li>Rabies</li> <li>Avian flu</li> <li>Swine flu</li> </ul>	students seminar	
5	Reproductive functions	Elaborate the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in Reproductive functions	To teach and discuss about the Advanced pathophysiological process of reproductive conditions  • Antepartum hemorrhage  • Pregnancy induced hypertension  • Obstructed labour  • Ruptured uterus  • Postpartum hemorrhage  • Puerperal sepsis	Simulation technique Tutorials Focus group discussion Drug book / presentation. Case presentation Seminar Student interactive session	6

	Amniotic fluid	
	embolism	
	HELLP (Hemolysis,	
	Elevated Liver	
	enzymes, Low	
	Platelet Count)	
	Trauma	

### V. Advanced Pharmacology relevant to Critical Care Nursing

### **Subject distribution:**

The subject will be for 1 year duration. The topics covered under theory training are as follows

Unit	Topic	Hours		
20.	Introduction to pharmacology in critical care			
21.	Pharmacokinetics and Pharmacodynamics	5		
22.	Pharmacology and Cardiovascular alterations in Critical care	6		
23.	Pharmacology and Pulmonary alterations in Critical care	6		
24.	Pharmacology and Neurological alterations in Critical care	6		
25.	Pharmacology and Nephrology alterations in Critical care	6		
26.	Pharmacology and Gastrointestinal alterations in Critical care	6		
27.	Pharmacology and Endocrine alterations in Critical care	6		
28.	Pharmacology and Hematology alterations in Critical care	6		
29.	Pharmacology and Skin alterations in Critical care	4		
30.	Pharmacology and Multisystem alterations in Critical care	8		
31.	Pharmacology and Infections in Critical care	8		
32.	TOTAL	69		

# **COMPETENCIES (Advanced Pharmacology relevant to Critical Care Nursing)**

- 1. Applies the pharmacological principles in providing care to critically ill patients and families
- 2. Analyzes pharmaco-therapeutics and pharmacodynamics relevant to drugs used in the treatment of critical care conditions
- 3. Performs safe drug administration based on principles and institutional protocols
- 4. Documents accurately and provides follow up care
- 5. Applies sound knowledge of drug interactions in administration of drugs to critically ill patients in the critical care settings and guiding their families in self care management

#### **REFERNECES**

1. Johnson, T. J. (2012). *Critical care pharmacotherapeutics*. Jones & Bartlett Learning: United States of America.

2. Wynne, A. L., Woo, T. M., &Olyaei, A. J. (2007). *Pharmacotherapeutics for nurse practitioner prescribers* (2nd ed.). Philadelphia: Davis.

### V.ADVANCED PHARMACOLOGY RELEVANT TO CRITICAL CARE NURSING

Placement: Nurse Practitioner in critical care 1st Year

Hours of Instruction Theory: 60

S. No	TOPIC	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
1	Introduction to pharmacology	Good to know			Develop
	in critical care				knowledge in
	? History				classification
	? Classification of drugs and				of drugs and
	schedules				schedules
2	Pharmacokinetics and	Good to know	Analyses		
	Pharmaco-dynamics		Pharmacokin		
	Introduction		etics and		
	• Absorption, Distribution,		Pharmaco-		
	Metabolism, Distribution and		dynamics		
	Excretion in critical care		relevant to		
	Plasma concentration, half		drugs used in		
	life		treatment of		
	Loading and maintenance		critical care		
	dose		conditions		
	Therapeutic index and drug				
	safety				
	Potency and efficacy				
	• Principles of drug				
	administration				
	The rights of drug				
	administration				
	Systems of measurement				
	② Enteral drug administration				
	Topical drug administration				

	Parentral drug administration			
3	Pharmacology and	Essential to	Develops	Applies the
	Cardiovascular alterations in	perform	knowledge in	pharmacological
	Critical care		drugs used in	principles in
	Vasoactive Medications	Good to know	cardiovascul	providing care to
	② Vasodilator,		ar conditions	patients with
	? Vasopressor,			cardiovascular
	Inotropes			alterations
	- Cardiac glycosides – digoxin			
	- Sympathomimetics –			Perform safe
	Dopamine, dobutamine,			drug
	epinephrine,isoproterenol,			administration
	norepinephrine, phenylephrine			based on
	- Phosphodiesterase			principles and
	inhibitors – amrinone,			institutional
	milrinone			protocols
	Antiarrhythmic Medications			
	• Cardiac critical care			Applies sound
	conditions			knowledge of
	Medications to improve			drug interaction
	cardiac contractility			in administration
	Medications in the			of drugs with
	management of hypertension			cardiovascular
	in critical care			alterations
	Medications in the			
	management of heart failure			
	Medications in the			
	management of angina pectoris			
	and myocardial infarction			
	Medications in the			
	management of dysrhythmias,			
	Heart block and conduction			
	disturbances			
	Medications in the			
	management of Pulmonary			
	hypertension, Valvular heart			
	disease,			
	Cardiomypathy			
	Medications in the			
	management of Atherosclerotic			

	disease of aorta and Peripheral				
	arterydisease				
	Medications in the				
	management of Deep vein				
	thrombosis				
	Institutional Protocols/Standing				
	orders for cardiac critical care				
	emergencies				
4	Pharmacology and Pulmonary	Essential to	Develops	Applies the	
	alterations in Critical care	perform	knowledge in	pharmacological	
	<ul> <li>Mechanical Ventilation</li> </ul>		drugs used in	principles in	
	Introduction	Good to know	pulmonary	providing care to	
	Medications used on patients		conditions	patients with	
	with mechanical ventilator			cardiovascular	
	Mechanical ventilation			alterations	
	impact on pharmacotherapy –				
	Sedation and analgesia,			Perform safe	
	Neuromucsular			drug	
	blockade, Nutrition			administration	
	<ul> <li>Pulmonary critical care</li> </ul>			based on	
	conditions			principles and	
	Medications in the			institutional	
	management of Status			protocols	
	asthmaticus				
	Medications in the			Applies sound	
	management of Pulmonary			knowledge of	
	edema			drug interaction	
	Medications in the			in administration	
	management of Pulmonary			of drugs with	
	embolism			cardiovascular	
	? Medications in the			alterations	
	management of Acute				
	respiratory failure and Acute				
	respiratory distress				
	syndrome				
	Medications in the				
	management of Chest trauma				
	Medications in the				
	management of Chronic				
	obstructive pulmonary disease				

<ul> <li>Medications in the management of Pneumonia</li> <li>Medications in the management of Pleural effusion</li> <li>Medications in the management of Atelectasis</li> <li>Standing orders for pulmonary critical care emergencies.</li> </ul>				
Pharmacology and Neurological alterations in Critical care Pain NSAID Opioid analgesia Sedation amino butyric acid stimulants Dexmeditomidine Analgosedation Delirium Haloperidol Atypical anti psychotics Medications used for local and general anesthesia Local- Amides, esters, and miscellaneous agents General — Gases, Volatile liquids, IV anesthetics Non anesthetic drugs adjuncts to surgery Paralytic Medications Non-depolarizing and depolarizing agents Anxiolytics Autonomic drugs Adrenergic agents/ Sympathomimetics Adrenergic blocking agents Cholinergic agents	Essential to perform  Good to know	Develops knowledge in drugs used in neurological conditions	Applies the pharmacological principles in providing care to patients with neurological alterations  Perform safe drug administration based on principles and institutional protocols  Applies sound knowledge of drug interaction in administration drugs with neurological alterations	

? Anti cholinergic agents		
• Medications in the		
management of anxiety and		
insomnia		
② Antidepressants		
Benzodiazepines		
② Barbiturates		
Neurological critical care		
conditions		
Medications in the		
management of psychoses		
Medications in the		
management of acute head and		
_		
intracranial pressure		
Medications in the		
management of muscle spasm		
? Medications in the		
management of spasticity		
2 Medications in the		
management of Cerebro		
vascular disease and cerebro		
vascular accident		
Medications in the		
management of		
_		
Medications in the		
management of Gillian Bare		
Medications in the		
management of Brain		
herniation syndrome		
2 Medications in the		
disorder		
Medications in the		
Unconsciousness and		
persistent vegetative state		
conditions  Medications in the management of psychoses  Medications in the management of acute head and spinal cord injury with elevated intracranial pressure  Medications in the management of muscle spasm Medications in the management of spasticity Medications in the management of Cerebro vascular disease and cerebro vascular accident Medications in the management of Encephalopathy Medications in the management of Gillian Bare syndrome and Myasthenia gravis Medications in the management of Brain herniation syndrome Medications in the management of Seizure disorder Medications in the management of Seizure disorder Medications in the management of Coma, Unconsciousness and		

		ī	I	T T	
	② Appropriate nursing care to				
	safeguard patient				
	Standing orders for neurology				
	critical care emergencies				
6	Pharmacology and Nephrology alterations in Critical care  • Diuretics  • Fluid replacement  ② Crystalloids  ② Colloids  • Electrolytes	Essential to perform  Good to know	Develops knowledge in drugs used in nephrologica I conditions	Applies the pharmacological principles in providing care to patients with nephrological alterations	
	<ul> <li>Sodium</li> <li>Potassium</li> <li>Calcium</li> <li>Magnesium</li> <li>Phosphorus</li> <li>Nephrology critical care conditions</li> <li>Medications in the management of Acute / Chronic renal failure</li> <li>Medications in the management of Acute tubular necrosis</li> <li>Medications in the management of Bladder</li> </ul>			Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with nephrological alterations	
	trauma  Medications in the management of Electrolyte imbalances Medications in the management of Acid base imbalances Medications used during dialysis Standing orders for nephrology critical care emergencies				
7	Pharmacology and	Essential to	Develops	Applies the	
	Gastrointestinal alterations in	perform	knowledge in	pharmacological	

 	T	T	T	,	
Critical care		drugs used in	principles in		
Anti-ulcer drugs	Good to know	gastrointesti	providing care to		
Laxatives		nal	patients with		
Anti diarrheals		conditions	gastrointestinal		
Anti emetics			alterations		
Pancreatic enzymes					
<ul> <li>Nutritional supplements,</li> </ul>			Perform safe		
Vitamins and minerals			drug		
Gastro intestinal critical care			administration		
conditions			based on		
Medications in the			principles and		
management of Acute GI			institutional		
bleeding, Hepatic failure			protocols		
Medications in the			Applies sound		
management of Acute			knowledge of		
pancreatitis			drug interaction		
Medications in the			in administration		
management of Abdominal			of drugs with		
injury			gastrointesinal		
In the			alterations		
management of Hepatic					
encephalopathy					
Medications in the					
management of Acute					
intestinal obstruction					
? Medications in the					
management of Perforative					
peritonitis					
<ul><li> Medications used during</li></ul>					
Gastrointestinal surgeries and					
Liver transplant					
Standing orders for gastro					
intestinal critical care					
emergencies					
Pharmacology and Endocrine	Essential to	Develops	Applies the		
alterations in Critical care	perform	knowledge in	pharmacological		
Hormonal therapy		drugs used in	principles in		
Insulin and Other	Good to know	endocrine	providing care to		
hypoglycemic agents		conditions	patients with		
<ul><li>Endocrine critical care</li></ul>			endocrine		
 	l			l	

conditions  Medications in the management of Diabetic ketoacidosis, Hyperosmolar non ketotic coma  Medications in the management of Diabetic drug administration based on	
management of Diabetic ketoacidosis, Hyperosmolar non ketotic coma  Perform safe drug administration	
ketoacidosis, Hyperosmolar non ketotic coma drug administration	
non ketotic coma administration	
management of hypoglycemia principles and	
Medications in the institutional	
management of Thyroid storm protocols	
Medications in the	
management of Myxedema Applies sound	
coma knowledge of	
Medications in the   drug interaction	
management of Adrenal crisis in administration	
management of SIADH endocrine	
critical care emergencies	
8 Pharmacology and Hematology Essential to Develops Applies the	
alterations in Critical care perform knowledge in pharmacological	
Anticoagulants	
Antiplatelet drugs	
• Thrombolytics conditions patients with	
Hemostatics/ antifibrinolytics hematology	
Hematopoietic growth factors     alterations	
2 Erythropoietin	
Platelet enhancers drug	
Blood and blood products     administration	
Whole blood, Packed red based on	
blood cells, Leukocyte-reduced principles and	
red cells, Washed red institutional	
blood cells, Fresh frozen protocols	
plasma, Cryoprecipitate	
2 Albumin Applies sound	
Transfusion reactions, knowledge of	
Transfusion administration drug interaction	
process in administration	
Vaccines	
Immunostimulants haematology	

	<ul> <li>Immunosuppressant</li> </ul>			alterations	
	<ul> <li>Chemotherapeutic drugs –</li> </ul>				
	Alkylating agents, anti				
	metabolites, anti tumor				
	antibiotics,				
	alkaloids, hormones and				
	hormone antagonist,				
	corticosteroids, gonadal				
	hormones, anti				
	estrogens, androgen				
	antagonists, biologic response				
	modifiers				
	<ul> <li>Hematology critical care</li> </ul>				
	conditions				
	Medications in the				
	management of Anemia in				
	critical illness				
	Medications in the				
	management of DIC				
	Medications in the				
	management of				
	Thrombocytopenia and acute				
	leukemia				
	Medications in the				
	management of Heparin				
	induced thrombocytopenia				
	Medications in the				
	management of Sickle cell				
	anemia				
	Medications in the				
	management of Tumor lysis				
	syndrome				
	②Standing orders for				
	hematology critical care				
	emergencies				
9	Pharmacology and Skin	Essential to	Develops	Applies the	
	alterations in Critical care	perform	knowledge in	pharmacological	
	Hematology critical care		drugs used in	principles in	
	conditions	Good to know	skin	providing care to	
	Medications used in burn		conditions	patients with	

	management			skin alterations	
	? Medications used in wound				
	management			Perform safe	
	<ul> <li>Standing orders for skin</li> </ul>			drug	
	critical care emergencies			administration	
	G			based on	
				principles and	
				institutional	
				protocols	
				protections	
				Applies sound	
				knowledge of	
				drug interaction	
				in administration	
				of drugs with	
				skin alterations	
10	Pharmacology and Multisystem	Essential to	Develops	Applies the	
	alterations in Critical care	perform	knowledge in	pharmacological	
	Medications in the	репопп	drugs used in	principles in	
	management of shock, sepsis,	Good to know	multisystem	providing care to	
	Multiple Organ Dysfunction,	Good to know	conditions	patients with	
			Conditions	•	
	•			multisystem alterations	
	response syndrome,			alterations	
	Anaphylaxis			5 (	
	Medications in the			Perform safe	
	management of Trauma,			drug	
	Injuries ( Heat, Electrical, Near			administration	
	Hanging,			based on	
	Near drowning)			principles and	
	• in the management of bites,			institutional	
	Drug overdose and Poisoning			protocols	
	• Medications in the				
	management of fever in critical			Applies sound	
	care setting			knowledge of	
	② Antipyretics			drug interaction	
	? NSAIDS			in administration	
	② Corticosteroids			of drugs with	
	<ul> <li>Standing orders for multi</li> </ul>			multisystem	
				alterations	

	emergencies				
12	Pharmacology and Infections in	Essential to	Develops	Applies the	
	Critical care	perform	knowledge in	pharmacological	
	<ul> <li>Antibacterial drugs</li> </ul>		drugs used in	principles in	
	Introduction	Good to know	infections	providing care to	
	Beta lactams – Penicillins,			patients with	
	cephalosporins, monobactams,			infections	
	carbapenams,				
	Aminoglycosides			Perform safe	
	🛚 Anti MRSA			drug	
	? Macrolides			administration	
	2 Quinolones			based on	
	Miscellaneous – lincosamide			principles and	
	group, nitroimidazole,			institutional	
	tetracyclins and			protocols	
	chloramphenicol,				
	polymyxins, anti malarials, anti			Applies sound	
	fungals, anti virals			knowledge of	
	Anti fungal drugs			drug interaction	
	Anti protozoal drugs			in administration	
	Anti viral drugs			of drugs with	
	Choice of antimicrobials			infections	
	• Infectious critical care				
	conditions				
	Medications in the				
ı	management of HIV, Tetanus,				
ı	SARS, Rickettsiosis,				
	Leptospirosis, Dengue, Malaria,				
	Chickungunya, Rabies, Avian flu				
	and Swine flu				
	Standing orders for infectious				
	critical care emergencies				

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching

• Annotated references from journals

# Assessment techniques for practical

- Sessional Examination =Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments

# V.ADVANCED PHARMACOLOGY RELEVANT TO CRITICAL CARE NURSING

Placement: Nurse Practitioner in critical care 1st Year

Hours of Instruction Theory: 69 Hours

S. CONTENT OF TOPICS	LEARNING OBJECTIVE (at the end of session student sho	the the	TEACHING OBJECTIVES	METHODOLOGY	TIME
1 Introduction to pharmacology in critical care 2 History 2 Classification of drugs and schedules	<ol> <li>Discuss history pharmacology</li> <li>Enumerate classification drugs schedules.</li> </ol>	the of the of and	discuss about introduction to pharmacology in critical care (history of	the students	2hrs

2	Pharmacokinetics and Pharmaco-dynamics Introduction Absorption, Distribution, Metabolism, Distribution and Excretion in critical care Plasma concentration, half life Loading and maintenance dose Therapeutic index and drug safety Potency and efficacy Principles of drug administration The rights of drug administration Systems of measurement Enteral drug administration Parentral drug administration	1.ElaboratePharma - cokinetics and Pharmaco-dynamics.  2.Summarize introduction Absorption, Distribution, Metabolism, Distribution and Excretion in critical care	To teach and discuss about Pharmacokinetics and Pharmacodynamics (IntroductionAbsorption, Distribution, Metabolism, Distribution and Excretion in critical care)Plasmaconcentration, half life,Loading and maintenance dose, Therapeutic index and drug safety,Potency and efficacy, Principles of drug administration (The rights of drug administration,Systems of measurement, Enteral drug administration,To pical drug administration,	<ul> <li>Seminar on Pharmacokin etics and Pharmacodynamics.</li> <li>Interactive session with students regarding Principles of drug administration</li> </ul>	4 hrs
3	Pharmacology and Cardiovascular alterations in Critical care  • Vasoactive Medications  ② Vasodilator,  ② Vasopressor,  ② Inotropes	1.Review the Pharmacology and Cardiovascular alterations in Critical care  2.Discuss Vasoactive	To teach and discuss about Pharmacology and Cardiovascular alterations in Critical care and vasoactive	• Student seminar on Cardiovascular alterations in Critical care and vasoactive	5 hrs

- Cardiac glycosides digoxin
- Sympathomimetics Dopamine,dobutamine, epinephrine,isoproterenol, norepinephrine, phenylephrine
- Phosphodiesterase inhibitors – amrinone, milrinone
- Antiarrhythmic Medications
- Cardiac critical care conditions
- Medications to improve cardiac contractility Medications in the management of hypertension in critical care
- Medications in the management of heart failure Medications in the management of angina
- management of angina pectoris and myocardial infarction
- Medications in the management of dysrhythmias, Heart block and conduction disturbancesMedications in the
- management of Pulmonary hypertension, Valvular heart disease,

Cardiomypathy

Medications in the management of Atherosclerotic disease of aorta and Peripheral arterydisease

Medications in the management of Deep vein

Medications.

3.Describe the medications to improve cardiac contractility, in critical care, management.

medications, medications to improve cardiac contractility, management of hypertension in critical care, management heart failure. management angina pectoris and myocardial infarction, management of dysrhythmias, Heart block and conduction disturbances, management of **Pulmonary** hypertension, Valvular heart disease, Cardiomyp

athy, management

hypertension,

management

management

thrombosis.

Atherosclerotic

disease of aorta

Valvular

disease,

and

artery

Deep

**Pulmonary** 

Peripheral

disease,

heart

of

of

vein

medications.

- Focus group discussions
- Integrated teaching on cardiovascular medications

	thrombosis				
	Institutional				
	Protocols/Standing orders for				
	cardiac critical care				
	emergencies				
4	Pharmacology and Pulmonary	1.Discuss the			
	alterations in Critical care	Pharmacology and	To teach and	<ul> <li>Problem based</li> </ul>	
	<ul> <li>Mechanical Ventilation</li> </ul>	Pulmonary	discuss about	learning for	
	Introduction	alterations in Critical	Pharmacology and	Pulmonary	4 hrs
	Medications used on	care.	Pulmonary	critical care	
	patients with mechanical		alterations in	conditions.	
	ventilator	2.Elaborate the	Critical care,		
	Mechanical ventilation	working of	mechanical	Student	
	impact on pharmacotherapy	mechanical	ventilation	seminar on	
	<ul> <li>Sedation and analgesia,</li> </ul>	ventilation(Introduct		Mechanical	
	Neuromuscular	ion,Medications	Medications used	Ventilation	
	blockade, Nutrition	used on patients	on patients with		
	<ul> <li>Pulmonary critical care</li> </ul>	with mechanical	mechanical		
	conditions	ventilator.	ventilator),		
	Medications in the		Pulmonary critical		
	management of Status	3. Review	care conditions.		
	asthmaticus	Pulmonary critical	(Medications in		
	Medications in the	care conditions	the management		
	management of Pulmonary		of Status		
	edema		asthmaticus,		
	Medications in the		Pulmonary edema,		
	management of Pulmonary		Pulmonary		
	embolism		embolism, Acute		
	Medications in the		respiratory failure		
	management of Acute		and Acute		
	respiratory failure and Acute		respiratory		
	respiratory distress		distresssyndrome,		
	syndrome		Chest trauma,		
	Medications in the		Chronic		
	management of Chest trauma		obstructive		
	Medications in the		pulmonary		
	management of Chronic		disease,		
	obstructive pulmonary		Pneumonia,		
	disease		Pleural effusion,		
	Medications in the		Atelectasis		
	i ivicalcations in the		/ ((C)CC(0313		

	management of Pneumonia  Medications in the management of Pleural effusion  Medications in the management of Atelectasis  Standing orders for pulmonary critical care emergencies.				
5	Pharmacology and Neurological alterations in Critical care Pain NSAID Opioid analgesia Sedation amino butyric acid stimulants Dexmeditomidine Analgosedation Delirium Haloperidol Atypical anti psychotics Medications used for local and general anesthesia Local- Amides, esters, and miscellaneous agents General — Gases, Volatile liquids, IV anesthetics Non anesthetic drugs adjuncts to surgery Paralytic Medications Non-depolarizing and depolarizing agents Anxiolytics Autonomic drugs Adrenergic agents/ Sympathomimetics Adrenergic blocking agents	1.Discuss the Pharmacology and Neurological alterations in Critical care  2. Summarize the medications used for local and general anesthesia.  3. Review the Paralytic Medications, Autonomic drugs, Medications in the management of anxiety and insomnia.  4. Discuss about the Neurological critical care conditions.	alterations in Critical care(Pain, Sedation, Stimulants, Delirium, Psychotics), medications used for local and general anesthesia(Local Amides, esters, and miscellaneous	<ul> <li>Simulated learning on Neurological alterations in Critical care</li> <li>Student seminar on medications used for local and general anesthesia.</li> <li>Case studies</li> <li>Integrated teaching</li> </ul>	6 hrs

Cholinergic agents	blocking	
② Anti cholinergic agents	agents,Cholinergic	
• Medications in the	agents, Anti	
management of anxiety and	cholinergic	
insomnia	agents),	
2 Antidepressants	Medications in the	
Benzodiazepines	management of	
Barbiturates	anxiety and	
Neurological critical care	insomnia(	
conditions	Antidepressants,	
? Medications in the	Benzodiazepines,	
management of psychoses	Barbiturates),	
Medications in the	Neurological	
management of acute head	critical care	
and spinal cord injury with	conditions,	
elevated	Medications in the	
intracranial pressure	management of	
? Medications in the	psychoses, acute	
management of muscle	head and spinal	
spasm	cord injury with	
Medications in the	elevatedintracrani	
management of spasticity	al pressure,	
Medications in the	muscle spasm,	
management of Cerebro	spasticity, Cerebro	
vascular disease and cerebro	vascular disease	
vascular accident	and cerebro	
? Medications in the	vascular accident,	
management of	Encephalopathy,	
Encephalopathy	Gillian Bare	
? Medications in the	syndrome and	
management of Gillian Bare	Myasthenia gravis,	
syndrome and Myasthenia	Brain herniation	
gravis	syndrome, Seizure	
? Medications in the	disorder, Coma,	
management of Brain	Unconsciousness	
herniation syndrome	and persistent	
? Medications in the	vegetative state.	
management of Seizure		
disorder		
? Medications in the		

	management of Coma, Unconsciousness and persistent vegetative state  Appropriate nursing care to safeguard patient Standing orders for neurology critical care emergencies				
6	Pharmacology alterations in Critical care  Diuretics Fluid replacement Crystalloids Colloids Electrolytes Sodium Potassium Calcium Magnesium Medications in the management of Acute / Chronic renal failure Medications in the management of Bladder trauma Medications in the management of Electrolyte imbalances Medications in the management of Electrolyte imbalances Medications in the management of Acid base imbalances Medications used during dialysis	1.Explain about thePharmacology and Nephrology alterations in Critical care. 2.Describe Nephrology critical care conditions.	To teach and discuss about Pharmacology and Nephrology alterations in Critical care(Diuretics, Fluid replacement, Electrolytes), Nephrology critical care conditions.	<ul> <li>Simulated learning on Pharmacology and Nephrology alterations in Critical.</li> <li>Student seminar on fluid replacement therapy.</li> <li>Focus group discussion</li> <li>Integrated teaching</li> </ul>	5 hrs

		<u></u>		<del>,</del>	
	• Standing orders for				
	nephrology critical care				
	emergencies.				
7	Pharmacology and				
	Gastrointestinal alterations in	1.Discuss the	To teach and	<ul> <li>Simulated</li> </ul>	5 hrs
	Critical care	Pharmacology and	discuss about	learning of	
	Anti-ulcer drugs	Gastrointestinal	Pharmacology and	Gastrointestin	
	Laxatives	alterations in Critical	Gastrointestinal	al alterations	
	Anti diarrheal	care.	alterations in	in Critical care.	
	Anti emetics		Critical care(Anti-		
	Pancreatic enzymes	2.Review the Gastro	ulcer drugs,	Seminar on	
	<ul> <li>Nutritional supplements,</li> </ul>	intestinal critical	Laxatives, Anti	Gastrointestin	
	Vitamins and minerals	care conditions.	diarrheal, Anti	al alterations	
	Gastro intestinal critical		emetics,	in Critical care.	
	care conditions		Pancreatic		
	Medications in the		enzymes,		
	management of Acute GI		Nutritional		
	bleeding, Hepatic failure		supplements,		
	? Medications in the		Vitamins and		
	management of Acute		minerals), Gastro		
	pancreatitis		intestinal critical		
	Medications in the		care conditions.		
	management of Abdominal		(Acute GI		
	injury		bleeding, Hepatic		
	<b>IDMedications</b> in the		failure, Acute		
	management of Hepatic		pancreatitis,		
	encephalopathy		Abdominal injury,		
	Medications in the		Hepatic		
	management of Acute		encephalopathy,		
	intestinal obstruction		Acute intestinal		
	Medications in the		obstruction,		
	management of perforative		perforative		
	peritonitis		peritonitis,		
	Medications used during		Gastrointestinal		
	Gastrointestinal surgeries and		surgeries and Liver		
	Liver transplant		transplant).		
	Standing orders for gastro				
	intestinal critical care				
	emergencies				

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8	Pharmacology and Endocrine	1.Discuss the			
	alterations in Critical care	Pharmacology and	To teach and	<ul> <li>Simulated</li> </ul>	4hrs
	② Hormonal therapy	Endocrine	discuss about	learning on	
	Insulin and Other	alterations in Critical		Pharmacology	
	hypoglycemic agents	care	Endocrine	and Endocrine	
	② Endocrine critical care		alterations in	alterations in	
	conditions	2.Review the	Critical care,	Critical care	
		Hormonal	Hormonal		
	management of Diabetic	therapy,Insulin and	therapy,Insulin	• Seminar on	
	ketoacidosis, Hyperosmolar	Other hypoglycemic	and Other	hormonal	
	non ketotic coma	agents.	hypoglycemic	therapy,	
			agents, Endocrine	Insulin and	
	management of		critical care	Other	
	hypoglycemia		conditions	hypoglycemic	
	☑Medications in the		(Medications in	agents.	
	management of Thyroid		the management	go	
	storm		of Diabetic		
	Medications in the		ketoacidosis,		
	management of Myxedema		Hyperosmolar non		
	coma		ketotic coma,		
			hypoglycemia,		
	management of Adrenal crisis		Thyroid storm,		
			Myxedema coma,		
	management of SIADH		Adrenal crisis,		
	Standing orders for		SIADH.		
	endocrine critical care		0		
	emergencies				
	emergeneres				
9	Pharmacology and	1.Discuss the	To teach and		
	Hematology alterations in			Student	
	Critical care	Hematology	Pharmacology and	Seminar on	5hrs
	Anticoagulants	alterations in Critical	Hematology	Hematology	
	Antiplatelet drugs	care.	alterations in	critical care	
	• Thrombolytics		Critical care,(	conditions.	
	•Hemostatics/	2.Summarize the	Anticoagulants,	23	
	antifibrinolytics	Hematology critical	Antiplatelet drugs,	Case studies on	
	Hematopoietic growth	care conditions.	Thrombolytics,	hematological	
	factors	care conditions.	Hemostatics/	alterations in	
	Erythropoietin		antifibrinolytics,	Critical care	
	Colony stimulating factors		Hematopoietic	Citical cale	
	E COLORY SURFIGIALITY TACKOTS		пеннаторонетіс		

S	6	
	? Platelet enhancers	growth factors,
	Blood and blood products	Blood and blood
	Whole blood, Packed red	products, Whole
	blood cells, Leukocyte-	blood, Packed red
	reduced red cells, Washed	blood cells,
	red	Leukocyte-
	blood cells, Fresh frozen	reduced red cells,
	plasma, Cryoprecipitate	Washed red, blood
	2 Albumin	cells, Fresh frozen
	<ul> <li>Transfusion reactions,</li> </ul>	plasma,
	Transfusion administration	Cryoprecipitate,
	process	Albumin)
	Vaccines	Hematology
	Immunostimulants	critical care
	• Immunosuppressant	conditions.
	Chemotherapeutic drugs –	Transfusion
	Alkylating agents, anti	administration
	metabolites, anti tumor	process
	antibiotics,	(Vaccines,
	alkaloids, hormones and	Immunostimulants
	hormone antagonist,	Immunosuppressa
	corticosteroids, gonadal	nt
	hormones, anti	Chemotherapeutic
	estrogens, androgen	drugs – Alkylating
	antagonists, biologic	agents, anti
	response modifiers	metabolites, anti
	Hematology critical care	tumor
	conditions	antibiotics,alkaloid
	Medications in the	s, hormones and
	management of Anemia in	hormone
	critical illness	antagonist,
	Medications in the	corticosteroids,
	management of DIC	gonadal
	Medications in the	hormones,

antiestrogens,

antagonists).

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Dean
Faculty of Nursing
SGT University
Budhera, Gurugram

Thrombocytopenia and acute

management of Heparin induced thrombocytopenia

in

Medications

of

the

management

leukemia

	Medications in the management of Sickle cell anemia Medications in the management of Tumor lysis syndrome  Standing orders for hematology critical care emergencies				
10	Pharmacology and Skin alterations in Critical care  • Hematology critical care conditions  ② Medications used in burn management ② Medications used in wound management  • Standing orders for skin critical care emergencies.	1.Discuss the Pharmacology and Skin alterations in Critical care.	To teach and discuss about Pharmacology and Skin alterations in Critical care, Medications used in burn management and wound management.	Seminar on Pharmacology and Skin alterations in Critical care.  Focus group discussions	3hrs
11	Pharmacology and Multisystem alterations in Critical care  • Medications in the management of shock, sepsis, Multiple Organ Dysfunction, Systemic inflammatory response syndrome, Anaphylaxis  • Medications in the management of Trauma, Injuries ( Heat, Electrical, Near Hanging, Near drowning)  • in the management of bites, Drug overdose and Poisoning  • Medications in the	1.Discuss the Pharmacology and Multisystem alterations in Critical care.  2.Summarize the Medications in the management of shock, sepsis, Multiple Organ Dysfunction, Systemic inflammatory response syndrome, Anaphylaxis	management of	<ul> <li>Seminar on management of shock.</li> <li>Simulated learning on management of Trauma, Injuries.</li> </ul>	5 hrs



	management of fever in critical care setting  Antipyretics  NSAIDS  Corticosteroids  Standing orders for multi system critical care emergencies		Trauma, Injuries ( Heat, Electrical, Near Hanging, Near drowning), the management of bites, Drug overdose and Poisoning, Medications in the management of fever in critical care setting (Antipyretics, NSAIDS,Corticoste roids)		
12	Pharmacology and Infections in Critical care  • Antibacterial drugs  ② Introduction ③ Beta lactams — Penicillins, cephalosporins, monobactams, carbapenams, ② Aminoglycosides ② Anti MRSA ② Macrolides ② Quinolones ② Miscellaneous — lincosamide group, nitroimidazole, tetracyclins and chloramphenicol, polymyxins, anti malarials, anti fungals, anti virals  • Anti fungal drugs • Anti protozoal drugs • Anti viral drugs • Choice of antimicrobials • Infectious critical care conditions ② Medications in the	1.Discuss the Pharmacology and Infections in Critical care  2.Summarize theMedications in the management of HIV, Tetanus, SARS, Rickettsiosis, Leptospirosis, Dengue, Malaria, Chickungunya, Rabies, Avian flu and Swine flu.	To teach and discuss about the Pharmacology and Infections in Critical care, Antibacterial drug (Introduction, Beta lactams — Penicillins, cephalosporins, monobactams, carbapenams), Aminoglycosides, Anti MRSA, Macrolides, Quinolo Miscellaneous — lincosamide group, nitroimidazole, tetracyclins and chloramphenicol, polymyxins, antimalarials, antifungals, anti virals,	<ul> <li>Interactive session on Pharmacolog y and Infections in Critical care</li> <li>Seminar on Medications in the management of HIV, Tetanus, SARS, Rickettsiosis, Leptospirosis , Dengue, Malaria, Chickunguny a, Rabies, Avian flu and Swine flu.</li> </ul>	6 hrs

management of HIV, Tetanus,	Anti fungal drugs,
SARS, Rickettsiosis,	Anti-protozoal Anti-protozoal
Leptospirosis, Dengue,	drugs,
Malaria, Chickungunya,	Anti viral drugs
Rabies, Avian flu and Swine	
flu	
Standing orders for	
infectious critical care	
emergencies	

# **BIBLIOGRAPHY**

- 1. Johnson, T. J. (2012). *Critical care pharmacotherapeutic*. Jones & Bartlett Learning: United States of America
- 2. Wynne, A. L., Woo, T. M., &Olyaei, A. J. (2007). *Pharmacotherapeutic for nurse practitioner prescribers* (2nd ed.).

Philadelphia: Davis.

# VI. Advanced Health/Physical Assessment in Critical Care Nursing

# Subject distribution:

The subject will be for 1 year duration. The topics covered under theory training are as follows

Unit	Topic	Hours
33.	Introduction	4
34.	Cardiovascular System	6
35.	Respiratory System	6
36.	Nervous System	6
37.	Renal System	6
38.	Gastrointestinal System	4
39.	Endocrine System	4
40.	Hematological System	4
41.	Integumentary System	3
42.	Musculoskeletal System	6
43.	Reproductive System (Male & Female)	5
44.	Sensory Organs	4
45.	Assessment of children	6
46.	Assessment of Older adults	6

ΤΟΤΔΙ	70
IUIAL	70

### **Clinical Training**

The students will be exposed to practical demonstrations in various departments for above purposes. Clinical training comprises of 46 hours. A student must complete 100% of attendance notified in each of the practical areas before award of degree.

- Applies the physical assessment principles in developing appropriate system wise examination skills.
- Uses advanced health assessment skills to differentiate between variations of normal and abnormal findings
- Orders screening and diagnostic tests based on the examination findings
- Analyses the results of various investigations and works collaboratively for development of diagnoses
- Documents assessment, diagnosis, and management and monitors follow up care in partnership with health care team members, patients, and families

### VI.ADVANCED HEALTH/PHYSICAL ASSESSMENT IN CRITICAL CARE NURSING

Placement: Nurse Practitioner in Critical Care Nursing I year

Hours of Instruction Theory: 70 Hours Practical: 46 Hours Total: 116 Hours

S. NO	TOPIC	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
1	Introduction:	Essential		Applies the	
	<ul> <li>History taking</li> </ul>	to		physical	
	<ul> <li>Physical</li> </ul>	perform		assessment	



			, ,	
examination			principles in	
			developing	
			appropriate	
			system wise	
			examination	
			skills	
2 Cardiovascular System	Good to	,	Uses advanced	
Cardiac history	know	result of various	health	
Physical		investigations	assessment	
examination	Essential to		skills to	
Cardiac	perform	cardiovascular	differentiate	
laboratory		system	between	
Cardiac			variation of	
diagnostic studies			normal and	
			abnormal	
			findings	
			Orders screening	
			and diagnostic	
			tests based on	
			the examination	
			findings	
3 Respiratory System	Good to	Analyzes the	Uses advanced	
	know	result of various	health	
History		investigations	assessment	
Physical	Essential to		skills to	
examination	perform	respiratory	differentiate	
Respiratory		system	between	
monitoring			variation of	
<ul> <li>Respiratory</li> </ul>			normal and	
Diagnostic tests			abnormal	
			findings	
			Ordoro caracrira	
			Orders screening and diagnostic	
			tests based on	
			the examination	
			findings	
4 Nervous System	Good to	Analyzes the	Uses advanced	
General physical	know	result of various	health	
examination		1	i	

					1	
	<ul><li>Assessment of</li></ul>	Essential	to	related to	skills to	
	cognitive function	perform		nervous system	differentiate	
	<ul> <li>Assessment of</li> </ul>				between	
	cranial nerve				variation of	
	function				normal and	
	<ul><li>Motor</li></ul>				abnormal	
	assessment –				findings	
	muscle strength,					
	power, and				Orders screening	
	reflexes				and diagnostic	
	<ul><li>Sensory</li></ul>				tests based on	
	assessment –				the examination findings	
	dermatome				illulligs	
	assessment					
	<ul> <li>Neurodiagnostic</li> </ul>					
	studies – CT scan,					
	MRI, PET					
5	Renal System	Good	to	Analyzes the	Uses advanced	
	<ul><li>History</li></ul>	know		result of various	health	
	<ul> <li>Physical</li> </ul>			investigations	assessment	
	examination	Essential	to	related to renal	skills to	
	<ul> <li>Assessment of</li> </ul>	perform		system	differentiate	
	renal function				between	
	<ul> <li>Assessment of</li> </ul>				variation of	
	electrolytes and				normal and	
	acid base balance				abnormal	
	<ul> <li>Assessment of</li> </ul>				findings	
	fluid balance				0	
					Orders screening and diagnostic	
					and diagnostic tests based on	
					the examination	
					findings	
6	Gastrointestinal System	Good	to	Analyzes the	Uses advanced	
	<ul><li>History</li></ul>	know		result of various	health	
	<ul><li>Physical</li></ul>			investigations	assessment	
	examination	Essential	to	related to	skills to	
	<ul><li>Nutritional</li></ul>	perform		gastrointestinal	differentiate	
	assessment			system	between	
	•Laboratory studies				variation of	

						,
	<ul> <li>Liver function studies, blood parameters, stool test</li> <li>Diagnostic studies – radiological and imaging studies,</li> </ul>				normal and abnormal findings  Orders screening and diagnostic tests based on	
	endoscopic studies				the examination findings	
7	<ul> <li>History</li> <li>Physical examination,</li> <li>Laboratory studies</li> <li>Diagnostic studies</li> </ul>	know	to	Analyzes the result of various investigations related to endocrine system	Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings  Orders screening and diagnostic	
					and diagnostic tests based on the examination findings	
8	<ul> <li>Hematological System</li> <li>History</li> <li>Physical examination</li> <li>Laboratory studies</li> <li>Diagnostic studies</li> </ul>	know	to	Analyzes the result of various investigations related to hematological system	Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings  Orders screening and diagnostic tests based on the examination findings	

	1		<u> </u>	T
9	<ul> <li>Integumentary System</li> <li>History</li> <li>Physical examination</li> <li>Pathological examination</li> </ul>	Good to know Essential to perform	result of various investigations	Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings  Orders screening and diagnostic tests based on the examination
10	Musculoskeletal System	Good to know Essential to perform	result of various investigations	findings  Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings  Orders screening and diagnostic tests based on the examination findings
11	Reproductive System (Male & Female)      History     Physical     examination      Laboratory     studies      Diagnostic     studies	Good to know Essential to perform	result of various investigations	Uses advanced health assessment skills to differentiate between variation of normal and abnormal

12	Sensory Organs      History     Physical examination     Laboratory studies     Diagnostic studies - Radiological and imaging studies, endoscopic	Good to know Essential to perform	Analyzes the result of various investigations related to sensory organs	assessment skills to differentiate between variation of normal and abnormal findings
	studies			Orders screening and diagnostic tests based on the examination findings
13	Growth and development     Nutritional assessment     Specific system assessment	Good to know Essential to perform	Analyzes the result of various assessment techniques related to children	Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings  Orders screening and diagnostic
14	Assessment of Older	Good to	Analyzes the	tests based on the examination findings  Uses advanced
	Adults	know	result of various	

<ul> <li>History</li> <li>Physical assessment</li> <li>Psychological assessment</li> </ul>	Essential to perform	assessment techniquesrelated to older adults	assessment skills to differentiate between variation of normal and abnormal findings
			Orders screening and diagnostic tests based on the examination findings

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching
- Annotated references from journals

# Assessment techniques for practical

- Sessional Examination = Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments

# VI.ADVANCED HEALTH/PHYSICAL ASSESSMENT IN CRITICAL CARE NURSING

Placement: Nurse Practitioner in Critical Care Nursing I year

Hours of Instruction

Theory: 70 Hours

Faculty of Nursing SGT University

Budhera, Gurugram

Practical: 46 Hours Total: 116 Hours

s. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	History taking     Physical examination	Describe patient's history in a logical and organized manner.  Demonstrate the four methods of physical examination (inspection, palpation, percussion, and auscultation)  Review the diagnostic value of history and physical examination.	To teach and discuss about the significant attributes of a symptom, including location and radiation, intensity, quality, temporal sequence (onset, duration, frequency), alleviating factors, aggravating factors, setting, associated symptoms, functional impairment, and patient's interpretation of symptom, four methods of physical examination (inspection, palpation, percussion, and auscultation), including, their purposes, and the findings they elicit, the physiologic mechanisms that explain key findings in the history and physical exam.	<ul> <li>Interactive session with the students regarding methods of physical examination and steps of history taking.</li> <li>Focus group discussion</li> </ul>	4hrs

	0 1: 1				
2	Cardiovascular System	Enumerate the various cardiac laboratory studies.  Summarize the Cardiac diagnostic studies.	To teach and discuss about logical and organizedcollection of cardiac history, Various Cardiac laboratory studies including biochemical markers, hematological studies, various Cardiac diagnostic studies — Electrocardiogram, echocardiography, stress testing, radiologicalimaging	<ul> <li>Seminar on Cardiac         Diagnostic studies</li> <li>Interactive session with students regarding Cardiac laboratory studies</li> <li>Project based leaning</li> </ul>	6hrs
3	<ul> <li>History</li> <li>Physical examination</li> <li>Respiratory monitoring</li> <li>Respiratory Diagnostic tests</li> </ul>	Explain the various methods of respiratory monitoring.  Appreciate the Respiratory diagnostic tests.	To teach and discuss about logical and organized collection of Respiratory history and physical examination, methods and instruments for Respiratory monitoring — Arterial blood gases, pulse oximetry, endtidal carbon dioxide monitoring, Respiratory Diagnostic tests — Chest radiography, ventilation perfusion scanning, pulmonary angiography, bronchoscopy, thoracentesis, sputum culture, pulmonary function test	<ul> <li>Student seminar on Respiratory Diagnostic tests.</li> <li>Simulated learning on Respiratory monitoring.</li> </ul>	6 hrs

4	Nervous System				
4	<ul> <li>General physical examination</li> <li>Assessment of cognitive function</li> <li>Assessment of cranial nerve function</li> <li>Motor assessment</li> <li>Sensory assessment</li> <li>Neurodiagnos tic studies</li> </ul>	Discuss the general physical examination and assessment of cognitive function.  Demonstrate the assessment of cranial nerve function.  Perform the motor assessment and sensory assessment.  Evaluate the neurodiagnostic studies.	To teach and discuss about the General physical examination, assessment of cognitive function, assessment of cranial nerve function, motor assessment — muscle strength, power, and reflexes, Sensory assessment — dermatome assessment, Neurodiagnostic studies — CT scan, MRI, PET	<ul> <li>Interactive session on assessment of cognitive function and cranial nerve function.</li> <li>Problem based learning</li> </ul>	6hrs
5	Renal System      History     Physical examination     Assessment of renal function     Assessment of electrolytes and acid base balance     Assessment of fluid	Discuss the history taking and physical examination related to the Renal system  Demonstrate the assessment of renal function, electrolyte and acid base balance and fluid balance.	To teach and discuss about history taking and physical examination related to the Renal system, assessment of renal function, electrolyte and acid base balance and fluid balance.	Seminar on     Assessment of     Renal function  Focus group     discussion	6hrs
6	balance  Gastrointestinal  System  History  Physical examination  Nutritional	1. Appreciate the history taking and physical examination related to the Gastrointestinal System	To teach and discuss about the history taking and physical examination related to the Gastrointestinal	• Interactive session on Assessment of	4 hrs

		2 5.4	C -1		
7	assessment  •Laboratory studies — Liver function studies, blood parameters, stool test  •Diagnostic studies — radiological and imaging studies, endoscopic studies	Perform the laboratory studies related to Gastrointestinal System     Assist the diagnostic studies related to Gastrointestinal System	System, Laboratory studies – Liver function studies, blood parameters, stool test, Diagnostic studies – radiological and imaging studies, endoscopic studies	gastrointestina I system  Simulation Technique on studies related to Gastrointestin al System	
	<ul> <li>History</li> <li>Physical examination,</li> <li>Laboratory studies</li> <li>Diagnostic studies</li> </ul>	<ol> <li>Describe the history taking and physical examination related to the Endocrine System</li> <li>Perform the laboratory studies related to Endocrine System</li> <li>Assist diagnostic studies related to Endocrine System</li> </ol>	To teach and discuss about the history taking and physical examination related to the Endocrine System, of Hypothalamus and pituitary gland, Thyroid gland, Parathyroid gland, Endocrine gland and Adrenal gland	<ul> <li>Interactive         Session on         assessment of         endocrine         system</li> <li>Project based         learning</li> </ul>	4 hrs
8	Hematological System      History     Physical     examination     Laboratory     studies     Diagnostic     studies	<ol> <li>Describe the history taking and physical examination related to the hematological System</li> <li>Appreciate the laboratory studies and diagnostic studies related to</li> </ol>	To teach and discuss about the history taking and physical examination related to hematological System, Laboratory studies blood parameters, Diagnostic studies bone marrow aspiration	<ul> <li>Spot group discussion of assessment of hematological system</li> <li>Simulation technique on</li> </ul>	4 hrs



		homatalogical Systems		diagnostic	
		hematological System		diagnostic studies related	
				to	
				hematological	
_	I.I	4. Bassilla tha bista	T- 1	System	21
9	Integumentary	1. Describe the history	To teach and discuss	Interactive	3hrs
	System	taking and physical	about the history taking	Session	
	History	examination related	and physical	onphysical	
	<ul> <li>Physical</li> </ul>	to	examination related to	examination	
	examination	IntegumentarySystem	Integumentary System,	related to	
	<ul> <li>Pathological</li> </ul>	2. Review the	the various pathological	Integumentary	
	examination	laboratory studies and diagnostic studies	examination related to the Integumentary	System	
		related to	System such as tissue	Problem based	
		Integumentary	examination.	leaning	
		System			
10	Musculoskeletal	1. Describe the history	To teach and discuss	Seminar on	
	System	taking and physical	about the history taking	physical	
	<ul><li>History</li></ul>	examination related	and physical	examination	
	<ul> <li>Physical</li> </ul>	to Musculoskeletal	examination related to	related to	6 hrs
	examination	System	Musculoskeletal System	Musculoskeletal	
	<ul> <li>Laboratory</li> </ul>	2. Explain the	such as gait assessment,	System	
	studies	laboratory studies	joint		
	<ul> <li>Diagnostic</li> </ul>	and diagnostic studies	assessment,Laboratory		
	studies	related to	studies – blood	Focus group	
		Musculoskeletal	parameters	discussion	
		System	(inflammatory enzymes,		
		·	uric acid), Diagnostic		
			studies - Radiological		
			and imaging studies,		
			endoscopic studies		
11	Reproductive System	1.Describe the history	To teach and discuss	•Interactive	
	(Male & Female)	taking and physical	aboutthe history taking	Session	
	History	examination related	and physical	onhistory	5 hrs
	• Physical	to Reproductive	examination related to	taking and	
	examination	System	Musculoskeletal	physical	
	Laboratory	3,000	System, laboratory	examination	
	studies		studies and diagnostic	related to	
		2. Review the	studies related to the	Reproductive	
	Diagnostic	laboratory studies	reproductive system	System	
	studies	iaboratory studies	reproductive system	Jystelli	



		and diagnostic studies related to Reproductive System	such as Pap smear, colposcopy, hysteroscopy, biopsy, semen analysis.	Simulation     Technique	
12	<ul> <li>History</li> <li>Physical examination</li> <li>Laboratory studies</li> <li>Diagnostic studies - Radiological and imaging studies, endoscopic studies</li> </ul>	<ul> <li>1. Describe the history taking and physical examination related to Sensory Organs</li> <li>2. Perform the laboratory studies related to Sensory Organs</li> <li>3. Assist in diagnostic studies related to Sensory Organs</li> </ul>	To teach and discuss about the history taking and physical examination related to Sensory Organs, Laboratory studies, Diagnostic studies - Radiological and imaging studies, endoscopic studies	Seminar on Diagnostic studies related to sensory organs.  Fish bowl technique	4hrs
13	Assessment of children      Growth and development     Nutritional assessment     Specific system assessment	<ol> <li>Discuss the growth and development of children.</li> <li>Demonstrate the nutritional assessment and specific system assessment of children.</li> </ol>	To teach and discuss about the growth and development of children, nutritional assessment and specific assessment of children.	Seminar on Growth and development of children Project based learning	6hrs
14	Assessment of Older Adults	<ol> <li>Describe the history taking and physical examination of older adults</li> <li>Enumerate the various psychological</li> </ol>	To teach and discuss about the history taking and physical examination of older adults, various psychological assessment of older	Interactive sessions related to the psychological assessment of older adults	6hrs

assessment of older adults	adults.	

#### References:

- Bickley, L. S., &Szilagyi, P. G. (2013). Bates' guide to physical examination and history taking (11th ed.). New Delhi: Lippincott Williams and Wilkins. Rhoads, J. (2006).
- Advanced health assessment and diagnostic reasoning. Philadelphia: Lippincott Williams & Wilkins.
- Wilson, S. F., & Giddens, J. F. (2006). Health assessment for nursing practice (4th ed.). St. Louis, Missouri: Saunders Elsevier

Syllabus: 2<sup>nd</sup> year

## **I.Foundations of Critical Care Nursing Practice**

#### Preamble

Foundations of Critical Care Nursing Practice, develops fundamental knowledge and skills required to care for patients in critical care nursing practice contexts. The subject provides a theoretical and practical foundation that prepares students for ethically oriented professional practice and undertake further studies at more advanced levels in critical care nursing. The

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subject enables students to develop critical thinking and problem solving skills, specialized clinical proficiency, and effective communication skills. Students will be able to make

independent judgements; plan, implement and evaluate practice in specialty contexts and

function effectively as a member of a multidisciplinary team.

Goals

The primary goal of the subject is to train specialist nurses with advanced educational

preparation required to support specialized and super specialized healthcare services. The critical care NP program prepares registered BSc nurses for advanced practice roles as clinical

experts, managers, educators and consultants leading to M.Sc. degree in critical care NP

**Objectives** 

At the end of this course, the student will be able to:

1. Assume responsibility and accountability to provide competent care to critically ill

patients and appropriate family care in tertiary care centres

2. Demonstrate clinical competence / expertise in providing critical care which includes

diagnostic reasoning, complex monitoring and therapies

3. Apply theoretical, patho-physiological and pharmacological principles and evidence base

in implementing therapies / interventions in critical care

4. Identify the critical conditions using differential diagnosis and carry out

treatment/interventions to stabilize and restore patient's health and minimize or

manage complications independently or collaboratively as a part of critical care team

5. Collaborate with other health care professionals in the critical care team, across the

continuum of critical care

Dean

### **Teaching strategies**

The curriculum is based on both clinical and public health sectors of the society. Themajor focus is on individuals rather than population aggregates. students are prepared to participate in a multidisciplinary approach to planning, implementing and evaluating programs and services for client health and safety.

It is assumed that there will be approximately 144 in the 1 year period of this course subject. Of which, theory teaching will be for 96 hours and practical will be for 48 hours. Out of the 48 hours of practical include demonstration by the faculty and practice by the students

CPR (BLS and ACLS)

Airway Management

o Laryngeal mask airway

o Cuff inflation and anchoring the tube

o Care of ET tube

o Tracheostomy care

o Suctioning - open/closed

o Chest physiotherapy

② Oxygenation and oximetry, care of patient with oxygen delivery devices

o Devices to measure oxygen/oxygenation

- Fuel cell

- Para magnetic oxygen analyzer

- PO2 electrodes-Clark electrodes

- Transcutaneous oxygen electrodes

- Oximetry – Pulse oximetry, Venous oximetry

o Capnography

- o Non invasive ventilation
- Low flow variable performance devices: nasal catheters/cannulae/double nasal prongs, face mask, face mask with reservoir bags
- High flow fixed performance devices : Entrainment (Venturi) devices, NIV/CPAP/Anesthetic masks, T pieces, breathing circuits
- o Postural drainage
- Ventilation and ventilator support
- o Connecting to ventilator
- o Weaning from ventilator
- o Extubation
- o Humidifiers
- o Nebulizers jet, ultrasonic
- o Inhalation therapy metered dose inhalers (MDI), dry powder inhalers (DPI)
- Circulation and perfusion (including hemodynamic evaluation and waveform graphics)
- o Invasive blood pressure monitoring
- o Non-invasive BP monitoring
- o Venous pressure (Peripheral, Central and Pulmonary artery occlusion pressure)
- o Insertion and removal of arterial line
- o Insertion and removal of central line
- o Pulse index Continuous Cardiac output (PiCCO)
- o Electrocardiography (ECG)
- o Waveforms

- Pluids and electrolytes
- o Fluid calculation and administration (crystalloids and colloids)
- o Administration of blood and blood products
- o Inotrope calculation, titration and administration
- Cardiac glycosides Digoxin
- Sympathomimetics Dopamine, dobutamine, epinephrine, isoproterenol, norepinephrine, phenylephrine
- Phosphodiesterase inhibitors amrinone, milrinone
- o Electrolyte correction (Sodium, potassium, calcium, phosphrous, magnesium)
- o Use of fluid dispenser and infusion pumps
- ② Evaluation of acid base status
- o Arterial blood gas (ABG)
- Thermoregulation, care of patient with hyper/hypothermia
- o Temperature probes
- o Critical care management of hyper and hypothermia
- ② Glycemic control, care of patient with glycemic imbalances
- o Monitoring GRBS
- o Insulin therapy (sliding scale and infusion)
- o Management of Hyperglycemia IV fluids, insulin therapy, potassium supplementation
- o Management of hypoglycemia Dextrose IV
- Pharmacological management of pain, sedation, agitation, and delirium
- o Calculation, loading and infusion of Morphine, Fentanyl, Midazolam, Lorazepam, Diazepam,

Propofol, Clonidine, Desmedetomidine, Haloperidol

o Epidural analgesia- sensory and motor block assessment, removal of epidural catheter after discontinuing therapy, change of epidural catheter site dressing, insertion and removal of subcutaneous port for analgesic administration, intermittent catheterization for urinary retention for patients on epidural analgesia/PCA, dose titration for epidural infusion, epidural catheter adjustment, purging epidural drugs to check patency of catheter and also for analgesia

Counseling

Pamily education

# **I.Foundations of Critical Care Nursing Practice**

The subject will be for 1 year duration. The topics covered under theory training are as follows

S. NO	TOPICS	HOURS
1	Introduction to Critical Care Nursing  Review of anatomy and physiology of vital organs Historical review- Progressive patient care(PPC) Concepts of critical care nursing Principles of critical care nursing Scope of critical care nursing Critical care unit set up Personnel in ICU Technology in critical care Healthy work environment	10 hrs

	Future challenges in critical care nursing	
2	Concept of Holistic care applied to critical care nursing practice	5hrs
	<ul> <li>Application of nursing process in the care of critically ill</li> </ul>	
	Admission and progress in ICU- An overall view	
	Overview of ICU Management	
3	Appraisal of the critically ill	10hrs
	Triaging concept, process and principles	
	Assessment of the critically ill	
	Monitoring of the critically ill	
	Evaluation of the critically ill	
4	Advanced Concepts and Principles of Critical Care	14hrs
	Principles of cardio-pulmonary-brain resuscitation	
	Emergencies in critical care	
	Ventilation and ventilator support	
	Circulation and perfusion	
	Fluids and electrolytes imbalances.	
	Thermoregulation, care of patient with hyper/hypo-thermia	
	Liberation from life support (Weaning)	
	Glycemic control, care of patient with glycemic imbalances	
5	Pain and management	8hrs
	Pain in Critically ill patients	
	• Pain – Types, Theories	
	<ul> <li>Physiology, Systemic responses to pain and psychology of pain</li> </ul>	
	Acute pain services	
	Pain assessment	
	Pain management	
6	Psychosocial and spiritual alterations: Assessment and management	8hrs
	Stress and psychoneuroimmunology	
	Post traumatic stress reaction	
	ICU Psychosis, Anxiety, Agitation, Delirium	
	Alcohol withdrawal syndrome and delirium tremens	
	Collaborative management	
	Sedation and Relaxants	
	Spiritual challenges in critical care	
	Coping with stress and illness	
	Care of family of the critically ill	
	Counseling and communication	

7	Patient and family education and counseling	4hrs
	Challenges of patient and family education	
	Process of adult learning	
	Factors affecting teaching learning process	
	Informational needs of families in critical care	
	Counseling needs of patient and family	
	Counseling techniques	
8	Nutrition Alterations and Management in critical care	5hrs
	Nutrient metabolism and alterations	
	Assessing nutritional status	
	Nutrition support	
	Nutrition and systemic alterations	
	Care of patient on enteral and parentral nutrition	
9	Sleep alterations and management	4hrs
	Normal human sleep	
	Sleep pattern disturbance	
	Sleep apnea syndrome	
10	Infection control in critical care	5hrs
	Nosocomial infection in intensive care unit	
	Disinfection, Sterilization,	
	Standard safety measures,	
	Prophylaxis for staff	
	Antimicrobial therapy- review	
11	Legal and ethical issues in critical care-Nurse's role	6hrs
	Legal issues	
	Ethical issues	
	Managing Scarce resource in critical care	
12	Quality assurance	8hrs
	Design of ICU/CCU	
	assurance models applicable to ICUs	
	Standards, Protocols, Policies, Procedures	
	Nursing audit relevant to critical care	
	Staffing	
13	Evidence based practice in critical care nursing	3hrs
	Evidence based practice in critical care	
	Barriers to implementation	
	Strategies to promote implementation	

14	Class test	5hrs	

### **Clinical Training**

The students will be exposed to practical demonstrations in various departments for above purposes. Clinical training comprises of 48 hours. A student must complete 100% of attendance notified in each of the practical areas before award of degree.

- Applies advanced concepts of critical care nursing based on sound knowledge of these concepts
- Uses invasive and noninvasive technology and interventions to assess, monitor and promote physiologic stability
- Works in collaboration with other healthcare team members
- Consults with and is consulted by other health care professionals
- Provides nursing care related to health protection, disease prevention, anticipatory guidance, counseling, management of critical illness, palliative care and end of life care
- Uses advanced skills in complex and unstable environments
- Applies ethically sound solutions to complex issues related to individuals, populations and systems of care
- Practices principles of infection control relevant to critical care
- Practices independently within the legal framework of the country towards the interest of patients, families and communities
- Develops practice that is based on scientific evidence
- Uses applicable communication, counseling, advocacy and interpersonal skills to initiate , develop and discontinue therapeutic relationships
- Creates and maintains a safe therapeutic environment using risk management strategies and quality improvement
- Adapts practice to the social, cultural and contextual milieu

# NP Critical Care Competencies (Adapted from ICN, 2005)

- Uses advanced comprehensive assessment, diagnostic, treatment planning, implementation and evaluation skills
- Applies and adapts advanced skills in complex and / or unstable environments
- Applies sound advanced clinical reasoning and decision making to inform, guide and teach in practice

- Documents assessment, diagnosis, management and monitors treatment and follow-up care in partnership with the patient
- Administer drugs and treatments according to institutional protocols
- Uses applicable communication, counselling, advocacy and interpersonal skills to initiate, develop and discontinue therapeutic relationships
- Refers to and accepts referrals from other health care professionals to maintain continuity of care
- Practices independently where authorizes and the regulatory framework allows in the interest of the patients, families and communities
- Consults with and is consulted by other health care professionals and others
- Works in collaboration with health team members in the interest of the patient
- Develops a practice that is based on current scientific evidence and incorporated into the health management of patients, families and communities
- Introduces, tests, evaluates and manages evidence based practice
- Uses research to produce evidence based practice to improve the safety, efficiency and effectiveness of care through independent and inter-professional research
- Engages in ethical practice in all aspects of the APN role responsibility
- Accepts accountability and responsibility for own advanced professional judgement, actions, and continued competence
- Creates and maintains a safe therapeutic environment through the use of risk management strategies and quality improvement
- Assumes leadership and management responsibilities in the delivery of efficient advanced practice nursing services in a changing health care system
- Acts as an advocate for patients in the health care systems and the development of health policies that promote and protect the individual patient, family and community
- Adapts practice to the contextual and cultural milieu

#### **CLINICAL PRACTICE**

- e. Clinical Residency experience (A minimum of 48 hrs/ week is prescribed, however, it is flexible with different shifts and OFF followed by on call duty)
- f. 8 hours duty with one day Off in a week and on call duty one per week

### **Clinical placements:**

a. Clinical Residency experience(A minimum of 48 hrs/ week is prescribed, however, it is flexible with different shifts and OFF followed by on call duty)

- b. 8 hours duty with one day Off in a week and on call duty one per week!! Year: 45wks (Excludes one week of block classes)
  - Medical ICU 12 weeks
  - Surgical ICU 12 weeks
  - Cardio/Cardio thoracic (CT) ICU 8 weeks
  - Emergency Department 8 weeks
  - Other ICUs (Neurology, Burns, Dialysis unit) 6 weeks

II YEAR=46 weeks/ 2208 hrs(46x48hrs) (Theory +Lab: 8.5hrs/week for 45wks=384+48hrs) (1 week Block classes = 48 hrs)

II year: 288-144-1776hrs ("") [Theory + Lab=20%, Clinical=80%]

### References

- 1. Diepenbrock, N. H. (2008). Quick reference to critical care (3rd ed.). Philadelphia: Lippincott Williams and Wilkins.
- 2. John, G., Subramani, K., Peter, J. V., Pitchamuthu, K., &Chacko, B. (2011). Essentials of critical care (8th ed.) . Christian Medical College: Vellore.
- 3. Morton, P. G., & Fontaine, D. K. (2013). Critical Care Nursing: A Ho;istic Approach (9th ed.). Lippincott Williams and Wilkins: Philadelphia
- 4. Perrin, K. O. (2009). Understanding the essentials of critical care nursing. New Jersey: Pearson Education.
- 5. Urden, L. D., Stacy, K. M., & Lough, M. E. (2014). Critical Care Nursing- Diagnosis and management (7th ed.). Elsevier: Missouri
- 6. Wyckoff, M., Houghton, D., &Lepage, C. (2009). Critical care. New York: Springer publishing company.

# I.FOUNDATIONS OF CRITICAL CARE NURSING PRACTICE

Placement: Nurse Practitioner in Critical Care Nursing II year

Hours of Instruction Theory: 96 Hours Practical: 48 Hours Total: 144 Hours

S. NO	TOPICS	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
1	Introduction to Critical Care Nursing  • Review of anatomy and physiology of vital	Good to know	Develops knowledge in concepts and principles of		Develops understanding in scope and future challenge in critical care

				Т	
	organs		critical care		nursing
	<ul> <li>Historical review-</li> </ul>		nursing		
	Progressive patient				
	care(PPC)				
	<ul> <li>Concepts of critical care</li> </ul>				
	nursing				
	<ul> <li>Principles of critical care</li> </ul>				
	nursing				
	<ul> <li>Scope of critical care</li> </ul>				
	nursing				
	<ul> <li>Critical care unit set up</li> </ul>				
	<ul> <li>Personnel in ICU</li> </ul>				
	<ul> <li>Technology in critical</li> </ul>				
	care				
	<ul><li>Healthy work</li></ul>				
	environment				
	<ul> <li>Future challenges in</li> </ul>				
	critical care nursing				
2	Concept of Holistic care applied	Essential to		Applies nursing	
	to critical care nursing practice	perform		process in care	
	<ul> <li>Application of nursing</li> </ul>			of critically ill	
	process in the care of			patients	
	critically ill				
	<ul> <li>Admission and progress</li> </ul>				
	in ICU- An overall view				
	• Overview of ICU				
	Management				
3	Appraisal of the critically ill	Essential to		Uses invasive and	
	Triaging concept, process and	perform		noninvasive	
	principles			technology and	
	<ul> <li>Assessment of the</li> </ul>			interventions to assess, monitor	
	critically ill			and promote	
	<ul> <li>Monitoring of the</li> </ul>			physiologic	
	critically ill			stability	
	• Evaluation of the			-	
	critically ill				
4	Advanced Concepts and	Essential to		Applies	
	Principles of Critical Care	perform		advanced	
	Principles of cardio-pulmonary-			concepts of	

	brain resuscitation			critical care	
	Emergencies in critical care			nursing based on	
	Ventilation and ventilator			sound knowledge	
	support			of these concepts	
	Circulation and perfusion				
	Fluids and electrolytes			Performs ACLS	
	imbalances.			and BLS on 2	
	Thermoregulation, care of			patients	
	patient with hyper/hypo-				
	thermia				
	• Liberation from life support				
	(Weaning)				
	• Glycemic control, care of				
	patient with glycemic				
	imbalances				
5		Good t	o Develops	Performs pain	Dovolons
3	Pain and management	_		•	Develops
	Pain in Critically ill patients	know	knowledge in theories	assessment on	understanding in
	<ul><li>Pain – Types, Theories</li><li>Physiology Systemic</li></ul>	Essential		•	the management
	111/313138/7) 3/31311113	toperform	and types of		of pain
	responses to pain and psychology of pain	toperioriii	pain		
	1				
	<ul><li>Acute pain services</li><li>Pain assessment</li></ul>				
	Pain management				
6	Psychosocial and spiritual	Good t	o Develops	Demonstrate	
	alterations: Assessment and	know	knowledge	counselling and	
	management		in	communication	
	Stress and	Essential t	o psychosocial		
	psychoneuroimmunology	perform	and spiritual		
	Post traumatic stress reaction		alterations		
	• ICU Psychosis, Anxiety,				
	Agitation, Delirium				
	Alcohol withdrawal syndrome				
	and delirium tremens				
	Collaborative management				
	Sedation and Relaxants				
	• Spiritual challenges in critical				
	care				
	• Coping with stress and illness				
L		1		- L	I

7 Pat and Charled P P P P P P P P P P P P P P P P P P P	Counseling and mmunication  tient and family education d counseling allenges of patient and family ucation Process of adult learning Factors affecting teaching arning process Informational needs of milies in critical care Counseling needs of patient d family Counseling techniques	Essential to perform		Uses applicable communication, counseling, advocacy and interpersonal skills to initiate, develop and discontinue therapeutic relationships	
Ma Nur alte • A • N • alte	atrition Alterations and anagement in critical care atrient metabolism and serations Assessing nutritional status Nutrition support Nutrition and systemic serations Care of patient on enteral and rentral nutrition	Essential to perform  Good to	Develops	Provides care for 5 patients on enteral and parenteral nutrition	
ma No • S	eep alterations and anagement ormal human sleep Sleep pattern disturbance Sleep apnea syndrome	Good to know	Develops knowledge on sleep pattern disturbances	Provide care to 2 patients with sleep alterations	
	fection control in critical care osocomial infection in	Essential to perform		Practices principles of	

<ul> <li>intensive care unit</li> <li>Disinfection, Sterilization,</li> <li>Standard safety measures,</li> <li>Prophylaxis for staff</li> <li>Antimicrobial therapy- review</li> </ul>		infection control relevant to critical care
11 Legal and ethical issues in critical care-Nurse's role  • Legal issues • Ethical issues • Managing Scarce resource in critical care	Essential to perform	Practices independently within the legal framework of the country towards the interest of patients, families and communities
Quality assurance Design of ICU/CCU  assurance models applicable to ICUs Standards, Protocols, Policies, Procedures Nursing audit relevant to critical care Staffing	Essential to perform	Creates and maintains a safe therapeutic environment using risk management strategies and quality improvement
Evidence based practice in critical care nursing Evidence based practice in critical care  Barriers to implementation Strategies to promote implementation	Essential to perform	Practices evidence based care in critical care
14 Class test		

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work

- Practice teaching
- Annotated references from journals

# Assessment techniques for practical

- Sessional Examination = Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

### **VII.FOUNDATIONS OF CRITICAL CARE NURSING PRACTICE**

Placement: Nurse Practitioner in Critical Care Nursing II year

Hours of Instruction Theory: 96 Hours Practical: 48 Hours Total: 144 Hours

S. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIM E
1	Introduction to Critical		<del>-</del>		10
	Care Nursing	Describe the	To teach and discuss	Interactive	10
	<ul> <li>Introduction</li> </ul>	anatomy and	about the anatomy and	session with the	hrs
	<ul> <li>Review of anatomy</li> </ul>	physiology of vital	physiology of vital organs	students	
	and physiology of	1 7 37	(Brain, Spinal Cord, Lungs,	regarding	
	vital organs	organs	Heart, Kidney,	anatomy and	
	<ul> <li>Historical review-</li> </ul>	Appreciate the	Liver, Pancreas, Thyroid,	physiology of vital	
	Progressive patient	concepts and	Adrenal and Pituitary	organs	
	care(PPC)	•	gland), Historical review-		
	Concepts of critical	principles of critical	Progressive patient	Focus group	
	care nursing	care nursing	care(PPC), Concepts of	discussion on	
	<ul> <li>Principles of critical</li> </ul>	Discuss the scope	critical care nursing,	concepts and	

	care nursing  Scope of critical care nursing  Critical care unit set up  Personnel in ICU  Technology in critical care  Healthy work environment  Future challenges in critical care nursing	and future challenges in critical care nursing	Principles of critical care nursing, Scope of critical care nursing, Critical care unit set up (including types of ICU, equipment, supplies, beds and accessories, use and care of various type of monitors & ventilators, Flow sheets, supply lines and the environment), Personnel in ICU such as Nursing staff, Doctors, Critical care technicians, Ancillary staff, Technology in critical care, Healthy work environment, Future challenges in critical care nursing	principles in critical care nursing.  Seminar on progressive patient care.	
a n  p c	Concept of Holistic care applied to critical care nursing practice. Application of nursing process in the care of critically ill. Admission and progress in CU- An overall view. Overview of ICU Management	-Demonstrate the application of nursing process in the care of critically ill  -Summarize the overview of ICU Management		<ul> <li>Interactive session with students regarding ICU management</li> <li>Case studies</li> </ul>	5 hrs

			critical care unit: End of life care/Care of dying, care of family, organ donation, Transport of the critically ill – By air ambulance and surface ambulance, Stress and burnout syndrome among health team members		
3	Appraisal of the critically ill  Triaging concept, process and principles  • Assessment of the critically ill  • Monitoring of the critically ill  • Evaluation of the critically ill	1.Demonstrate the assessment, monitoring and evaluation of the critically ill	critically ill (General	learning onassessment, monitoring and evaluation of the critically ill.	10 hrs

			Evaluation of the critically ill (Evaluation of pre critical illness, Evaluation of critical illness, Outcome and scoring systems, Acute Physiology and Chronic Health Evaluation (APACHE I-IV), Mortality probability model (MPM I, II), Simplified acute physiology score (SAPS I, II), Organ system failure, Full outline of unresponsiveness (FOUR), Model for end-stage liver disease)		
4	Advanced Concepts and Principles of Critical Care Principles of cardio-pulmonary-brain resuscitation  • Emergencies in critical care  • Ventilation and ventilator support  • Circulation and perfusion  • Fluids and electrolytes imbalances.  • Thermoregulation, care of patient with hyper/hypothermia  • Liberation from life support (Weaning)  • Glycemic control, care of patient with glycemic imbalances	Discuss the principles of cardio-pulmonary brain resuscitation.  Review the various emergencies in critical care	about the Principles of cardio-pulmonary-brain resuscitation, Emergencies in critical	<ul> <li>Simulated learning on cardio-pulmonary brain resuscitation.</li> <li>Seminar on emergencies in critical care</li> <li>Role play</li> </ul>	14 hrs

5	Pain and management Pain in Critically ill patients • Pain – Types, Theories • Physiology, Systemic responses to pain and psychology of pain • Acute pain services • Pain assessment • Pain management	<ol> <li>Describe about pain, its types, theories and physiology</li> <li>Enumerate the various methods for pain management</li> </ol>	graphics), Fluids and electrolytes (review), care of patient with imbalances of fluid and electrolytes, Evaluation of acid base status, Thermoregulation, care of patient with hyper/hypothermia, Liberation from life support (Weaning), Glycemic control, care of patient with glycemic imbalances  To teach and discuss about Pain — Types, Theories, Physiology, Systemic responses to pain and psychology of pain, Acute pain services, Pain assessment — Pain scales, behavior and verbalization, Pain management-pharmacological (Opioids, benzodiazepines, propofol, Alpha agonist, Tranquilisers, Neuromuscular blocking agents)Nonpharmacologic al management Such as Transcutaneous electrical	discussion on	8 hrs
			stimulation(TENS)		
6	Psychosocial and spiritual alterations: Assessment	1. Describe	To teach and discuss		
	and management Stress and psychoneuroimmunology • Post traumatic stress reaction	about stress and pychoimmun ology	aboutStress and psychoneuroimmunology, Post traumatic stress reaction, ICU Psychosis, Anxiety, Agitation,	<ul> <li>Interactive session on pychosocial alterations and its</li> </ul>	8 hrs

	<ul> <li>ICU Psychosis, Anxiety, Agitation, Delirium</li> <li>Alcohol withdrawal syndrome and delirium tremens</li> <li>Collaborative management</li> <li>Sedation and Relaxants</li> <li>Spiritual challenges in critical care</li> <li>Coping with stress and illness</li> <li>Care of family of the critically ill</li> <li>Counseling and communication</li> </ul>	Explain about pychosocial alterations and its management	Delirium, Alcohol withdrawal syndrome and delirium tremens, Collaborative management, Sedation and Relaxants, Spiritual challenges in critical care, Coping with stress and illness, Care of family of the critically ill, Counseling and communication	management Fish bowl technique	
7	Patient and family education and counseling Challenges of patient and family education • Process of adult learning • Factors affecting teaching learning process • Informational needs of families in critical care • Counseling needs of patient and family • Counseling techniques	<ol> <li>Describe         about family         and adult         education.</li> <li>Enumerate         the factors         affecting         teaching and         learning         process</li> <li>Summarize         about the         various         counseling         techniques.</li> </ol>	about Challenges of patient and family education, Process of adult learning, Factors affecting teaching	<ul> <li>Interactiv         e session         on         Counselin         g         technique         s         Role play</li> </ul>	4 hrs
8	Nutrition Alterations and Management in critical care Nutrient metabolism and alterations  • Assessing nutritional	<ol> <li>Describe about the nutrition and systemic alterations</li> <li>Demonstrate</li> </ol>	about nutrient	<ul> <li>Seminar on nutrition and systemic alterations</li> </ul>	5hr s

			T	, ,
status	the care of patient on enteral and parentral nutrition	Nutrition and systemic alterations, Care of patient on enteral and parentral nutrition	<ul><li>Problem based learning</li></ul>	
9 Sleep alterations and management Normal human sleep • Sleep pattern disturbance • Sleep apnea syndrome	Describe the normal human sleep pattern     Elaborate about sleep pattern disturbances	To teach and discuss about normal sleep wake cycle (Stages of sleep, REM sleep, NREM sleep, Factors affecting sleep, Methods of sleep study), Sleep pattern disturbance (Hypersomnia and its management, Insomnia and its management, Parasomnia and its management), Sleep apnea syndrome	Seminar on Sleep pattern disturbances  Spot group discussion on normal human sleep	4 hrs
10 Infection control in critical care Nosocomial infection in intensive care unit  Disinfection, Sterilization, Standard safety measures, Prophylaxis for staff Antimicrobial therapyreview	1. Describe about  Nosocomial  infection in  intensive care  unit  2. Review the  standard safety  measures	To teach and discuss about nosocomial infection in intensive care unit; methyl resistant staphylococcus aureus (MRSA) and other recently identified strains, Disinfection, Sterilization, Standard safety measures, Prophylaxis for staff, Antimicrobial therapy-review	<ul> <li>Role play and video films</li> <li>Fish bowl technique</li> <li>Interactiv e sessions</li> </ul>	5hrs
11 Legal and ethical issues in critical care-Nurse's role	1. Describe about the legal and	To teach and discuss aboutlegal issues (Issues	• Focus group discussion	



		ethical issues in	giving raise to civil		6hrs
	<ul> <li>Legal issues</li> </ul>	critical care	litigation, Related laws in	<ul> <li>Interactive</li> </ul>	
	<ul> <li>Ethical issues</li> </ul>		India, Medical futility,	sessions on	
	Managing Scarce	2. Enumerate the	Administrative law:	managing	
	resource in critical	role of nurse in	Professional	Scarce resource	
	care	ethical and legal	regulation,Tort law:	in critical care	
	50.10	issues	Negligence, professional		
			malpractice, intentional		
			torts, wrongful death,		
			defamation, assault and		
			battery, Constitutional		
			Law: Patient decision		
			making ) Ethical issues		
			(Difference between		
			morals and ethics, Ethical		
			principles, ethical decision		
			making in critical care,		
			Strategies for promoting		
			ethical decision		
			Making, Ethical issues		
			relevant to critical care,		
			withholding and		
			withdrawing treatment),		
			Managing Scarce resource		
			in critical care(Brain		
			death, Organ donation &		
			Counseling, Do Not		
			Resuscitate(DNR),		
			Euthanasia, Living will)		
10		4.5. "	Nurses' Role		
12	Quality assurance	1. Describe about	To teach and discuss	C 1	
	Design of ICU/CCU	the assurance	about Design of ICU/CCU,	Seminar on	
	assurance models	model related to	assurance models	assurance model	8
	applicable to ICUs	ICUs	applicable to ICUs,	related to ICUs	hrs
	• Standards, Protocols,		Standards, Protocols,		
	Policies, Procedures	<b>2.</b> Appreciate	Policies, Procedures,	Role play	
	<ul> <li>Nursing audit relevant to</li> </ul>	nursing audit	•		
	critical care	relevant to	and protocols, Standard		
	Staffing	critical care	safety measures, Nursing		
			audit relevant to critical		

			care, Staffing		
13	Evidence based practice in	1. Describe the	To teach and discuss		
	critical care nursing	evidence based	about evidence based		3
	Evidence based practice in	practice in critical	practice in critical care,	Interactive	hrs
	critical care	care	Barriers to	sessions on	
	• Barriers to		implementation,	Barriers to	
	implementation	2.Discuss the	Strategies to promote	implementation	
	Strategies to promote	strategies to promote	implementation		
	implementation	implementation		Panel discussion	
				on Evidence	
				based practice in	
				critical care	
14	Class test				5
					hrs

#### References:

- 1. Diepenbrock, N. H. (2008). Quick reference to critical care (3rd ed.). Philadelphia: Lippincott Williams and Wilkins.
- 2. John, G., Subramani, K., Peter, J. V., Pitchamuthu, K., &Chacko, B. (2011). Essentials of critical care (8th ed.). Christian Medical College: Vellore.
- 3. Morton, P. G., & Fontaine, D. K. (2013). Critical Care Nursing: A Ho;istic Approach (9th ed.). Lippincott Williams and Wilkins: Philadelphia
- 4. Perrin, K. O. (2009). Understanding the essentials of critical care nursing. New Jersey: Pearson Education.
- 5. Urden, L. D., Stacy, K. M., & Lough, M. E. (2014). Critical Care Nursing- Diagnosis and management (7th ed.). Elsevier: Missouri

Wyckoff, M., Houghton, D., &Lepage, C. (2009). Critical care. New York: Springer publishing company

## II.Critical care nursing I

#### Subject distribution:

The subject will be for 1 year duration. The topics covered under theory training are as follows

Unit Topic Hours

1.	Introduction	6
	Review of anatomy and physiology of vital organs	
	Review of assessment and monitoring of the critically ill	
2.	Cardiovascular alterations	16
	Review of Clinical assessment, pathophysiology, and pharmacology	
	Special diagnostic studies	
	Cardiovascular conditions requiring critical care management	
	- Heart block and conduction disturbances	
	- Coronary heart disease	
	- Myocardial infarction	
	- Pulmonary hypertension	
	- Valvular heart disease	
	- Atherosclerotic disease of aorta	
	- Peripheral artery disease	
	- Cardiomyopathy	
	- Heart failure	
	- Deep vein thrombosis	
	- Congenital heart disease(cyanotic and acyanotic)	
	Cardiovascular therapeutic management	
	- Cardiac transplant	
	- Pacemakers	
	- Cardioversion	
	- Defibrillation	
	- Implantable cardiovert defibrillators,	
	- Thrombolytic therapy	
	- Radiofrequency catheter ablation	
	- Percutaneous Transluminal Coronary Angioplasty(PTCA)	
	- Cardiac surgery –Coronary artery bypass grafting( CABG)/ Minimally	
	invasive	
	coronary artery surgery)MICAS, Valvular surgery, vascular surgery	
	- Mechanical circulatory assistive devices – Intra aortic balloon pump	
	- Effects of cardiovascular medications	
	- Ventricular assist devices(VAD)	
	- Extra corporeal membrane oxygenation(ECMO)	
	Recent advances and development	
3.	Pulmonary alterations	15
	Review of Clinical assessment, pathophysiology, and pharmacology	
	Special diagnostic studies	
	Pulmonary conditions requiring critical care management	
	- Status asthmaticus	



- Pulmonary edema - Pulmonary embolism - Acute respiratory failure - Acute respiratory distress syndrome - Chest trauma - Chronic obstructive pulmonary disease - Pneumonia - Pleural effusion - Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		Du line a ne anu ca da ne a	
- Acute respiratory failure - Acute respiratory distress syndrome - Chest trauma - Chronic obstructive pulmonary disease - Pneumonia - Pleural effusion - Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		·	
- Acute respiratory distress syndrome - Chest trauma - Chronic obstructive pulmonary disease - Pneumonia - Pleural effusion - Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		·	
- Chest trauma - Chronic obstructive pulmonary disease - Pneumonia - Pleural effusion - Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest			
- Chronic obstructive pulmonary disease - Pneumonia - Pleural effusion - Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		, , ,	
<ul> <li>Pneumonia</li> <li>Pleural effusion</li> <li>Atelectasis</li> <li>Longterm mechanical ventilator dependence</li> <li>Pulmonary therapeutic management</li> <li>Thoracic surgery</li> <li>Lung transplant</li> <li>Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest</li> </ul>			
<ul> <li>- Pleural effusion</li> <li>- Atelectasis</li> <li>- Longterm mechanical ventilator dependence</li> <li>• Pulmonary therapeutic management</li> <li>- Thoracic surgery</li> <li>- Lung transplant</li> <li>- Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest</li> </ul>		·	
- Atelectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest			
<ul> <li>Longterm mechanical ventilator dependence</li> <li>Pulmonary therapeutic management</li> <li>Thoracic surgery</li> <li>Lung transplant</li> <li>Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest</li> </ul>			
<ul> <li>Pulmonary therapeutic management</li> <li>Thoracic surgery</li> <li>Lung transplant</li> <li>Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest</li> </ul>			
- Thoracic surgery - Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest			
- Lung transplant - Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		,	
- Bronchial hygiene: Nebulization, deep breathing and coughing exercise, chest		- Thoracic surgery	
chest		- Lung transplant	
		- Bronchial hygiene: Nebulization, deep breathing and coughing exercise,	
physiotherapy and postural drainage			
		physiotherapy and postural drainage	
- Chest tube insertion and care of patient with chest drainage		- Chest tube insertion and care of patient with chest drainage	
Recent advances and development		Recent advances and development	
4. Neurological alterations 15	4.	Neurological alterations	15
Review of Clinical assessment, pathophysiology, and pharmacology		<ul> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> </ul>	
Special diagnostic studies		Special diagnostic studies	
Neurological conditions requiring critical care management		Neurological conditions requiring critical care management	
- Cerebro vascular disease and cerebro vascular accident		- Cerebro vascular disease and cerebro vascular accident	
- Encephalopathy		- Encephalopathy	
- Gillian Bare syndrome and Myasthenia gravis		- Gillian Bare syndrome and Myasthenia gravis	
- Brain herniation syndrome		- Brain herniation syndrome	
- Seizure disorder		- Seizure disorder	
- Coma, Unconsciousness		- Coma, Unconsciousness	
- persistent vegetative state		- persistent vegetative state	
- Head injury		- Head injury	
- Spinal cord injury		- Spinal cord injury	
- Thermoregulation		- Thermoregulation	
Neurologic therapeutic management		Neurologic therapeutic management	
- Intracranial pressure – Assessment and management of intracranial			
hypertension			
- Craniotomy		- Intracranial pressure – Assessment and management of intracranial	
Recent advances and development		- Intracranial pressure – Assessment and management of intracranial hypertension	
5. Nephrology alterations 15		<ul> <li>Intracranial pressure – Assessment and management of intracranial hypertension</li> <li>Craniotomy</li> </ul>	
Review of Clinical assessment, patho-physiology, and pharmacology	5.	<ul> <li>Intracranial pressure – Assessment and management of intracranial hypertension</li> <li>Craniotomy</li> <li>Recent advances and development</li> </ul>	15
Special diagnostic studies	5.	<ul> <li>Intracranial pressure – Assessment and management of intracranial hypertension</li> <li>Craniotomy</li> <li>Recent advances and development</li> <li>Nephrology alterations</li> </ul>	15



	Gastrointestinal therapeutic management     Gastrointestinal supportes	
	- Gastrointestinal surgeries - Liver transplant	
	Recent advances and development	
<u> </u>	·	42
7.	Endocrine alterations	12
	Review of Clinical assessment, pathophysiology, and pharmacology	
	Special diagnostic studies	
	Endocrineconditions requiring critical care management	
	- Neuroendocrinology of stress and critical illness	
	- Diabetic ketoacidosis, Hyperosmolar non ketotic coma	
	- hypoglycemia	
	- Thyroid storm	
	- Myxedema coma	
	- Adrenal crisis	
	- SIADH	
	Endocrine therapeutic management	
1		1
	Recent advances and development	
8.	Recent advances and development  Class tests	5

#### References

- 1. Barkers, A.M. (2009). Advanced Practice Nursing. Massachussets: Jones & Bartlett Publisher.
- 2. Hickey, J. V., Ouimette, R. M., &Venegoni, S. L. (1996). Advanced practice nursing: Changing roles and clinical applications. Philadelphia: Lippincott Williams and Wilkins.
- 3. Schober, M., &Affara, F. A. (2006). Advanced nursing practice. Oxford: Blackwell publishing.
- 4. Stewart, G.J., & Denisco, S.M. (2015). Role Development for the Nurse Practitioner. USA: Springer Publishing Company

### **II.Critical Care Nursing I**

Placement: Nurse Practitioner in Critical Care IInd year

Hours of Instruction Theory 96 hours Practical 48 hours Total 144 hours

S.	TOPIC	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
No					
1	<ul> <li>Introduction</li> <li>Review of anatomy and physiology of vital organs</li> <li>Review of assessment and monitoring of the critically ill</li> </ul>	Essential to perform			Develops understanding in assessment and monitoring of critical ill patients
2	Cardiovascular alterations	Good to	Develop	Provides nursing	Appreciates
	<ul> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> <li>Special diagnostic studies</li> <li>Cardiovascular conditions requiring critical care</li> </ul>	know  Essential to perform	knowledge in Clinical assessment, pathophysiolog y, and pharmacology	care to 5 patients related to health protection, disease prevention,	recent advancement and development

management	of	anticipatory	
- Heart block and conduction	cardiovascular	guidance,	
disturbances	conditions	counselling and	
- Coronary heart disease		management of	
- Myocardial infarction		cardiovascular	
- Pulmonary hypertension		conditions	
- Valvular heart disease			
- Atherosclerotic disease of		Uses invasive	
aorta		and noninvasive	
- Peripheral artery disease		technology and	
- Cardiomypathy		interventions to	
- Heart failure		assess, monitor	
- Deep vein thrombosis		patients with	
- Congenital heart		cardiovascular	
disease(cyanotic and acyanotic)		disorders	
<ul> <li>Cardiovascular therapeutic</li> </ul>			
management			
- Cardiac transplant			
- Pacemakers			
- Cardioversion			
- Defibrillation			
- Implantable cardiovert			
defibrillators,			
- Thrombolytic therapy			
- Radiofrequency catheter			
ablation			
- Percutaneous Transluminal			
Coronary Angioplasty(PTCA)			
- Cardiac surgery –Coronary			
artery bypass grafting( CABG)/			
Minimally invasive			
coronary artery surgery)MICAS,			
Valvular surgery, vascular			
surgery			
- Mechanical circulatory			
assistive devices – Intra aortic			
balloon pump			
- Effects of cardiovascular			
medications			
- Ventricular assist			

		Ī		T		,
	devices(VAD)					
	- Extra corporeal membrane					
	oxygenation(ECMO)					
	• Recent advances and					
	development					
3	Pulmonary alterations	Good	to	Develop	Provides nursing	Appreciates
	• Review of Clinical	know		knowledge in	care to 5	recent
	assessment, pathophysiology,			Clinical	patients related	advancement
	and pharmacology	Essential	to	assessment,	to health	and
	<ul> <li>Special diagnostic studies</li> </ul>	perform		pathophysiolog	protection,	development
	• Pulmonary conditions			y, and	disease	
	requiring critical care			pharmacology	prevention,	
	management			of pulmonary	anticipatory	
	- Status asthmaticus			conditions	guidance,	
	- Pulmonary edema				counselling and	
	- Pulmonary embolism				management of	
	- Acute respiratory failure				pulmonary	
	- Acute respiratory distress				conditions	
	syndrome					
	- Chest trauma				Uses invasive	
	- Chronic obstructive				and non invasive	
	pulmonary disease				technology and	
	- Pneumonia				interventions to	
	- Pleural effusion				assess, monitor	
	- Atelectasis				patients with	
	- Long term mechanical				pulmonary	
	ventilator dependence				alterations	
	Pulmonary therapeutic					
	management					
	- Thoracic surgery					
	- Lung transplant					
	- Bronchial hygiene:					
	Nebulization, deep breathing					
	and coughing exercise, chest					
	physiotherapy and postural					
	drainage					
	- Chest tube insertion and care					
	of patient with chest drainage					
	Recent advances and					
	development					

			1			
4	Neurological alterations	Good	to	Develop	Provides nursing	Appreciates
	Review of Clinical	know		knowledge in	care to 5	recent
	assessment, pathophysiology,			Clinical	patients related	advancement
	and pharmacology	Essential	to	assessment,	to health	and
	<ul> <li>Special diagnostic studies</li> </ul>	perform		pathophysiolog	protection,	development
	<ul> <li>Neurological conditions</li> </ul>			y, and	disease	
	requiring critical care			pharmacology	prevention,	
	management			of neurological	anticipatory	
	- Cerebro vascular disease and			conditions	guidance,	
	cerebro vascular accident				counselling and	
	- Encephalopathy				management of	
	- Gillian Bare syndrome and				neurological	
	Myasthenia gravis				conditions	
	- Brain herniation syndrome					
	- Seizure disorder				Uses invasive	
	- Coma, Unconsciousness				and non invasive	
	- persistent vegetative state				technology and	
	- Head injury				interventions to	
	- Spinal cord injury				assess, monitor	
	- Thermoregulation				patients with	
	<ul> <li>Neurologic therapeutic</li> </ul>				neurological	
	management				disorders	
	- Intracranial pressure –					
	Assessment and management					
	of intracranial hypertension					
	- Craniotomy					
	<ul> <li>Recent advances and</li> </ul>					
	development					
5	Nephrology alterations			Develop	Provides nursing	Appreciates
	• Review of Clinical	Good	to	knowledge in	care to 5	recent
	assessment, patho-physiology,	know		Clinical	patients related	advancement
	and pharmacology			assessment,	to health	and
	Special diagnostic studies	Essential	to	pathophysiolog	protection,	development
	<ul> <li>Nephrology conditions</li> </ul>	perform	-	y, and	disease	
	requiring critical care	1		pharmacology	prevention,	
	management			of nephrological	anticipatory	
	- Acute renal failure			conditions	guidance,	
	- Chronic renal failure				counselling and	
	- Acute tubular necrosis				management of	
	- Bladder trauma				nephrological	
<u> </u>	2.556001 01001110					

	<ul> <li>Nephrology therapeutic management</li> <li>Renal Replacement therapy: Dialysis</li> <li>Renal transplant</li> <li>Recent advances and development</li> </ul>				conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with nephrological disorders	
6	<ul> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> <li>Special diagnostic studies</li> <li>Gastrointestinalconditions requiring critical care management</li> <li>Acute GI bleeding</li> <li>Hepatic failure</li> <li>Acute pancreatitis</li> <li>Abdominal injury</li> <li>Hepatic encephalopathy</li> <li>Acute intestinal obstruction</li> <li>Perforative peritonitis</li> <li>Gastrointestinal therapeutic management</li> <li>Gastrointestinal surgeries</li> <li>Liver transplant</li> <li>Recent advances and development</li> </ul>	Good know Essential perform	to	Develop knowledge in Clinical assessment, pathophysiolog y, and pharmacology of gastrointestinal conditions	Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of Gastrointestinal conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with gastrointestinal disorders	Appreciates recent advancement and development
7	<ul> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> <li>Special diagnostic studies</li> <li>Endocrineconditions requiring critical care management</li> </ul>	Good know Essential perform	to	Develop knowledge in Clinical assessment, pathophysiolog y, and pharmacology of Endocrine	Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory	Appreciates recent advancement and development

<ul> <li>Neuroendocrinology of stress and critical illness</li> <li>Diabetic ketoacidosis, Hyperosmolar non ketotic coma</li> <li>hypoglycemia</li> <li>Thyroid storm</li> <li>Myxedema coma</li> <li>Adrenal crisis</li> <li>SIADH</li> <li>Endocrine therapeutic management</li> <li>Recent advances and development</li> </ul>	alterations	guidance, counselling and management of Endocrine alterations  Uses invasive and non invasive technology and interventions to assess, monitor patients with Endocrine alterations	

### **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching
- Annotated references from journals

### Assessment techniques for practical

- Sessional Examination = Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

# **II.Critical Care Nursing I**

Placement: Nurse Practitioner IInd Year

### **Hours of Instruction**

Theory: 96 Hours Practical: 48 Hours Total: 144 Hours

S. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	<ul> <li>Introduction</li> <li>Review of anatomy and physiology of vital organs</li> <li>Review of assessment and monitoring of the critically ill</li> </ul>	Describe the anatomy and physiology of vital organs and assessment of critical ill patients.	To teach and discuss about anatomy and physiology of vital organs and assessment of critical ill patients.	Interactive session with the students regarding anatomy and physiology of vital organs	6 hrs

2	Cardiovascular alterations	Summarize various	To teach and	Interactive session	16
-	Review of Clinical	cardiovascular	discuss about	with students	hrs
	assessment, patho-physiology,	problems and its	various	regarding	1.1.5
	and pharmacology	clinical	cardiovascular	cardiovascular	
	Special diagnostic studies	assessment,	problems and	problems	
	<ul> <li>Cardiovascular conditions</li> </ul>	pathophysiology,	its clinical	problems	
	requiring critical care	diagnostic studies,	assessment,	Simulation	
	management	management and	pathophysiolog	technique	
	- Heart block and conduction	role of nurse		technique	
	disturbances	Tole of fluise	y, diagnostic studies and its	Spot group	
	- Coronary heart disease		management	Spot group discussion	
	- Myocardial infarction		management	uiscussion	
	- Pulmonary hypertension				
	- Valvular heart disease				
	- Atherosclerotic disease of				
	aorta				
	- Peripheral artery disease				
	- Cardiomypathy				
	- Heart failure				
	- Deep vein thrombosis				
	- Congenital heart				
	disease(cyanotic and				
	acyanotic)				
	<ul> <li>Cardiovascular therapeutic</li> </ul>				
	management				
	- Cardiac transplant				
	- Pacemakers				
	- Cardioversion				
	- Defibrillation				
	- Implantable cardiovert				
	defibrillators,				
	- Thrombolytic therapy				
	- Radiofrequency catheter				
	ablation				
	- Percutaneous Transluminal				
	Coronary Angioplasty(PTCA)				
	- Cardiac surgery –Coronary				
	artery bypass grafting( CABG)/				
	Minimally invasive				
	coronary artery				

surgery)MICAS, Valvular surgery, vascular surgery - Mechanical circulatory assistive devices – Intra aortic balloon pump - Effects of cardiovascular medications - Ventricular assist devices(VAD) - Extra corporeal membrane oxygenation(ECMO) • Recent advances and development				
<ul> <li>Pulmonary alterations</li> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> <li>Special diagnostic studies</li> <li>Pulmonary conditions requiring critical care management</li> <li>Status asthmaticus</li> <li>Pulmonary edema</li> <li>Pulmonary embolism</li> <li>Acute respiratory failure</li> <li>Acute respiratory distress syndrome</li> <li>Chest trauma</li> <li>Chronic obstructive pulmonary disease</li> <li>Pneumonia</li> <li>Pleural effusion</li> <li>Atlectasis</li> <li>Longterm mechanical ventilator dependence</li> <li>Pulmonary therapeutic management</li> <li>Thoracic surgery</li> </ul>	Review various pulmonary alterations and its clinical assessment, pathophysiology, diagnostic studies, management and role of nurse	To teach and discuss about various pulmonary alterations and its clinical assessment, pathophysiolog y, diagnostic studies and its management	Student seminar on pulmonary alterations  Simulation technique  Spot group discussion	15 hrs

					,
	- Lung transplant				
	- Bronchial hygiene:				
	Nebulization, deep breathing				
	and coughing exercise, chest				
	physiotherapy and postural				
	drainage				
	- Chest tube insertion and care				
	of patient with chest drainage				
	Recent advances and				
	development				
4	Neurological alterations	Summarize various	To teach and	Seminar on	15
	Review of Clinical	Neurological	discuss about	neurological	hrs
	assessment, pathophysiology,	alterations and its	various	conditions in	
	and pharmacology	clinical	Neurological	critical care	
	Special diagnostic studies	assessment,	alterations and		
	Neurological conditions	pathophysiology,	its clinical	Interactive	
	requiring critical care	diagnostic studies,	assessment,	sessions	
	management	management and	pathophysiolog		
	- Cerebro vascular disease and	role of nurse	y, diagnostic	Spot group	
	cerebro vascular accident		studies and its	discussions	
	- Encephalopathy		management		
	- Gillian Bare syndrome and		J		
	Myasthenia gravis				
	- Brain herniation syndrome				
	- Seizure disorder				
	- Coma, Unconsciousness				
	- persistent vegetative state				
	- Head injury				
	- Spinal cord injury				
	- Thermoregulation				
	Neurologic therapeutic				
	management				
	- Intracranial pressure –				
	Assessment and management				
	of intracranial hypertension				
	- Craniotomy				
	Recent advances and				
	development				
5	Nephrology alterations	Explain about	To teach and		15
	• Review of Clinical	various	discuss about	Simulated learning	hrs
			l .		

	assessment, pathophysiology,	Nephrology	various	on Nephrology	
	and pharmacology	alterations and its	Nephrology	alterations.	
	Special diagnostic studies	clinical	alterations and		
	<ul> <li>Nephrology conditions</li> </ul>	assessment,	its clinical	Seminar on	
	requiring critical care	pathophysiology,	assessment,	nephrology	
	management	diagnostic studies,	pathophysiolog	conditions	
	- Acute renal failure	management and	y, diagnostic	requiring critical	
	- Chronic renal failure	role of nurse	studies and its	care	
	- Acute tubular necrosis		management		
	- Bladder trauma				
	Nephrology therapeutic				
	management				
	- Renal Replacement therapy:				
	Dialysis				
	- Renal transplant				
	Recent advances and				
	development				
6	Gastrointestinal alterations	Review various	To teach and	Spot group	12
	Review of Clinical	Gastrointestinal	discuss about	discussion on	hrs
	assessment, pathophysiology,	alterations and its	various	gastrointestinal	5
	and pharmacology	clinical	Gastrointestinal	alterations	
	Special diagnostic studies	assessment,	alterations and	arterations	
	<ul> <li>Gastrointestinal conditions</li> </ul>	pathophysiology,	its clinical		
	requiring critical care	diagnostic studies,	assessment,	Student seminar	
	management	management and	pathophysiolog	on staucht semman	
	- Acute GI bleeding	role of nurse	y, diagnostic	Gastrointestinal	
	- Hepatic failure	Total of marse	studies and its	problems	
	- Acute pancreatitis		management	problems	
	- Abdominal injury		management		
	- Hepatic encephalopathy				
	- Acute intestinal obstruction				
	- Perforative peritonitis				
	Gastrointestinal therapeutic				
	management				
	- Gastrointestinal surgeries				
	- Liver transplant				
	•				
	development				

7	Endocrine alterations	Elaborate various	To teach and	Seminar on	12
	•Review of Clinical	Endocrine	discuss about	endocrine	hrs
	assessment, pathophysiology,	alterations and its	various	alterations	
	and pharmacology	clinical	endocrine		
	Special diagnostic studies	assessment,	alterations and	Fish bowl	
	<ul> <li>Endocrineconditions</li> </ul>	pathophysiology,	its clinical	technique	
	requiring critical care	diagnostic studies,	assessment,		
	management	management and	pathophysiolog		
	- Neuroendocrinology of stress	role of nurse	y, diagnostic		
	and critical illness		studies and its		
	- Diabetic ketoacidosis,		management		
	Hyperosmolar non ketotic				
	coma				
	- hypoglycemia				
	- Thyroid storm				
	- Myxedema coma				
	- Adrenal crisis				
	- SIADH				
	Endocrine therapeutic				
	management				
	Recent advances and				
	development				
8	Class tests				5 hrs

### **III. CRITICAL CARE NURSING -II**

# **Subject distribution:**

The subject will be for 1 year duration. The topics covered under theory training are as follows

S. No	CONTENT OF TOPICS	TIME
6.	Hematological alterations	
	<ul> <li>Review of Clinical assessment, pathophysiology, and pharmacology</li> </ul>	12 hrs
	Special diagnostic studies	
	Hematology conditions requiring critical care management	
	Hematology therapeutic management	
	Recent advances and development	
7.	Skin alterations	
	<ul> <li>Review of Clinicalassessment, pathophysiology, and pharmacology</li> </ul>	8 hrs
	Special diagnostic studies	
	Conditions requiring critical care management	

	Therapeutic management	
	Recent advances and development	
8.	Multi system alterations requiring critical care	
	• Trauma	12 hrs
	• Sepsis	
	• Shock	
	Multiple Organ Dysfunction	
	Systemic inflammatory response syndrome	
	Anaphylaxis	
	• DIC	
	Other injuries ( Heat, Electrical, Near Hanging, Near drowning)	
	Envenomation	
	Drug overdose	
	Poisoning	
9.	Specific infections in critical care	10 hrs
	• HIV	
	• Tetanus	
	• SARS	
	Rickettsiosis	
	• Leptospirosis	
	• Dengue	
	Malaria	
	Chikungunya	
	• Rabies	
	Avian flu	
	Swine flu	
10.	Critical care in Obstetrics	
	Physiological changes in pregnancy	9 hrs
	Conditions requiring critical care	
11.	Critical care in children	
	<ul> <li>Prominent anatomical and physiological differences and implications</li> </ul>	10 hrs
	Conditions requiring critical care	
	Selected pediatric challenges	
	Interaction with children and families	
12.	Critical Care in Older Adult	
	Normal psycho biological characteristics of aging	10 hrs
	Physical challenges	



	Challenges in medication use	
	Hospital associated risk factors for older adults	
	Long term complications of critical car	
13.	Critical Care in Peri anesthetic period	10 hrs
	Selection of anesthesia	
	General anesthesia	
	Anesthetic agents	
	Peri anesthesia assessment and care	
	Post anesthesia problems	
14.	Other special situations in critical care	10
	Rapid response teams and transport of the critically ill	
	Disaster management	
	Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment	
	• ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute	
	allergic conditions	
	Psychiatric emergencies – Suicide, crisis intervention	
15.	Class Test	5 hrs

## **Bibliography:**

- 1. Diepenbrock, N. H. (2008). Quick reference to critical care (3rd ed.). Philadelphia: Lippincott Williams and Wilkins.
- 2. John, G., Subramani, K., Peter, J. V., Pitchamuthu, K., &Chacko, B. (2011). Essentials of critical care (8th ed.). Christian Medical College: Vellore.
- 3. Morton, P. G., & Fontaine, D. K. (2013). Critical Care Nursing: A Ho;istic Approach (9th ed.). Lippincott Williams and Wilkins: Philadelphia
- 4. Perrin, K. O. (2009). Understanding the essentials of critical care nursing. New Jersey: Pearson Education.
- 5. Urden, L. D., Stacy, K. M., & Lough, M. E. (2014). Critical Care Nursing- Diagnosis and management (7th ed.). Elsevier: Missouri
- 6. Wyckoff, M., Houghton, D., &Lepage, C. (2009).Critical care. New York: Springer publishing company.

**Critical Care Nursing - II** 

Placement: Nurse Practitioner in Critical Care Post Graduate Residency Program

### **Hours of Instruction**

Theory: 96 hours, Practical: 48 hours

S. No CONTENT OF TOPICS   DOMAIN   COGNITIVE   PSYCHOMOTOR   AFFECTIVE    Hematological alterations   Review of Clinical assessment, pathophysiology, and pharmacology   Special diagnostic studies   Hematology conditions requiring critical care management   Hematology therapeutic management   Recent advances and development   Recent advances and development   Skin alterations   Review of Clinicalassessment, pathophysiology, and pharmacology   Special diagnostic studies   Review of Clinicalassessment, pathophysiology, and pharmacology   Special diagnostic studies   Review of Clinicalassessment, pathophysiology, and pharmacology   Special diagnostic studies   Review of Clinicalassessment, pathophysiology, and pharmacology   Special diagnostic studies   Review of Clinicalassessment, pathophysiology, and pharmacology   Review of Clinical assessment, pathophysiology, and pharmacology   Review of Clinica		Practical: 48 hours				
Review of Clinical assessment, pathophysiology, and pharmacology  Special diagnostic studies Hematology conditions requiring critical care management Hematology therapeutic management Recent advances and development  Recent advances and development  Recent advances and development  Skin alterations Review of Clinical assessment, pathophysiology, and pharmacology  Review of Clinical assessment, pathophysiology, and pharmacology  Special diagnostic studies  Hematology conditions  Essential to pathophysiology, and pharmacology  perform  Perform  Sessential to pathophysiology, and pharmacology  Perform  Sessential to pathophysiology, and pharmacology  Perform  Sessential to pathophysiology, and pharmacology  Special diagnostic studies  Rood to know assessment, pathophysiology, and pharmacology  Special diagnostic studies  Rood to pathophysiology, and conditions  Rood to pathophysiology, pathophysi	S. No	CONTENT OF TOPICS	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
assessment, pathophysiology, and pharmacology • Special diagnostic studies • Hematology conditions requiring critical care management • Hematology therapeutic management • Recent advances and development  • Recent advances and development  2 Skin alterations • Review of Clinicalassessment, pathophysiology, and pharmacology • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies  Clinical assessment, to health protection, disease prevention, and management and development  Clinical assessment, pathophysiology, and pharmacology  pathophysiology, and pharmacology of haematological conditions  Clinical assessment, pathophysiology, and pharmacology  Develops knowledge in Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies  Clinical assessment, pathophysiology, pathophysiology, pathophysiology, on the pathophysiology, pathophysiol	1	Hematological alterations	Good to	Develop	Provides nursing	Appreciates
pathophysiology, and pharmacology  • Special diagnostic studies  • Hematology conditions requiring critical care management  • Hematology therapeutic management  • Recent advances and development		• Review of Clinical	know	knowledge in	care to 5	recent
pharmacology Special diagnostic studies Hematology conditions requiring critical care management Hematology therapeutic management Recent advances and development  Recent advances and development  Special diagnostic studies  Recent advances and development  Special diagnostic studies  Recent advances and development  Special diagnostic studies  Recent advances and development  Develops Review of Clinicalassessment, pathophysiology, and pharmacology Special diagnostic studies  Assessment, pathophysiology, and pharmacology Special diagnostic studies  Special diagnostic studies  Assessment, pathophysiology, protection, disease prevention, anticipatory guidance, counselling and management of haematological conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation Provides nursing care to 5 patients related to health and development				Clinical	•	advancement
Special diagnostic studies Hematology conditions requiring critical care management Hematology therapeutic management Recent advances and development  Skin alterations Review of Clinicalassessment, pathophysiology, and pharmacology Special diagnostic studies  Special diagnostic studies  Perform pharmacology of pharmacology of haematological conditions  Misease prevention, anticipatory guidance, counselling and management of haematological conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 recent advancement and patients related and patients related to health protection, development		pathophysiology, and	Essential	assessment,	to health	and
Hematology conditions requiring critical care management     Hematology therapeutic management     Recent advances and development      Skin alterations     Review of Clinicalassessment, pathophysiology, and pharmacology     Special diagnostic studies     Pharmacology of haematological conditions     pharmacology of haematological conditions     Develops know knowledge in Clinical assessment, pathophysiology, and development      pharmacology of haematological conditions     Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 patients related to health protection, development		, 3,	to	pathophysiology,	protection,	development
requiring critical care management  Hematology therapeutic management  Recent advances and development  Uses invasive and interventions to assess, monitor patients with haematological conditions  Skin alterations  Review of Clinicalassessment, pathophysiology, especial diagnostic studies  Requiring critical care management of haematological conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 patients related to health protection, development		<ul> <li>Special diagnostic studies</li> </ul>	perform	and	disease	
management  Hematology therapeutic management  Recent advances and development  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Skin alterations  Review of Clinicalassessment, pathophysiology, and pharmacology  Special diagnostic studies  Conditions  Good to Develops know knowledge in Clinical assessment, pathophysiology, and pharmacology  Special diagnostic studies  Conditions  guidance, counselling and management of haematological conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 patients related advancement and development		· ·		•	prevention,	
Hematology therapeutic management     Recent advances and development      Wes invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions      Skin alterations     Review of Clinicalassessment, pathophysiology, and pharmacology     Special diagnostic studies      Recent advances and development      Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions      Assists in bone marrow transplantation     Review of Clinicalassessment, pathophysiology, and pharmacology     Special diagnostic studies      Review of Clinicalassessment, pathophysiology, and pharmacology     Special diagnostic studies      Review of Clinicalassessment, pathophysiology, and pharmacology     Special diagnostic studies      To use invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 patients related to health protection, development		requiring critical care			anticipatory	
management  Recent advances and development  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Skin alterations  Review of Clinicalassessment, pathophysiology, and pharmacology  Special diagnostic studies  management of haematological conditions  Uses invasive and non invasive technology and interventions to assess, monitor patients with haematological conditions  Assists in bone marrow transplantation  Provides nursing care to 5 patients related to health protection, pathophysiology, potection, pathophysiology, potection, pathophysiology, potection, pathophysiology, potection, development		management		conditions	guidance,	
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Assists in bone marrow transplantation  2 Skin alterations • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies  • Review of Clinical sessment, pathophysiology, and pharmacology • Special diagnostic studies  • Assists in bone marrow transplantation  Provides nursing care to 5 recent advancement advancement to health and development					haematological	
2 Skin alterations • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies  • Review of Clinical pathophysiology, and pharmacology • Special diagnostic studies  • Review of Clinical patients related advancement assessment, pathophysiology, protection, development					conditions	
2 Skin alterations • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies  • Review of Clinical pathophysiology, and pharmacology • Special diagnostic studies  • Review of Clinical patients related advancement assessment, pathophysiology, protection, development						
Skin alterations  • Review of Clinicalassessment, pathophysiology, and pharmacology  • Special diagnostic studies  • Special diagnostic studies  Skin alterations  Good to Develops know knowledge in care to 5 Clinical patients related advancement to health and to pathophysiology, protection, development					Assists in bone	
2 Skin alterations • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies  Good to Develops know knowledge in care to 5 recent advancement assessment, to health pathophysiology, protection, development						
<ul> <li>Review of Clinicalassessment, pathophysiology, and pharmacology</li> <li>Special diagnostic studies</li> <li>know</li> <li>knowledge in Care to 5 patients related advancement to health pathophysiology, protection,</li> <li>pathophysiology, protection,</li> </ul>					•	
pathophysiology, and pharmacology Essential assessment, pathophysiology, to pathophysiology, protection, development	2				_	• •
pharmacology Essential assessment, to health and evelopment to pathophysiology,		•	know	_		
• Special diagnostic studies to pathophysiology, protection, development					·	
		,	Essential	•		
• Conditions requiring critical perform and disease					'	development
		<ul> <li>Conditions requiring critical</li> </ul>	perform	and	disease	
care management pharmacology of prevention,		care management		pharmacology of	prevention,	

Therapeutic management     Recent advances and development		skin alterations	anticipatory guidance, counselling and management of skin alterations  Uses invasive and non invasive technology and interventions to assess, monitor patients with skin alterations
3 Multi system alterations requiring critical care	Essential to		Provides nursing care to 5
• Trauma	perform		patients related
• Sepsis	Perionii		to health
• Shock			protection,
Multiple Organ Dysfunction			disease
Systemic inflammatory			prevention,
response syndrome			anticipatory
Anaphylaxis			guidance,
• DIC			counselling and
• Other injuries ( Heat,			management of
Electrical, Near Hanging, Near			Multi system
drowning)			alterations
• Envenomation			
Drug overdose     Drigging			
Poisoning			

4	Specific infections in critical care  • HIV  • Tetanus  • SARS  • Rickettsiosis  • Leptospirosis  • Dengue  • Malaria  • Chikungunya  • Rabies  • Avian flu  • Swine flu	Essential to perform		Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of Specific infections in critical care	
5	Critical care in Obstetrics  • Physiological changes in pregnancy  • Conditions requiring critical care	Good to know	Draws partograph		Develops understandi ng of Physiological changes in pregnancy
6	<ul> <li>Critical care in children</li> <li>Prominent anatomical and physiological differences and implications</li> <li>Conditions requiring critical care</li> <li>Selected pediatric challenges</li> <li>Interaction with children and families</li> </ul>	Essential to perform		Demonstrates skill in handling equipments such as incubators and warmers	
7	<ul> <li>Critical Care in Older Adult</li> <li>Normal psycho biological characteristics of aging</li> <li>Physical challenges</li> <li>Challenges in medication use</li> <li>Hospital associated risk factors for older adults</li> <li>Long term complications of critical care</li> </ul>	Good to know	Identifies long term complications of critical care		Develops understandi ng in physical challenges and challenges in medication use of older

8 Critical Care in Peri anesthetic period  • Selection of anesthesia • General anesthesia • Anesthetic agents • Peri anesthesia assessment and care • Post anesthesia problems  9 Other special situations in critical care • Rapid response teams and transport of the critically ill • Disaster management • Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment • ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions • Psychiatric emergencies –				adults
Demonstrates skill in titration of drugs  9 Other special situations in critical care  • Rapid response teams and transport of the critically ill  • Disaster management  • Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment  • ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions  Demonstrates skill in titration of drugs  Demonstrates skill in disaster management  Manages ENT  emergencies and psychiatric emergencies	<ul> <li>period</li> <li>Selection of anesthesia</li> <li>General anesthesia</li> <li>Anesthetic agents</li> <li>Peri anesthesia assessment</li> </ul>	to	patients under anesthesia Assists with planned	
critical care  Rapid response teams and transport of the critically ill  Disaster management  Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment  ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions  to perform  Skill in disaster management  Manages ENT emergencies and psychiatric emergencies emergencies	Post anesthesia problems		skill in titration	
<ul> <li>Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment</li> <li>ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions</li> </ul> Desirable to and psychiatric emergencies <ul> <li>perform</li> </ul>	<ul><li>critical care</li><li>Rapid response teams and</li></ul>	to	skill in disaster	
Suicide, crisis intervention	<ul> <li>Ophthalmic emergencies –</li> <li>Eye injuries, glaucoma, retinal detachment</li> <li>ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions</li> <li>Psychiatric emergencies –</li> </ul>	to	emergencies and psychiatric	

# **Assessment techniques for Theory**

- Monthly teat (objective type)
- Sessional Examination Objective structured clinical examination (OSCE)
- Pre University Examination (OSCE)
- Assignment
- Project work
- Practice teaching
- Annotated references from journals

# Assessment techniques for practical

- Sessional Examination =Objective structured practical examination (OSPE)
- Pre University Examination (OSPE)
- Clinical conference
- Nursing Rounds
- Clinical assignments
- Clinical evaluation

# **Critical Care Nursing - II**

**Placement:** Nurse Practitioner in Critical Care Post Graduate Residency Program

#### **Hours of Instruction**

Theory: 96 hours, Practical: 48 hours

s. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	Hematological alterations  Review of Clinical assessment, pathophysiolo gy, and pharmacology  Special diagnostic studies Hematology conditions requiring critical care management Hematology therapeutic management Recent advances and development	<ul> <li>Describe the special diagnostic studies in hematological alterations.</li> <li>Elaborate Hematology conditions requiring critical care management</li> <li>DescribeHematol ogy therapeutic management.</li> <li>Appreciate recent advances and developmentinhe matological alterations.</li> </ul>	To teach and discuss on Clinical assessment, pathophysiology, and pharmacology of hematologic alterations, Special diagnostic studies, Hematology conditions requiring critical care management such as DIC, Thrombocytopenia, Heparin induced thrombocytopenia, Sickle cell anemia, Tumor lysis syndrome, Anemia in critical illness. Hematology therapeutic management such as Autologus blood	-Interactive session with the student'sClinical assessment, pathophysiology, and pharmacology of hematologic alterations.  -Focus group discussion onSpecial diagnostic studies.  -Teachers seminar on Hematology conditions requiring critical care management	12 hrs

2	Skin alterations  Review of Clinicalassessment, pathophysiology, and pharmacology Special diagnostic studies Conditions requiring critical care management Therapeutic management Recent advances and development	<ul> <li>Discuss on Review of Clinical assessment, pathophysiology, and pharmacology of skin alterations.</li> <li>Describe the special diagnostic studies in skin alterations</li> <li>Summarize the conditions requiring critical care management.</li> <li>Review the conditions requiring therapeutic management.</li> <li>Appreciate recent advances and development in the field of skin.</li> </ul>	transfusion, bone marrow transplantation. Recent advances and development.  To teach and discuss about review of Clinical assessment, pathophysiology, and pharmacology, Special diagnostic studies, Conditions requiring critical care management such as Burns, Wounds. Therapeutic management such as Reconstructive surgeries for burns, Management of wounds. Recent advances and development	Teachers seminar on Conditions requiring critical care management      Interactive session with students Therapeutic management	8 hrs
3	Multi system alterations requiring critical care • Trauma • Sepsis • Shock • Multiple Organ Dysfunction	Summarize the various multisystem alterations requiring critical care	To teach and discuss about Trauma, Sepsis, Shock, Multiple Organ Dysfunction, Systemic inflammatory	-Roleplay on various scenarios and management.  Seminar on multi	12 hrs



	<ul> <li>Systemic inflammatory response syndrome</li> <li>Anaphylaxis</li> <li>DIC</li> </ul>		response syndrome, anaphylaxis, DIC, Other injuries ( Heat, Electrical,	system alterations Interactive sessions	
	<ul> <li>Other injuries (</li> <li>Heat, Electrical, Near</li> <li>Hanging, Near</li> <li>drowning)</li> <li>Envenomation</li> <li>Drug overdose</li> <li>Poisoning</li> </ul>		Near Hanging, Near drowning), Envenomation, Drug overdose, Poisoning		
4	Specific infections in critical care  HIV  Tetanus  SARS  Rickettsiosis  Leptospirosis  Dengue  Malaria  Chikungunya  Rabies  Avian flu  Swine flu	Review specific infections in critical care	To teach and discuss onHIV, Tetanus, SARS, Rickettsiosis, Leptospirosis, Dengue, Malaria, Chikungunya, Rabies, Avian flu, Swine flu	<ul> <li>Role play and video film on various scenarios and their management.</li> <li>Problem based learning.</li> </ul>	10 hrs
5	Critical care in Obstetrics  Physiological changes in pregnancy Conditions requiring critical care	1. Explain the Physiological changes in pregnancy  2. Discuss on the Conditions requiring critical care in obstetric patients.	To teach and discuss about Physiological changes in pregnancy, Conditions requiring critical care such as Antepartum hemorrhage, PIH,	Interactive session on physiological changes in pregnancy.  • Simulated learning	9 hrs



			Obstructed labor, Ruptured uterus, PPH, Puperal sepsis, Obstetrical shock, HELLP syndrome, DIC, Amniotic fluid embolism, ARDS, Trauma		
differimplic  Concritica  Se challe	Prominent Prominent Omical and Ological Pences and Cations Inditions requiring Pal care Plected pediatric	<ol> <li>Elaborate the conditions requiring critical care in children.</li> <li>Summarize the various management options available for children in critical care.</li> <li>Demonstrate communication with children.</li> </ol>	To teach and discuss about prominent anatomical and physiological differences and implications, Conditions requiring critical care such as Asphyxia neonatarum, Metabolic disorders, Intracranial hemorrhage, Neonatal sepsis, Dehydration, ARDS, Poisoning, Foreign bodies, Seizures, Status asthmaticus, Cyanotic heart disease, congenital hypertrophic pyloric stenosis, Tracheoesophageal fistula, imperforate anus, Acute bronchopneumonia , Trauma in	<ul> <li>Focus group discussio n</li> <li>Simulated learning</li> <li>Role play and video film on various scenarios and their management.</li> <li>Problem based learning.</li> </ul>	10 hrs

			children. Selected pediatric challenges		
			such as Ventilatory		
			issue, medication		
			administration,		
			Pain Management.		
			Interaction with		
			children and		
			families		
7	Critical Care in Older				
	Adult	1. Summarize the	To teach and	Interactive	10 hrs
	<ul> <li>Normal psycho</li> </ul>	normal psycho	discuss about	sessions on	
	biological	biological changes in	Normal psycho	normal	
	characteristics of	older adults	biological	psycho	
	aging	2. Elaborate the	characteristics of	biological	
	<ul> <li>Physical challenges</li> </ul>	common health	aging such as	changes in	
	• Challenges in	problems in older	Biological issues,	older adults.	
	medication use	adults.	Psychological		
	<ul> <li>Hospital associated</li> </ul>	3. Discuss the	issues, Concepts	<ul> <li>Simulated</li> </ul>	
	risk factors for older	challenges in	and theories of	learning	
	adults	medications of older	ageing, Stress &		
	• Long term	adult.	coping in older	<ul> <li>Role play and</li> </ul>	
	complications of	4. Explain about	adults, Common	video film on	
	critical care	palliative care.	Health Problems &	various	
			Nursing	scenarios and	
			Management.	their	
			Physical challenges	management.	
			such as Auditory	5 11	
			changes, Visual	• Problem	
			changes, Other	based	
			sensory changes,	learning.	
			Skin changes,		
			Cardiovascular		
			changes,		
			Respiratory changes, Renal		
			changes, Gastro		
			intestinal changes,		
			Musculoskeletal		
			changes, Endocrine		
			changes, Endocrine		

				Τ.		1	1
				changes,			
				Immunological			
				changes,			
				Psychological			
				challenges,			
				Cognitive changes,			
				Abuse of the older			
				person, Alcohol			
				abuse. Challenges			
				in medication use			
				such as Drug			
				absorption, Drug			
				distribution, Drug			
				metabolism, Drug			
				excretion, Hospital			
				associated risk			
				factors for older			
				adults, Long term			
				complications of			
				critical care, Care			
				transitions,			
				Palliative care and			
				end of life in critical			
				care			
8	Critical Care in Peri	1.	Enlist the selection	To each and discuss	•	Spot	10 hrs
	anesthetic period		criteria for	onCritical Care in		group	
	<ul> <li>Selection of</li> </ul>		anesthesia	Peri anesthetic		discussio	
	anesthesia	2.	Enlist the types of	period, Selection of		n on peri	
	<ul> <li>General anesthesia</li> </ul>		anesthesia and	anesthesia, General		anestheti	
	<ul> <li>Anesthetic agents</li> </ul>		their	anesthesia,		c period.	
	<ul> <li>Peri anesthesia</li> </ul>		characteristics.	Anesthetic agents,	•	Simulate	
	assessment and care	3.	Demonstrate the	Peri anesthesia		d	
	<ul> <li>Post anesthesia</li> </ul>		pre-anesthetic	assessment and		learning	
	problems		assessment and	care, Post			
	•		care	anesthesia	•	Role play	
		4.	Explain the	problems and		and	
			problems arising	emergencies		video	
			post anesthesia	requiring critical		film on	
			p 100 0000000	care, Respiratory-		various	
		5.	Discuss on effects			scenarios	
		J.	Discuss on Circus	, in way obstruction,		Jechanos	

	T			T		
			of cardiovascular	, ,	and their	
			system by		manage	
			anesthesia	Bronchospasm,	ment.	
		6.	List the side	Noncardiogenic		
			effects of	pulmonary edema,	<ul> <li>Problem</li> </ul>	
			anesthesia	Aspiration,	based	
				Hypoxia,	learning.	
				Hypoventilation,		
				Cardiovascular –		
				Effects of		
				anesthesia on		
				cardiac function,		
				Myocardial		
				dysfunction, Dysrhy		
				thmias,		
				postoperative		
				hypertension, post-		
				operativehypotensi		
				on,		
				Thermoregulatory,		
				Hypothermia,		
				shivering,		
				hyperthermia,		
				malignant		
				hyperthermia,		
				Neurology- Delayed		
				emergence,		
				emergence,		
				delirium, Nausea		
				and vomiting		
9	Other special	1	Elaborate on rapio		Seminar on	10
	situations in critical		response teams	discuss on Rapid	disaster	10
			Brief on disastei			
	care				management	
	Rapid response toams and transport		management Review EN1	· ·	Project based	
	teams and transport				Project based	
	of the critically ill		emergencies	Disaster	learning	
	• Disaster		Discuss or	,		
	management		psychiatric	Ophthalmic		
	Ophthalmic	'	emergencies	emergencies – Eye		
	emergencies – Eye			injuries, glaucoma,		



10	Class Test			5 hrs
	intervention			
	Suicide, crisis	intervention		
	emergencies –	Suicide, cris	S	
	<ul> <li>Psychiatric</li> </ul>	emer Beneres	-	
	conditions	Psychiatric		
	quinsy, acute allergic	allergic condition	5,	
	stridor, bleeding,	quinsy, acut		
	Foreign bodies,	stridor, bleedin	5,	
	• ENT emergencies -	Foreign bodie	5,	
	retinal detachment	ENT emergencies		
	injuries, glaucoma,	retinal detachmen	-,	

#### Bibliography:

- Diepenbrock, N. H. (2008). Quick reference to critical care (3rd ed.). Philadelphia: Lippincott Williams and Wilkins.
- John, G., Subramani, K., Peter, J. V., Pitchamuthu, K., &Chacko, B. (2011). Essentials of critical care (8th ed.). Christian Medical College: Vellore.
- Morton, P. G., & Fontaine, D. K. (2013). Critical Care Nursing: A Ho;istic Approach (9th ed.).
   Lippincott Williams and Wilkins: Philadelphia
- Perrin, K. O. (2009). Understanding the essentials of critical care nursing. New Jersey: Pearson Education.
- Urden, L. D., Stacy, K. M., & Lough, M. E. (2014). Critical Care Nursing- Diagnosis and management (7th ed.). Elsevier: Missouri
- Wyckoff, M., Houghton, D., &Lepage, C. (2009). Critical care. New York: Springer publishing company.

### **SCHEME OF EXAMINATIONS**

**Note:** All Question Papers will have three parts.

**Part 1** will have three (03) Long Essay Type questions each of 15 marks out of which the student will attempt two (02) questions;

Part 2 will have two (02) Short Essay Type questions each of 10 marks; and

Part 3 will have six (06) Short Answer Type questions each of five (05) marks out of which the student will attempt four (04) questions.

#### 1st Year

Paper Code	Paper/ Subject	Theory Examination		Total Mark			Total Mark	Duratio n of
		Intern al	Extern al	S	Intern al	Extern al	S	Paper (TH/P R) (Hours )
	Theoretical Basis for Advanced Practice Nursing	50		50	1	ı	-	3
	Research Application and Evidence Based Practice in Critical Care	30	70	100	-	-	-	3
	Advanced skills in Leadership, Management and Teaching Skills	30	70	100	-	-	-	3
	Advanced Pathophysiology & Advanced Pharmacology relevant to Critical Care	30	70	100	-	-	-	3

Advanced Health/physical	30	70	100	50	50	100	3/3
Assessment							
Total	170	280	450	50	50	100	

#### 2<sup>nd</sup> Year

Paper Code	Paper/ Subject	Theory Examination		Total Mar	Practical Examination		Total Mar	Durati on of
Code		Intern al	Extern al	ks	Intern al	Extern al	ks	Exam. (TH/PR ) (Hours
	Foundations of Critical Care Nursing Practice	30	70	100	100	100	200	3/3
	Critical Care Nursing	30	70	100	100	100	200	3/3
	Critical Care Nursing	30	70	100	100	100	200	3/3
	Dissertation and viva				50	50	100	3
	Total	90	210	300	350	350	700	

### **Assessment (Formative and Summative)**

- Seminar
- Written assignments/Term papers
- Case/Clinical presentation
- Nursing process report/Care study report
- Clinical performance evaluation
- Log book- (Competency list and clinical requirements) counter signed by the medical/nursing faculty preceptor
- Objective Structured Clinical Examination(OSCE)/OSPE
- Test papers
- Final examination