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.

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Course as per council

First Year

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

Second Year

S.No	Subject	Theory(Hrs)	Lab/Skill (Hrs)	Clinical (Hrs)
	Specialty Courses			
I	Foundations of Critical Care Nursing Practice	96	48	552 (11 wks)
II	Critical Care Nursing I	96	48	552 (13wks)
III	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

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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

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- 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 Health Care Delivery System in India – Changing Scenario(Competency-3)	2
3.	National Health Planning – 5 year plans and National Health Policy(Competency-2)	2
4.	Health Economics & Health Care financing(Competency- 4)	4
5.	Health Information system including Nursing Informatics (use of computers)(Competency-5)	4
6.	**Advanced Nursing Practice (ANP)** Definition, Scope, Philosophy, Accountability, Roles & Responsibilities (Collaborative practice and Nurse Prescribing roles)(Competency-6&7)	3
7.	Regulation (accreditation of training institutions and Credentialing) & Ethical Dimensions of advanced nursing practice role (Competency-8)	3
8.	Nurse Practitioner – Roles, Types, Competencies, Clinical settings for practice, cultural competence(Competency-6)	3
9.	Training for NPs – Preceptorship (Competency-9)	2
10.	Future challenges of NP practice(Competency-11)	4

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11.	Theories of Nursing applied to APN(Competency-10)	3
12.	Nursing process applied to APN(Competency-9)	2
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

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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		Domains	Cognitive	psychomotor	Affective
1	Global Health Care Challenges and Trends	Good to know	Identifyes Global Health Care Challenges and Trends		Develops understanding
2	**Health System in India** Health Care Delivery System in India – Changing Scenario	Good to know			Develops understanding Health Care Delivery System in India
3	National Health Planning – 5 year plans and National Health Policy	Good to know	Analyzes 5 year plans and National		

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			Health Policy		
4	Health Economics & Health Care financing	Good to know			Appreciates Health Economics & Health Care financing
5	Health Information system including Nursing Informatics (use of computers)	Essential to perform		Utilizes Health Information system including Nursing Informatics	
6	**Advanced Nursing Practice (ANP)** Definition, Scope, Philosophy, Accountability, Roles [roles) (Competency-6&7)	Good to know Essential to perform	Aware of her Accountability and responsibilities	Performs nurse practitioner role for five patients	Write philosophy of her institution /ANP
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	Applies Nursing	

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			theories of nursing applied to ANP	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 b) Describe the legal position in India for NP practice. What is the future of nurse prescribing policies in India with relevance to these policies in other countries? c) Examine the nursing protocols relevant to NP practice found in various ICUs in tertiary center	Essential to perform	Analyse the impact health care and education polices Discuss the legal issues related to NP practice	Writes the health care policies of India. Describes the legal position in India for NP practice. Examine the nursing protocols 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)

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- 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 1st 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	Discuss the global	To teach and discuss	Interactive session	2 hrs

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	Care Challenges and Trends (Competency-1)	healthcare trends and challenges.	about global healthcare trends and challenges.	with the students regarding global healthcare trends and challenges.	
2	**Health System in India** Health Care Delivery System in India – Changing Scenario(Competency-3)	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
3	National Health Planning – 5 year plans and National Health Policy (Competency-2)	Elaborate the National health planning and health information system in India	To teach and discuss aboutNational Health Planning – 5 year plans and National Health Policy	Student seminar on National Health Planning – 5 year plans &National Health Policy	2 hrs
4	Health Economics & Health Care financing (Competency- 4)	Appreciate theHealth Economics & Health Care financing	To teach and discuss about Health Economics & Health Care financing	Panel discussion on health economics and health care financing	4 hrs
5	Health Information system including Nursing Informatics (use of computers)(Competency-5)	Discuss the Health information system and Nurse informatics	To teach and discuss about Health information system and Nurse informatics (use of computers)	Seminar on health information system Simulated learning on Nurse Informatics.	4 hrs
6	**Advanced Nursing Practice (ANP)** Definition, Scope, Philosophy, Accountability, Roles & Responsibilities (Collaborative practice and Nurse Prescribing	Summarize the Definition, Scope, Philosophy, Accountability, Roles & Responsibilities of advanced nursing practice	To teach and discuss about Definition, Scope, Philosophy, Accountability, Roles & Responsibilities of advanced nursing practice	Student seminar on scope, philosophy and Accountability in advanced nursing practice. Fish bowl technique on roles and responsibilities of	3 hrs

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	roles) (Competency-6&7)			Advanced nursing practice	
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	Simulated learning regarding Training preceptorship for Nurse practitioner	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	Seminar on Theories of Nursing applied to APN	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

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				practice	
13	**Self-Learning assignments** **I.**Identify Health Care and Education Policies and analyse its impact on Nursing **II.**Describe the legal position in India for NP practice. What is the future of nurse prescribingpolicies 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	Analyzes the impacthealth care polices on nursing. Prepares the nursing protocols related to NP practice in ICUs and tertiary Centre.	To teach and discuss about health care policy and its impact on nursing and nursing protocols related to NP practice.	Spot group discussion Role play Panel discussion	6 hrs

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 andclinical 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

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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:** Significance of Research and inquiry related to Advanced nursing role	2
2.	**Research agenda for APN practice:** • Testing current practice to develop best practice • Health outcomes Indicators of quality care in advanced practice • Promoting research culture	5
3.	**Research Knowledge and skills:** • Research competencies essential for APNs • Research Methodology: Phases / steps • Writing research proposal and research report	40 (5 days workshop)
4.	**Writing for publication**	5 (Workshop)
5.	**Evidence based practice** • Concepts, principles, importance and steps • Integrating EBP to ICU environment • Areas of evidence in critical care • Barriers to implement EBP • Strategies to promote	4

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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 Practice Nursing:** Significance of Research and inquiry related toAdvanced nursing role	Good to know	Identifies Significance of Research and inquiry related to Advanced nursing role		
2	**Research agenda for APN practice:** • Testing current practice to develop best practice • Health outcomes Indicators of quality care in advanced practice • Promoting research culture	Essential to perform		Evaluates current practice to develop best practices and health outcomes and quality care in advanced practice	
3	**Research Knowledge and skills:** • Research competencies essential for APNs • Research Methodology: Phases / steps • Writing research	Essential to perform		Applies sound research knowledge and skills in conducting independent research in critical care setting	

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	proposal and research report			Writes research proposal and research report	
4	**Writing for publication**	Desirable to perform		Prepares manuscript for publication Writes systematic review	Develop understanding in writing for publication (writing for workshop)
5	**Evidence based practice** • Concepts, principles, importance and steps • Integrating EBP to ICU environment • Areas of evidence in critical care • Barriers to implement EBP • Strategies to promote	Essential to perform			Analyses the evidence for nursing interventions carried out in critical care nursing practice to promote safety and effectiveness of care.

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

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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. NO	CONTENT OF TOPICS	LEARNING OBJECTIVES (At the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	**Research and Advanced Practice Nursing:** • Significance of Research • Advanced nursing role	1. Describe the concept of Research 2. Discuss the concept of Advance Practice Nursing 3. Review the significance of Research. 4. Analyze the relation of Research inAdvanced nursing role	To teach and discuss Research, Advanced Nursing roles and to understand about thesignificance of Research and inquiry related to Advanced nursing role in respect to Research.	• Interactive session with the students regarding concept of research and Advanced Practice Nursing. Spot group discussion on Research and Advanced Practice Nursing	2 hrs

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2	**Research agenda for APN practice:** • Testing current practice • Developing best practice • Indicators of quality care in advanced practice • Promotingresearch 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.	To teach and discuss about Testing current practice to develop best practice, health outcomes and indicators of quality care in advanced practice, promoting research culture	• Teachers seminar on healthoutcomes and indicators of quality care in advanced practice • Interactive session with students regarding promoting research culture. • Role play on application of research in advanced practice.	5 hrs
3	**Research Knowledge and skills:** • Research competencies essential for APNs **Research Methodology** • Phases / steps of research. • Writing research proposal and research report.	1. Appreciate the research competencies essential for APNs 2. Demonstrate the research competencies essential for APNs 3. Elaborate steps or phases of research.	To teach and discuss about Research competencies essential for APNs: interpretation and use of research, evaluation ofpractice, participation in collaborative research. Research MethodologyPhases / steps: Research question, Review of literature, conceptual framework,	• Workshop on Research Methodology and Phases. • Student seminar on Research competencies essential for APNs	40 hrs (5 days workshop)

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			research designs, sampling,data collection, methods &tools, Analysis and Reporting. writing research proposal and research report		
4	**Writing for publication** • Writing workshop	1. Demonstrate on writing workshop manuscript. 2. Enlistthe sources for workshop funding.	To teach and practice on writing workshop – Manuscript preparation and finding funding sources for workshop.	• Integrated teaching on writing workshop manuscript	5 hrs (Workshop)
5	**Evidence based practice** • Concepts, principles, importance and steps • Integrating EBP to ICU environment • Areas of evidence in critical care • Barriers to implement EBP • Strategies to promote EBP	1. Explain the concept, principles, importance and steps of Evidence Based Practice. 2. Demonstrate integration of EBP to ICU. 3. Enlist the areas of evidence in critical care. 4. List the barriers to implement EBP. 5. Discuss the strategies to promote EBP	To teach and discuss about Concepts, principles, importance and steps, Integrating EBP to ICU environment, Areas of evidence in critical care, Barriers to implement EBP, Strategies to promote.	• Simulated learning on implementation of EBP in ICUs. • Role play • Focus group discussions	4 hrs

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- Polit, D. F., & Beck, C. T. (2012). Nursing research:Generating and assessing evidence for nursing practice (9th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Schmidt, N. A., & Brown, J. M. (2009). Evidence – based practice for nurses' appraisal and application ofresearch. 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

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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

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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

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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 leadership and current trends	Good to know	Develops knowledge inTheories, styles of leadership and current trends		
2	Theories, styles of management and current trends	Good to know	Develops knowledge in Theories, styles of management and current trends		
3	Principles of leadership and management applied to critical care settings	Essential to perform		Applies principles of leadership and management in critical care units	
4	Stress management and conflict management – principles and application to critical care environment, Effective time management	Essential to perform		Manages stress and conflicts effectively in a critical care setting using sound knowledge of principles	
5	Quality improvement and audit	Desirable to perform		Participates in quality improvement and audit Prepare nursing care standards and protocols	
6	Problem solving, critical thinking and decision	Essential to perform		Applies problem solving and	

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	making, communication skills applied to critical care nursing practice			decision making skills effectively	
7	Team building, motivating and mentoring within ICU set up	Essential to perform		Builds teams and motivates others in ICU setting	
8	Budgeting and management of resources including human resources – ICU budget, material management, staffing, assignments	Essential to perform		Develops unit budget, manages supplies and staffing effectively Prepare staff duty roster	
9	Change and innovation	Desirable to perform		Participates appropriately in times of innovation and change	
10	Staff performance, and evaluation (performance appraisals)	Essential to perform		Evaluates staff performance Planning and conducting OSCE/OSPE	
11	Teaching – Learning theories and principles applied to Critical Care Nursing	Desirable to perform		Applies Teaching – Learning theories and principles in Critical Care Nursing	
12	Competency based education and outcome based education	Good to know	Develops knowledge in Competency based education and outcome based education		
13	Teaching methods / strategies, media:	Essential to perform		Uses effective teaching	

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	educating patients and staff in Critical Care settings			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 to perform		Prepares evaluation tool Construction of tests	
15	APN – Roles as a teacher	Essential to perform			Appreciates the role of APN
16	Advocacy roles, family counseling in critical care environment	Essential to perform		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

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- 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

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.	To teach and discuss about 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	To teach and discuss about the theories, styles of management and current trends.	• Teachers seminar on theories. • Interactive session with students regarding theories and current trends. • Role play on functions of a nurse.	2hrs

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3	Principles of leadership and management applied to critical care settings	Review the principles of leadership and management applied to critical care settings	To teach and discuss about the principles of leadership and management applied to critical care settings	• Student seminar on leadership and management • Spot group discussions	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	• Role play and video film on the nurses interacting with the patient • Problem based learning for maintaining nurse patient relationship. • Seminar on stress and conflict management	4 hrs
5	Quality improvement and audit	Summarize quality improvement and audit	To teach and discuss about quality improvement and audit	• Panel discussion on 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 critical care nursing practice	To teach and discuss about the problem solving, critical thinking and decision making, communication skills applied to critical care nursing	• Case studies • Student seminar on Problem solving, critical thinking and decision making,	6 hrs

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			practice	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.	• Integrated teaching on team building in ICU Role play	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
11	Teaching – Learning theories and principles applied to Critical Care	Elaborate teaching – Learning theories and principles	To teach and discuss about the teaching – Learning	• Seminar on teaching –	2 hrs

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	Nursing	applied to Critical Care Nursing	theories and principles applied to Critical Care Nursing	Learning theories and principles applied to Critical Care Nursing • Interactive sessions	
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 based education Fish bowl technique on outcome based 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	To teach and discuss about the teaching methods / strategies, media: educating patients and staff in Critical Care settings	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	To teach and discuss about staff education and use of tools in evaluation	Seminar on staff education Role play on staff education and use of tools in evaluation.	4 hrs
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 –	2 hrs

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				Roles as a teacher.	
16	Advocacy roles, family counseling in critical care environment	Review the advocacy roles, family counseling in critical care environment	To teach and discuss about advocacy roles, family counseling in critical care environment	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

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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, l. 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

S no	Content	DOMAINS	COGNITIVE	PSYCHOMOTO	AFFECTIVE

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				R	
1	**Cardiovascular function** Advanced pathophysiological process of cardiovascular conditions • hypertensive disorder • peripheral artery disorder • venous disorders • coronary artery diseases • Valvular heart disease • cardiomyopathy and heart failure • cardiac tamponade • Arrythmias • Corpumonale • heart block and conduction disturbances	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to cardiovascular conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of cardiovascular conditions	Integrates the knowledge of pathophysiological process in cardiovascular conditions in developing diagnosis and plan of care
2	**pulmonary function** advanced pathophysiological process of pulmonary conditions • chronic obstructive pulmonary disease • disorders of the pulmonary vasculature • infectious diseases • respiratory failure • chest trauma	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to pulmonary conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of pulmonary conditions	Integrates the knowledge of pathophysiological process in pulmonary conditions in developing diagnosis and plan of care
3	**Neurological function** advanced pathophysiological process of neurological conditions • seizure disorder • cerebrovascular disease • infections • spinal cord disorder • degenerative neurological diseases	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to cardiovascular conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of neurological conditions	Integrates the knowledge of pathophysiological process in neurological conditions in developing diagnosis and plan of care

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	• neurological trauma • coma, unconsciousness				
4	**Renal function** Advanced pathophysiological process of renal conditions • acute renal failure • chronic renal failure • bladder trauma • infections(glomerulonephritis) • nephrotic syndrome.	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to renal conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of renal conditions	Integrates the knowledge of pathophysiological process in renal conditions in developing diagnosis and plan of care
5	**Gastrointestinal and hepatobiliary function** Advanced pathophysiological process of hepatobiliary conditions • gastrointestinal bleeding • intestinal obstruction • pancreatitis • hepatic failure • gastrointestinal perforation	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to gastrointestinal and hepatobiliary conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of gastrointestinal and hepatobiliary conditions	Integrates the knowledge of pathophysiological process in gastrointestinal and hepatobiliary conditions in developing diagnosis and plan of care
6	**Endocrine functions** Advanced pathophysiological process of endocrine conditions • diabetic ketoacidosis • hyperosmolar non ketotic coma • hypoglycemia • thyroid storm • myxedema coma • adrenal crisis • syndrome of inappropriate antidiuretic hormone secretion	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to endocrine conditions recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of endocrine conditions	Integrates the knowledge of pathophysiological process in endocrine conditions in developing diagnosis and plan of care

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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 and plan of care in cardiovascular function.	To teach and discuss about Peripheral artery disorder • Venous disorders • Coronary artery diseases • Valvular heart disease • Cardiomyopathy and heart failure • Cardiac Tamponade • Arrythmias • Corpumonale • Heart block and conduction disturbances	Problem based learning Cooperative learning Case studies Teacher seminar Spot group discussion on valvular heart disease Student interactive session on heart block and conduction.	8
2	**Pulmonary function**	Enumerate the etiology pathopysiological process in critical conditions in developing diagnosis and plan of care in pulmonary functions	To teach and discuss about the about the Advanced pathophysiological process of pulmonary conditions • Chronic obstructive pulmonary disease • Disorders of the pulmonary vasculature • Infectious diseases • Respiratory failure • Chest trauma	Lecture Discussion Case Discussion/ Seminar Teacher seminar Spot group discussion Tutorials. Panel discussion on COPD.	4

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3	**Neurological function**	Discuss the etiology pathopysiological process in critical conditions in developing diagnosis and plan of care in neurological functions	To teach and discuss about the about the Advanced pathophysiological process of neurological conditions • Seizure disorder •Cerebrovascular disease • Infections • Spinal cord disorder • Degenerative neurological diseases • Neurological trauma • Coma, unconsciousness	Case Discussion/ Seminar Student interactive session Problem based learning Fish bowel technique Simulation technique	6
4	**Renal function**	Enumerate the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in renal function.	To teach and discuss 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	4
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

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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 antidiuretic hormone secretion	Student interaction session Problem based learning Student interactive session Panel discussion Presentation Fish bowel technique	

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

S NO	TOPIC	DOMAIN	COGNITIVE	PSYCHOMOTOR	AFFECTIVE
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	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to integumentary conditions	Applies pathophysiological principles in symptom management and	Integrates the knowledge of pathophysiologic al process in integumentary

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	• wound healing • burns • Stevenjohnson syndrome		recognizing the value of diagnosis, treatment, care and prognosis	secondary prevention of integumentary conditions	conditions in developing diagnosis and plan of care
3	**multisystem dysfunction** advanced pathophysiological process of neurological conditions • shock - hypovolemic - cardiogenic - distributive • systemic inflammatory syndrome • multiple organ dysfunction syndrome • trauma - thoracic - abdominal - musculoskeletal - maxillofacial • drug overdose and poisoning • envenomation	Good to know Essential to perform	Analyzes the pathophysiological changes relevant to multisystem dysfunction recognizing the value of diagnosis, treatment, care and prognosis	Applies pathophysiological principles in symptom management and secondary prevention of multisystem dysfunction	Integrates the knowledge of pathophysiologic al process in multisystem dysfunction in developing 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 reproductivecondi	Applies pathophysiological principles in symptom management and	Integrates the knowledge of pathophysiologic al process in reproductive

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	• antepartum hemorrhage • pregnancy induced hypertension • obstructed labour • ruptured uterus • postpartum hemorrhage • puerperal sepsis • amniotic fluid embolism • HELLP (hemolysis, elevated liver enzymes, low platelet count) • trauma		tions recognizing the value of diagnosis, treatment, care and prognosis	secondary prevention of reproductive conditions	conditions in developing diagnosis and plan of care

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	To teach and discuss about Advanced pathophysiological process of hematological conditions • Disorders of red blood cells -	Case presentation Seminar Student interactive session Panel discussion Spot group discussion Focus group	8

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		functions	Polycythemia - Anemia - Sickle cell diseases • Disorders of white blood cells - Leucopenia - Neoplastic disorders • Disorders of hemostasis - Platelet disorders - Coagulation disorders - Disseminated intravascular coagulation	discussion Project based learning	
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	Case presentation Seminar teacher seminar Panel discussion Case Discussion / Seminar Case presentation Seminar Student Interactive session	

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			dysfunction syndrome • Trauma - Thoracic - Abdominal - Musculoskeletal – maxillofacial • Drug overdose and poisoning • Envenomation		
4	**Specific functions**	Enumerate the etiology pathophysiological process in critical conditions in developing diagnosis and plan of care in specific function	To teach and discuss about the Advanced pathophysiological process of specific infections • HIV • Tetanus • SARS • Rickettsiosis • Leptospirosis • Dengue • Malaria Chickungunya • Rabies • Avian flu • Swine flu	Case presentation Seminar. Case studies Project based learning Seminar panel discussion teacher seminar students seminar	6
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 • Amniotic fluid	Simulation technique Tutorials Focus group discussion Drug book / presentation. Case presentation Seminar Student interactive session	6

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			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

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Unit	Topic	Hours
20.	Introduction to pharmacology in critical care	2
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.

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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 in critical care** History Classification of drugs and schedules	Good to know			Develop knowledge in classification of drugs and schedules
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 Topical drug administration Parentral drug administration	Good to know	Analyses Pharmacokinetics and Pharmaco-dynamics relevant to drugs used in treatment of critical care conditions		
3	Pharmacology and Cardiovascular alterations in Critical care • Vasoactive Medications Vasodilator, Vasopressor, Inotropes - Cardiac glycosides – digoxin - Sympathomimetics –	Essential to perform Good to know	Develops knowledge in drugs used in cardiovascular conditions	Applies the pharmacological principles in providing care to patients with cardiovascular alterations Perform safe	

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	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 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			drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with cardiovascular alterations	
4	Pharmacology and Pulmonary alterations in Critical care • Mechanical Ventilation ▯ Introduction ▯ Medications used on patients	Essential to perform Good to know	Develops knowledge in drugs used in pulmonary conditions	Applies the pharmacological principles in providing care to patients with	

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	with mechanical ventilator ▯ Mechanical ventilation impact on pharmacotherapy – Sedation and analgesia, Neuromucsular blockade, Nutrition • Pulmonary critical care conditions ▯ Medications in the management of Status asthmaticus ▯ Medications in the management of Pulmonary edema ▯ Medications in the management of Pulmonary embolism ▯ Medications in the 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 ▯ Medications in the management of Pneumonia ▯ Medications in the management of Pleural effusion ▯ Medications in the management of Atelectasis • Standing orders for pulmonary critical care emergencies.			cardiovascular alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with cardiovascular alterations	
5	Pharmacology and Neurological alterations in Critical care • Pain ▯ NSAID ▯ Opioid analgesia	Essential to perform Good to know	Develops knowledge in drugs used in neurological conditions	Applies the pharmacological principles in providing care to patients with	

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	• 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 Anti cholinergic agents • Medications in the management of anxiety and insomnia Antidepressants Benzodiazepines Barbiturates Neurological critical care 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			neurological alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administrationof drugs with neurological alterations	

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	? 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 Coma, Unconsciousness and persistent vegetative state ? Appropriate nursing care to safeguard patient Standing orders for neurology critical care emergencies				
6	Pharmacology and Nephrology alterations in Critical care • Diuretics • Fluid replacement ? Crystalloids ? Colloids • Electrolytes ? Sodium ? Potassium ? Calcium ? Magnesium ? Phosphorus • Nephrology critical care conditions ? Medications in the management of Acute / Chronic renal failure ? Medications in the	Essential to perform Good to know	Develops knowledge in drugs used in nephrological conditions	Applies the pharmacological principles in providing care to patients with nephrological alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction	

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	management of Acute tubular necrosis • Medications in the management of Bladder 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			in administration of drugs with nephrological alterations	
7	Pharmacology and Gastrointestinal alterations in Critical care • Anti-ulcer drugs • Laxatives • Anti diarrheals • Anti emetics • Pancreatic enzymes • Nutritional supplements, Vitamins and minerals • Gastro intestinal critical care conditions • Medications in the management of Acute GI bleeding, Hepatic failure • Medications in the management of Acute pancreatitis Medications in the management of Abdominal injury ••Medications in the management of Hepatic encephalopathy • Medications in the management of Acute intestinal obstruction	Essential to perform Good to know	Develops knowledge in drugs used in gastrointesti nal conditions	Applies the pharmacological principles in providing care to patients with gastrointestinal alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with gastrointesinal alterations	

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	▯ Medications in the management of Perforative peritonitis ▯ Medications used during Gastrointestinal surgeries and Liver transplant ▯ Standing orders for gastro intestinal critical care emergencies				
	Pharmacology and Endocrine alterations in Critical care ▯ Hormonal therapy ▯ Insulin and Other hypoglycemic agents ▯ Endocrine critical care conditions ▯Medications in the management of Diabetic ketoacidosis, Hyperosmolar non ketotic coma ▯Medications in the management of hypoglycemia ▯Medications in the management of Thyroid storm Medications in the management of Myxedema coma ▯Medications in the management of Adrenal crisis ▯Medications in the management of SIADH ▯ Standing orders for endocrine critical care emergencies	Essential to perform Good to know	Develops knowledge in drugs used in endocrine conditions	Applies the pharmacological principles in providing care to patients with endocrine alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with endocrine alterations	
8	Pharmacology and Hematology alterations in Critical care • Anticoagulants • Antiplatelet drugs • Thrombolytics • Hemostatics/ antifibrinolytics • Hematopoietic growth factors ▯ Erythropoietin ▯ Colony stimulating factors ▯ Platelet enhancers	Essential to perform Good to know	Develops knowledge in drugs used in hematology conditions	Applies the pharmacological principles in providing care to patients with hematology alterations Perform safe drug	

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	• Blood and blood products ▯ Whole blood, Packed red blood cells, Leukocyte-reduced red cells, Washed red blood cells, Fresh frozen plasma, Cryoprecipitate ▯ Albumin • Transfusion reactions, Transfusion administration process • Vaccines • Immunostimulants • Immunosuppressant • Chemotherapeutic drugs – Alkylating agents, anti metabolites, anti tumor antibiotics, alkaloids, hormones and hormone antagonist, corticosteroids, gonadal hormones, anti estrogens, androgen antagonists, biologic response modifiers • Hematology critical care 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			administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with haematology alterations	

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	syndrome Standing orders for hematology critical care emergencies				
9	Pharmacology and Skin alterations in Critical care • Hematology critical care conditions Medications used in burn management Medications used in wound management • Standing orders for skin critical care emergencies	Essential to perform Good to know	Develops knowledge in drugs used in skin conditions	Applies the pharmacological principles in providing care to patients with skin alterations Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with skin alterations	
10	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 management of fever in critical	Essential to perform Good to know	Develops knowledge in drugs used in multisystem conditions	Applies the pharmacological principles in providing care to patients with multisystem alterations Perform safe drug administration based on principles and institutional protocols Applies sound	

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	care setting ▯ Antipyretics ▯ NSAIDS ▯ Corticosteroids • Standing orders for multi system critical care emergencies			knowledge of drug interaction in administration of drugs with multisystem alterations	
12	Pharmacology and Infections in Critical care • Antibacterial drugs ▯ Introduction ▯ Beta lactams – Penicillins, cephalosporins, monobactams, carbapenams, ▯ Aminoglycosides ▯ Anti MRSA ▯ Macrolides ▯ Quinolones ▯ 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 ▯ Medications in the management of HIV, Tetanus, SARS, Rickettsiosis, Leptospirosis, Dengue, Malaria, Chickungunya, Rabies, Avian flu and Swine flu • Standing orders for infectious critical care emergencies	Essential to perform Good to know	Develops knowledge in drugs used in infections	Applies the pharmacological principles in providing care to patients with infections Perform safe drug administration based on principles and institutional protocols Applies sound knowledge of drug interaction in administration of drugs with infections	

Assessment techniques for Theory

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

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- 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

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V.ADVANCED PHARMACOLOGY RELEVANT TO CRITICAL CARE NURSING

Placement: Nurse Practitioner in critical care 1st Year

Hours of Instruction
Theory: 69 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	**Introduction to pharmacology in critical care** History Classification of drugs and schedules	1. Discuss the history of pharmacology 2. Enumerate the classification of drugs and schedules.	To teach and discuss about introduction to pharmacology in critical care (history of pharmacology and its classification of drugs and schedules).	• Interactive session with the students regarding pharmacology in critical care.	2hrs

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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 ▯ Topical 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 Pharmaco-dynamics (IntroductionAbsorption, 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,Topical drug administration, Parentral drug administration).	• Seminar on Pharmacokinetics and Pharmaco-dynamics. • Interactive session with students regarding Principles of drug administration	4 hrs
3	Pharmacology and Cardiovascular alterations in Critical care • Vasoactive Medications ▯ Vasodilator, ▯ Vasopressor, ▯ Inotropes - Cardiac glycosides – digoxin - Sympathomimetics –	1.Review the Pharmacology and Cardiovascular alterations in Critical care 2.Discuss Vasoactive Medications. 3.Describe the	To teach and discuss about Pharmacology and Cardiovascular alterations in Critical care and vasoactive medications, medications to improve cardiac	• Student seminar on Cardiovascular alterations in Critical care and vasoactive medications. • Focus group discussions	5 hrs

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	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 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	medications to improve cardiac contractility, in critical care, management.	contractility, management of hypertension in critical care, management of heart failure, management of angina pectoris and myocardial infarction, management of dysrhythmias, Heart block and conduction disturbances, management of Pulmonary hypertension, Valvular heart disease,Cardiomyp athy, management of Pulmonary hypertension, Valvular heart disease, management of Atherosclerotic disease of aorta and Peripheral artery disease, management of Deep vein thrombosis.	• Integrated teaching on cardiovascular medications	
4	Pharmacology and Pulmonary	1.Discuss the			

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	alterations in Critical care • Mechanical Ventilation ▯ Introduction ▯ Medications used on patients with mechanical ventilator ▯ Mechanical ventilation impact on pharmacotherapy – Sedation and analgesia, Neuromuscular blockade, Nutrition • Pulmonary critical care conditions ▯ Medications in the management of Status asthmaticus ▯ Medications in the management of Pulmonary edema ▯ Medications in the management of Pulmonary embolism ▯ Medications in the 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 ▯ Medications in the management of Pneumonia ▯ Medications in the management of Pleural effusion ▯ Medications in the management of Atelectasis • Standing orders for pulmonary critical care emergencies.	Pharmacology and Pulmonary alterations in Critical care. 2.Elaborate the working of mechanical ventilation(Introduction,Medications used on patients with mechanical ventilator. 3. Review Pulmonary critical care conditions	To teach and discuss about Pharmacology and Pulmonary alterations in Critical care, mechanical ventilation (Introduction, Medications used on patients with mechanical ventilator), Pulmonary critical care conditions. (Medications in the management of Status asthmaticus, Pulmonary edema, Pulmonary embolism, Acute respiratory failure and Acute respiratory distresssyndrome, Chest trauma, Chronic obstructive pulmonary disease, Pneumonia, Pleural effusion, Atelectasis	• Problem based learning for Pulmonary critical care conditions. • Student seminar on Mechanical Ventilation	4 hrs

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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 ▯ Cholinergic agents ▯ Anti cholinergic agents • Medications in the management of anxiety and insomnia ▯ Antidepressants Benzodiazepines ▯ Barbiturates Neurological critical care conditions ▯ Medications in the management of psychoses	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.	To teach and discuss about Pharmacology and Neurological alterations in Critical care(Pain, Sedation, Stimulants, Delirium, Psychotics), medications used for local and general anesthesia(Local Amides, esters, and miscellaneous agents, General – Gases, Volatile liquids, IV anesthetics), Paralytic Medications(Non-depolarizing and depolarizing agents, Anxiolytics)Autonomic drugs(Adrenergic agents/ Sympathomimetics, Adrenergic blocking agents,Cholinergic agents, Anti cholinergic agents), Medications in the management of anxiety and insomnia(Antidepressants, Benzodiazepines, Barbiturates),	• Simulated learning on Neurological alterations in Critical care • Student seminar on medications used for local and general anesthesia. • Case studies • Integrated teaching	6 hrs

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	⍰ 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 Coma, Unconsciousness and persistent vegetative state ⍰ Appropriate nursing care to safeguard patient Standing orders for neurology critical care emergencies		Neurological critical care conditions, Medications in the management of psychoses, acute head and spinal cord injury with elevatedintracranial pressure, muscle spasm, spasticity, Cerebro vascular disease and cerebro vascular accident, Encephalopathy, Gillian Bare syndrome and Myasthenia gravis, Brain herniation syndrome, Seizure disorder, Coma, Unconsciousness and persistent vegetative state.		
6	Pharmacology and Nephrology alterations in Critical care • Diuretics • Fluid replacement ⍰ Crystalloids ⍰ Colloids	1.Explain about thePharmacology and Nephrology alterations in Critical care. 2.Describe Nephrology critical	To teach and discuss about Pharmacology and Nephrology alterations in Critical care(Diuretics,	• Simulated learning on Pharmacology and Nephrology alterations in	5 hrs

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	• Electrolytes ▯ Sodium ▯ Potassium ▯ Calcium ▯ Magnesium ▯ Phosphorus • Nephrology critical care conditions ▯ Medications in the management of Acute / Chronic renal failure ▯ Medications in the management of Acute tubular necrosis ▯ Medications in the management of Bladder 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.	care conditions.	Fluid replacement, Electrolytes), Nephrology critical care conditions.	Critical. • Student seminar on fluid replacement therapy. • Focus group discussion • Integrated teaching	
7	Pharmacology and Gastrointestinal alterations in Critical care • Anti-ulcer drugs • Laxatives • Anti diarrheal • Anti emetics • Pancreatic enzymes • Nutritional supplements, Vitamins and minerals • Gastro intestinal critical care conditions ▯ Medications in the management of Acute GI bleeding, Hepatic failure	1.Discuss the Pharmacology and Gastrointestinal alterations in Critical care. 2.Review the Gastro intestinal critical care conditions.	To teach and discuss about Pharmacology and Gastrointestinal alterations in Critical care(Anti-ulcer drugs, Laxatives, Anti diarrheal, Anti emetics, Pancreatic enzymes, Nutritional supplements,	• Simulated learning of Gastrointestinal alterations in Critical care. Seminar on Gastrointestinal alterations in Critical care.	5 hrs

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	▯ Medications in the management of Acute pancreatitis Medications in the management of Abdominal injury ▯▯Medications in the management of Hepatic encephalopathy ▯ Medications in the management of Acute intestinal obstruction ▯ Medications in the management of perforative peritonitis ▯ Medications used during Gastrointestinal surgeries and Liver transplant ▯ Standing orders for gastro intestinal critical care emergencies		Vitamins and minerals), Gastro intestinal critical care conditions. (Acute GI bleeding, Hepatic failure, Acute pancreatitis, Abdominal injury, Hepatic encephalopathy, Acute intestinal obstruction, perforative peritonitis, Gastrointestinal surgeries and Liver transplant).		
8	Pharmacology and Endocrine alterations in Critical care ▯ Hormonal therapy ▯ Insulin and Other hypoglycemic agents ▯ Endocrine critical care conditions ▯Medications in the management of Diabetic ketoacidosis, Hyperosmolar non ketotic coma ▯Medications in the management of hypoglycemia ▯Medications in the management of Thyroid storm Medications in the management of Myxedema coma ▯Medications in the	1.Discuss the Pharmacology and Endocrine alterations in Critical care 2.Review the Hormonal therapy,Insulin and Other hypoglycemic agents.	To teach and discuss about Pharmacology and Endocrine alterations in Critical care, Hormonal therapy,Insulin and Other hypoglycemic agents, Endocrine critical care conditions (Medications in the management of Diabetic ketoacidosis, Hyperosmolar non ketotic coma, hypoglycemia,	• Simulated learning on Pharmacology and Endocrine alterations in Critical care • Seminar on hormonal therapy, Insulin and Other hypoglycemic agents.	4hrs

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	management of Adrenal crisis Medications in the management of SIADH Standing orders for endocrine critical care emergencies		Thyroid storm, Myxedema coma, Adrenal crisis, SIADH.		
9	Pharmacology and Hematology alterations in Critical care • Anticoagulants • Antiplatelet drugs • Thrombolytics •Hemostatics/ antifibrinolytics • Hematopoietic growth factors Erythropoietin Colony stimulating factors Platelet enhancers • Blood and blood products Whole blood, Packed red blood cells, Leukocyte-reduced red cells, Washed red blood cells, Fresh frozen plasma, Cryoprecipitate Albumin • Transfusion reactions, Transfusion administration process • Vaccines • Immunostimulants • Immunosuppressant • Chemotherapeutic drugs – Alkylating agents, anti metabolites, anti tumor antibiotics, alkaloids, hormones and hormone antagonist, corticosteroids, gonadal hormones, anti estrogens, androgen	1.Discuss the Pharmacology and Hematology alterations in Critical care. 2.Summarize the Hematology critical care conditions.	To teach and discuss about Pharmacology and Hematology alterations in Critical care,(Anticoagulants, Antiplatelet drugs, Thrombolytics, Hemostatics/ antifibrinolytics, Hematopoietic growth factors, Blood and blood products, Whole blood, Packed red blood cells, Leukocyte-reduced red cells, Washed red, blood cells, Fresh frozen plasma, Cryoprecipitate, Albumin) Hematology critical care conditions. Transfusion administration process (Vaccines, Immunostimulants Immunosuppressant Chemotherapeutic drugs – Alkylating	Student Seminar on Hematology critical care conditions. Case studies on hematological alterations in Critical care	5hrs

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	antagonists, biologic response modifiers • Hematology critical care 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 Standing orders for hematology critical care emergencies		agents, anti metabolites, anti tumor antibiotics,alkaloids, hormones and hormone antagonist, corticosteroids, gonadal hormones, antiestrogens, androgen antagonists).		
10	Pharmacology and Skin alterations in Critical care • Hematology critical care conditions Medications used in burn management 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,	1.Discuss the Pharmacology and Multisystem alterations in Critical care.	To teach and discuss about the Pharmacology and Multisystem alterations in	• Seminar on management of shock.	5 hrs

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	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 management of fever in critical care setting Antipyretics NSAIDS Corticosteroids • Standing orders for multi system critical care emergencies	2.Summarize the Medications in the management of shock, sepsis, Multiple Organ Dysfunction, Systemic inflammatory response syndrome, Anaphylaxis	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), the management of bites, Drug overdose and Poisoning, Medications in the management of fever in critical care setting (Antipyretics, NSAIDS,Corticosteroids)	• Simulated learning on management of Trauma, Injuries.	
12	Pharmacology and Infections in Critical care • Antibacterial drugs Introduction Beta lactams – Penicillins, cephalosporins, monobactams, carbapenams, Aminoglycosides Anti MRSA Macrolides Quinolones Miscellaneous – lincosamide group, nitroimidazole, tetracyclins and	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,	• Interactive session on Pharmacology and Infections in Critical care • Seminar on Medications in the management of HIV, Tetanus,	6 hrs

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	chloramphenicol, polymyxins, anti malarials, anti fungals, anti virals • Anti fungal drugs • Anti protozoal drugs • Anti viral drugs • Choice of antimicrobials • Infectious critical care conditions □ Medications in the management of HIV, Tetanus, SARS, Rickettsiosis, Leptospirosis, Dengue, Malaria, Chickungunya, Rabies, Avian flu and Swine flu • Standing orders for infectious critical care emergencies		Quinolo Miscellaneous – lincosamide group, nitroimidazole, tetracyclins and chloramphenicol, polymyxins, anti malarials, anti fungals, anti virals, Anti fungal drugs, Anti-protozoal drugs, Anti viral drugs	SARS, Rickettsiosis, Leptospirosis, Dengue, Malaria, Chickungunya, Rabies, Avian flu and Swine flu.	

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

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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

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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
	TOTAL	**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	

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	• History taking • Physical examination	to perform		physical assessment principles in developing appropriate system wise examination skills	
2	**Cardiovascular System** • Cardiac history • Physical examination • Cardiac laboratory • Cardiac diagnostic studies	Good to know Essential to perform	Analyzes the result of various investigations related to cardiovascular 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	
3	**Respiratory System** • History • Physical examination • Respiratory monitoring • Respiratory Diagnostic tests	Good to know Essential to perform	Analyzes the result of various investigations related to respiratory 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	
4	**Nervous System** • General physical examination • Assessment of	Good to know Essential to	Analyzes the result of various investigations related to	Uses advanced health assessment skills to	

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

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	• Diagnostic studies – radiological and imaging studies, endoscopic studies			Orders screening and diagnostic tests based on the examination findings	
7	**Endocrine System** • History • Physical examination, • Laboratory studies • Diagnostic studies	Good to know Essential to perform	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 tests based on the examination findings	
8	**Hematological System** • History • Physical examination • Laboratory studies • Diagnostic studies	Good to know Essential to perform	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	
9	**Integumentary System** • History • Physical examination • Pathological examination	Good to know Essential to perform	Analyzes the result of various investigations related to integumentary system	Uses advanced health assessment skills to differentiate between variation of	

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				normal and abnormal findings Orders screening and diagnostic tests based on the examination findings	
10	**Musculoskeletal System** • History • Physical examination • Laboratory studies • Diagnostic studies	Good to know Essential to perform	Analyzes the result of various investigations related to musculoskeletal 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	
11	**Reproductive System (Male & Female)** • History • Physical examination • Laboratory studies • Diagnostic studies	Good to know Essential to perform	Analyzes the result of various investigations related to reproductive 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	
12	**Sensory Organs** • History • Physical	Good to know	Analyzes the result of various investigations	Uses advanced health assessment	

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	examination • Laboratory studies • Diagnostic studies - Radiological and imaging studies, endoscopic studies	Essential to perform	related to sensory organs	skills to differentiate between variation of normal and abnormal findings Orders screening and diagnostic tests based on the examination findings	
13	**Assessment of children** • 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 tests based on the examination findings	
14	**Assessment of Older Adults** • History • Physical assessment • Psychological assessment	Good to know Essential to perform	Analyzes the result of various assessment techniquesrelated to older adults	Uses advanced health assessment skills to differentiate between variation of normal and abnormal findings Orders screening and diagnostic tests based on the examination	

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				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

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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	CONTENT OF TOPICS	LEARNING OBJECTIVES (at the end of the session the student should be able to)	TEACHING OBJECTIVES	METHODOLOGY	TIME
1	**Introduction:** • 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	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	• Interactive session with the students regarding methods of physical examination and steps of history taking. • Focus group	4hrs

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		value of history and physical examination.	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.	discussion	
2	**Cardiovascular System** • Cardiac history • Physical examination • Cardiac laboratory • Cardiac diagnostic studies	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	• Seminar on Cardiac Diagnostic studies • Interactive session with students regarding Cardiac laboratory studies • Project based leaning	6hrs
3	**Respiratory System** • History • Physical examination • Respiratory monitoring • Respiratory	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	• Student seminar on Respiratory Diagnostic tests.	6 hrs

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	Diagnostic tests		Respiratory monitoring – Arterial blood gases, pulse oximetry, end-tidal carbon dioxide monitoring, Respiratory Diagnostic tests – Chest radiography, ventilation perfusion scanning, pulmonary angiography, bronchoscopy, thoracentesis, sputum culture, pulmonary function test	• Simulated learning on Respiratory monitoring.	
4	**Nervous System** • General physical examination • Assessment of cognitive function • Assessment of cranial nerve function • Motor assessment • Sensory assessment • Neurodiagnostic studies	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	• Interactive session on assessment of cognitive function and cranial nerve function. Problem based learning	6hrs
5	**Renal System** • History • Physical examination • Assessment of renal function • Assessment of electrolytes	Discuss the history taking and physical examination related to the Renal system Demonstrate the assessment of renal function, electrolyte and	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	• Seminar on Assessment of Renal function Focus group discussion	6hrs

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	and acid base balance • Assessment of fluid balance	acid base balance and fluid balance.	balance.		
6	**Gastrointestinal System** •History •Physical examination •Nutritional assessment •Laboratory studies – Liver function studies, blood parameters, stool test •Diagnostic studies – radiological and imaging studies, endoscopic studies	1. Appreciate the history taking and physical examination related to the Gastrointestinal System 2. Perform the laboratory studies related to Gastrointestinal System 3. Assist the diagnostic studies related to Gastrointestinal System	To teach and discuss about the history taking and physical examination related to the Gastrointestinal System, Laboratory studies – Liver function studies, blood parameters, stool test, Diagnostic studies – radiological and imaging studies, endoscopic studies	• Interactive session on Assessment of gastrointestinal system Simulation Technique on studies related to Gastrointestinal System	4 hrs
7	**Endocrine System** • History • Physical examination, • Laboratory studies • Diagnostic studies	1. Describe the history taking and physical examination related to the Endocrine System 2. Perform the laboratory studiesrelated to Endocrine System 3. Assist diagnostic studies related to Endocrine System	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	• Interactive Session on assessment of endocrine system • Project based learning	4 hrs
8	**Hematological**	1. Describe the	To teach and discuss		

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	System • History • Physical examination • Laboratory studies • Diagnostic studies	history taking and physical examination related to the hematological System 2. Appreciate the laboratory studies and diagnostic studies related to hematological System	about the history taking and physical examination related to hematological System, Laboratory studies - blood parameters, Diagnostic studies – bone marrow aspiration	• Spot group discussion of assessment of hematological system •Simulation technique on diagnostic studies related to hematological System	4 hrs
9	**Integumentary System** • History • Physical examination • Pathological examination	1. Describe the history taking and physical examination related to IntegumentarySystem 2. Review the laboratory studies and diagnostic studies related to Integumentary System	To teach and discuss about the history taking and physical examination related to Integumentary System, the various pathological examination related to the Integumentary System such as tissue examination.	Interactive Session onphysical examination related to Integumentary System Problem based leaning	3hrs
10	**Musculoskeletal System** • History • Physical examination • Laboratory studies • Diagnostic studies	1. Describe the history taking and physical examination related to Musculoskeletal System 2. Explain the laboratory studies and diagnostic studies related to Musculoskeletal System	To teach and discuss about the history taking and physical examination related to Musculoskeletal System such as gait assessment, joint assessment,Laboratory studies – blood parameters (inflammatory enzymes, uric acid), Diagnostic studies - Radiological and imaging studies, endoscopic studies	Seminar on physical examination related to Musculoskeletal System Focus group discussion	6 hrs
11	**Reproductive System (Male & Female)**	1.Describe the history taking and physical	To teach and discuss aboutthe history taking	•Interactive Session	

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	• History • Physical examination • Laboratory studies • Diagnostic studies	examination related to Reproductive System 2. Review the laboratory studies and diagnostic studies related to Reproductive System	and physical examination related to Musculoskeletal System, laboratory studies and diagnostic studies related to the reproductive system such as Pap smear, colposcopy, hysteroscopy, biopsy, semen analysis.	onhistory taking and physical examination related to Reproductive System • Simulation Technique	5 hrs
12	**Sensory Organs** • History • Physical examination • Laboratory studies • Diagnostic studies - Radiological and imaging studies, endoscopic studies	1. Describe the history taking and physical examination related to Sensory Organs 2. Perform the laboratory studiesrelated to Sensory Organs 3. Assist in diagnostic studies related to Sensory Organs	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	1. Discuss the growth and development of children. 2. Demonstrate the nutritional assessment and specific system assessment of children.	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**	1. Describe the history taking and	To teach and discuss about the history taking	Interactive	6hrs

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	• History • Physical assessment • Psychological assessment	physical examination of older adults 2. Enumerate the various psychological assessment of older adults	and physical examination of older adults, various psychological assessment of older adults.	sessions related to the psychological assessment of older adults	

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- 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: 2nd 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

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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 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

Teaching strategies

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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

 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

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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

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 Fluids 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

 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

 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,

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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

- Family 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

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	• Future challenges in critical care nursing	
2	**Concept of Holistic care applied to critical care nursing practice** • Application of nursing process in the care of critically ill • Admission and progress in ICU- An overall view • Overview of ICU Management	5hrs
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	10hrs
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/hypo-thermia • Liberation from life support (Weaning) • Glycemic control, care of patient with glycemic imbalances	14hrs
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	8hrs
6	**Psychosocial and spiritual alterations: Assessment and management** 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	8hrs

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

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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

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- 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)

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b. 8 hours duty with one day Off in a week and on call duty one per weekII 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 Edcuation.
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.

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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

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	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 • Future challenges in critical care nursing		critical care nursing		nursing
2	**Concept of Holistic care applied to critical care nursing practice** • Application of nursing process in the care of critically ill • Admission and progress in ICU- An overall view • Overview of ICU Management	Essential to perform		Applies nursing process in care of critically ill patients	
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	Essential to perform		Uses invasive and noninvasive technology and interventions to assess, monitor and promote physiologic stability	
4	**Advanced Concepts and Principles of Critical Care** Principles of cardio-pulmonary-	Essential to perform		Applies advanced concepts of	

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	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			critical care nursing based on sound knowledge of these concepts Performs ACLS and BLS on 2 patients	
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	Good to know Essential toperform	Develops knowledge in theories and types of pain	Performs pain assessment on 5 patients	Develops understanding in the management of pain
6	**Psychosocial and spiritual alterations: Assessment and management** 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	Good to know Essential to perform	Develops knowledge in psychosocial and spiritual alterations	Demonstrate counselling and communication	

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	• Care of family of the critically ill • Counseling and communication				
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	Essential to perform		Uses applicable communication, counseling, advocacy and interpersonal skills to initiate , develop and discontinue therapeutic relationships	
8	**Nutrition Alterations and Management in critical care** Nutrient metabolism and alterations • Assessing nutritional status • Nutrition support • Nutrition and systemic alterations • Care of patient on enteral and parentral nutrition	Essential to perform		Provides care for 5 patients on enteral and parenteral nutrition	
9	**Sleep alterations and management** Normal 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	
10	**Infection control in critical care** Nosocomial infection in	Essential to perform		Practices principles of	

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	intensive care unit • Disinfection, Sterilization, • Standard safety measures, • Prophylaxis for staff • Antimicrobial therapy- review			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	
12	**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	
13	**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

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- 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	TIME
1	Introduction to Critical Care Nursing • Introduction • Review of anatomy and physiology of vital organs • Historical review-Progressive patient care(PPC) • Concepts of critical care nursing • Principles of critical	Describe the anatomy and physiology of vital organs Appreciate the concepts and principles of critical care nursing Discuss the scope	To teach and discuss about the anatomy and physiology of vital organs (Brain, Spinal Cord, Lungs, Heart, Kidney, Liver, Pancreas, Thyroid, Adrenal and Pituitary gland), Historical review-Progressive patient care(PPC), Concepts of critical care nursing,	Interactive session with the students regarding anatomy and physiology of vital organs Focus group discussion on concepts and	10 hrs

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	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.	
2	**Concept of Holistic care applied to critical care nursing practice** -Application of nursing process in the care of critically ill -Admission and progress in ICU- 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	-To teach and discuss about Application of nursing process in the care of critically ill, Admission and progress in ICU, Overview of ICU Management (Ensure adequate tissue oxygenation, Maintain chemical environment, Maintain temperature, Organ protection, Nutritional support, Infection control, Physiotherapy and rehabilitation, Family visiting hours), Restraints in critical care – physical, chemical and alternatives to restraints, Death in	• Interactive session with students regarding ICU management • Case studies	5 hrs

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			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	To teach and discuss about Assessment of the critically ill (General assessment, Respiratory assessment, Cardiac assessment, Renal assessment, Neurological assessment, Gastrointestinal assessment, Endocrine assessment, Musculoskeletal assessment, Integumentary assessment), Monitoring of the critically ill (Arterial blood gas (ABG), Capnography, Hemodynamics, Electrocardiography (ECG), Glasgow Coma Scale (GCS), Richmond agitation sedation scale, Pain score, Braden score),	-Simulated learning onassessment, monitoring and evaluation of the critically ill. Role play	10 hrs

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			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	To teach and discuss about the Principles of cardio-pulmonary-brain resuscitation, Emergencies in critical care : CPR, BLS, ACLS, Airway management, Oxygenation and oximetry, care of patient with oxygen delivery devices, Ventilation and ventilator support (including humidification and inhaled drug therapy), care of patient with invasive and non invasive ventilation, Circulation and perfusion (including hemodynamic evaluation and waveform	• Simulated learning on cardio-pulmonary brain resuscitation. • Seminar on emergencies in critical care • Role play	14 hrs

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			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/hypo-thermia, Liberation from life support (Weaning), Glycemic control, care of patient with glycemic imbalances		
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	1. Describe about pain, its types, theories and physiology 2. Enumerate the various methods for pain management	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)Nonpharmacological management Such as Transcutaneous electrical nerve stimulation(TENS)	• Focus group discussion on Pain management Integrated teaching	8 hrs
6	**Psychosocial and spiritual alterations: Assessment and management** Stress and psychoneuroimmunology • Post traumatic stress reaction	1. Describe about stress and pychoimmunology	To teach and discuss aboutStress and psychoneuroimmunology, Post traumatic stress reaction, ICU Psychosis, Anxiety, Agitation,	• Interactive session on pychosocial alterations and its	8 hrs

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	• 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	2. 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	1. Describe about family and adult education. 2. Enumerate the factors affecting teaching and learning process 3. Summarize about the various counseling techniques.	To teach and discuss about 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	• Interactive session on Counseling techniques • Role play	4 hrs
8	**Nutrition Alterations and Management in critical care** Nutrient metabolism and alterations • Assessing nutritional	1. Describe about the nutrition and systemic alterations 2. Demonstrate	To teach and discuss about nutrient metabolism and alterations, Assessing nutritional status, Nutrition support,	• Seminar on nutrition and systemic alterations	5hrs

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	status • Nutrition support • Nutrition and systemic alterations • Care of patient on enteral and parentral nutrition	the care of patient on enteral and parentral nutrition	Nutrition and systemic alterations, Care of patient on enteral and parentral nutrition	•Problem based learning	
9	**Sleep alterations and management** Normal human sleep • Sleep pattern disturbance • Sleep apnea syndrome	1. Describe the normal human sleep pattern 2. 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 therapy-review	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	• Role play and video films • Fish bowl technique • Interactiv e sessions	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	

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	• Legal issues • Ethical issues • Managing Scarce resource in critical care	ethical issues in critical care 2. Enumerate the role of nurse in ethical and legal issues	giving raise to civil litigation, Related laws in India, Medical futility, Administrative law: Professional regulation,Tort law: 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) Nurses' Role	• Interactive sessions on managing Scarce resource in critical care	6hrs
12	**Quality assurance** Design of ICU/CCU • assurance models applicable to ICUs • Standards, Protocols, Policies, Procedures • Nursing audit relevant to critical care • Staffing	1. Describe about the assurance model related to ICUs **2.** Appreciate nursing audit relevant to critical care	To teach and discuss about Design of ICU/CCU, assurance models applicable to ICUs, Standards, Protocols, Policies, Procedures, Infection control policies and protocols, Standard safety measures, Nursing audit relevant to critical	Seminar on assurance model related to ICUs Role play	8 hrs

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

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1.	**Introduction** • Review of anatomy and physiology of vital organs • Review of assessment and monitoring of the critically ill	6
2.	**Cardiovascular alterations** • 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	16
3.	**Pulmonary alterations** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Pulmonary conditions requiring critical care management - Status asthmaticus	15

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	- 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 physiotherapy and postural drainage - Chest tube insertion and care of patient with chest drainage • Recent advances and development	
4.	**Neurological alterations** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Neurological conditions requiring critical care management - Cerebro vascular disease and cerebro vascular accident - Encephalopathy - Gillian Bare syndrome and 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	15
5.	**Nephrology alterations** • Review of Clinical assessment, patho-physiology, and pharmacology • Special diagnostic studies	15

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	• Nephrology conditions requiring critical care management - Acute renal failure - Chronic renal failure - Acute tubular necrosis - Bladder trauma • Nephrology therapeutic management - Renal Replacement therapy: Dialysis - Renal transplant • Recent advances and development	
6.	**Gastrointestinal alterations** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Gastrointestinalconditions requiring critical care management - Acute GI bleeding - Hepatic failure - Acute pancreatitis - Abdominal injury - Hepatic encephalopathy - Acute intestinal obstruction - Perforative peritonitis • Gastrointestinal therapeutic management - Gastrointestinal surgeries - Liver transplant • Recent advances and development	12
7.	**Endocrine alterations** • 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 • Recent advances and development	12
8.	**Class tests**	5
	TOTAL	**96 hrs**

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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 andclinical 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 PublishingCompany

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

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	management - Heart block and conduction disturbances - Coronary heart disease - Myocardial infarction - Pulmonary hypertension - Valvular heart disease		of cardiovascular conditions	anticipatory guidance, counselling and management of cardiovascular conditions	
	- Atherosclerotic disease of aorta - Peripheral artery disease - Cardiomypathy - Heart failure - Deep vein thrombosis - Congenital heart disease(cyanotic and acyanotic)			Uses invasive and noninvasive technology and interventions to assess, monitor patients with cardiovascular disorders	
	• 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				

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	devices(VAD) - Extra corporeal membrane oxygenation(ECMO) • Recent advances and development				
3	**Pulmonary alterations** • 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 - Long term mechanical ventilator dependence • 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	Good to know Essential to perform	Develop knowledge in Clinical assessment, pathophysiology, and pharmacology of pulmonary conditions	Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of pulmonary conditions Uses invasive and non invasive technology and interventions to assess, monitor patients with pulmonary alterations	Appreciates recent advancement and development

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4	**Neurological alterations** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Neurological conditions requiring critical care management - Cerebro vascular disease and cerebro vascular accident - Encephalopathy - Gillian Bare syndrome and 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	Good to know Essential to perform	Develop knowledge in Clinical assessment, pathophysiology, and pharmacology of neurological conditions	Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of neurological conditions Uses invasive and non invasive technology and interventions to assess, monitor patients with neurological disorders	Appreciates recent advancement and development
5	**Nephrology alterations** • Review of Clinical assessment, patho-physiology, and pharmacology • Special diagnostic studies • Nephrology conditions requiring critical care management - Acute renal failure - Chronic renal failure - Acute tubular necrosis - Bladder trauma	Good to know Essential to perform	Develop knowledge in Clinical assessment, pathophysiology, and pharmacology of nephrological conditions	Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of nephrological	Appreciates recent advancement and development

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

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	- Neuroendocrinology of stress and critical illness - Diabetic ketoacidosis, Hyperosmolar non ketotic coma - hypoglycemia		alterations	guidance, counselling and management of Endocrine alterations	
	- Thyroid storm - Myxedema coma - Adrenal crisis - SIADH • Endocrine therapeutic management • Recent advances and development			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

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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	**Introduction** • Review of anatomy and physiology of vital organs • Review of assessment and monitoring of the critically ill	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

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2	**Cardiovascular alterations** • Review of Clinical assessment, patho-physiology, 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 - Cardiomypathy - 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	Summarize various cardiovascular problems and its clinical assessment, pathophysiology, diagnostic studies, management and role of nurse	To teach and discuss about various cardiovascular problems and its clinical assessment, pathophysiology, diagnostic studies and its management	Interactive session with students regarding cardiovascular problems Simulation technique Spot group discussion	16 hrs

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	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** • 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 - Atlectasis - Longterm mechanical ventilator dependence • Pulmonary therapeutic management - Thoracic surgery	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, pathophysiology, diagnostic studies and its management	Student seminar on pulmonary alterations Simulation technique Spot group discussion	15 hrs

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	- 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** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Neurological conditions requiring critical care management - Cerebro vascular disease and cerebro vascular accident - Encephalopathy - Gillian Bare syndrome and 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	Summarize various Neurological alterations and its clinical assessment, pathophysiology, diagnostic studies, management and role of nurse	To teach and discuss about various Neurological alterations and its clinical assessment, pathophysiology, diagnostic studies and its management	Seminar on neurological conditions in critical care Interactive sessions Spot group discussions	15 hrs
5	**Nephrology alterations** • Review of Clinical	Explain about various	To teach and discuss about	Simulated learning	15 hrs

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

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7	**Endocrine alterations** •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 • Recent advances and development	Elaborate various Endocrine alterations and its clinical assessment, pathophysiology, diagnostic studies, management and role of nurse	To teach and discuss about various endocrine alterations and its clinical assessment, pathophysiology, diagnostic studies and its management	Seminar on endocrine alterations Fish bowl technique	12 hrs
8	**Class tests**				5 hrs

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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** • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Hematology conditions requiring critical care management • Hematology therapeutic management • Recent advances and development	12 hrs
7.	**Skin alterations** • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies • Conditions requiring critical care management	8 hrs

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

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	• Challenges in medication use • Hospital associated risk factors for older adults • Long term complications of critical car	
13.	**Critical Care in Peri anesthetic period** • Selection of anesthesia • General anesthesia • Anesthetic agents • Peri anesthesia assessment and care • Post anesthesia problems	10 hrs
14.	**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 – Suicide, crisis intervention	10
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 Edcuation.
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

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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
1	**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	Good to know Essential to perform	Develop knowledge in Clinical assessment, pathophysiology, and pharmacology of haematological conditions	Provides nursing care to 5 patients related to health 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	Appreciates recent advancement and development
2	**Skin alterations** • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies • Conditions requiring critical care management	Good to know Essential to perform	Develops knowledge in Clinical assessment, pathophysiology, and pharmacology of	Provides nursing care to 5 patients related to health protection, disease prevention,	Appreciates recent advancement and development

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	• 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** • Trauma • Sepsis • Shock • Multiple Organ Dysfunction • Systemic inflammatory response syndrome • Anaphylaxis • DIC • Other injuries (Heat, Electrical, Near Hanging, Near drowning) • Envenomation • Drug overdose • Poisoning	Essential to perform		Provides nursing care to 5 patients related to health protection, disease prevention, anticipatory guidance, counselling and management of Multi system alterations	

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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 understanding of Physiological changes in pregnancy
6	**Critical care in children** • Prominent anatomical and physiological differences and implications • Conditions requiring critical care • Selected pediatric challenges • Interaction with children and families	Essential to perform		Demonstrates skill in handling equipments such as incubators and warmers	
7	**Critical Care in Older Adult** • Normal psycho biological characteristics of aging • Physical challenges • Challenges in medication use • Hospital associated risk factors for older adults • Long term complications of critical care	Good to know	Identifies long term complications of critical care		Develops understanding in physical challenges and challenges in medication use of older

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					adults
8	**Critical Care in Peri anesthetic period** • Selection of anesthesia • General anesthesia • Anesthetic agents • Peri anesthesia assessment and care • Post anesthesia problems	Essential to perform		Monitors 5 patients under anesthesia Assists with planned intubations 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 • Psychiatric emergencies – Suicide, crisis intervention	Essential to perform Desirable to perform		Demonstrates skill in disaster management Manages ENT emergencies and psychiatric 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

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

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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, pathophysiology, and pharmacology • Special diagnostic studies • Hematology conditions requiring critical care management • Hematology therapeutic management • Recent advances and development	• Describe the special diagnostic studies in hematological alterations. • Elaborate Hematology conditions requiring critical care management • DescribeHematology therapeutic management. • Appreciate recent advances and developmentinhematological alterations.	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

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			transfusion, bone marrow transplantation. Recent advances and development.		
2	**Skin alterations** • Review of Clinicalassessment, pathophysiology, and pharmacology • Special diagnostic studies • Conditions requiring critical care management • Therapeutic management • Recent advances and development	• Discuss on Review of Clinical assessment, pathophysiology, and pharmacology of skin alterations. • Describe the special diagnostic studies in skin alterations • Summarize the conditions requiring critical care management. • Review the conditions requiring therapeutic management. • Appreciate recent advances and development in the field of skin.	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

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	• Systemic inflammatory response syndrome • Anaphylaxis • DIC • Other injuries (Heat, Electrical, Near Hanging, Near drowning) • Envenomation • Drug overdose • Poisoning		response syndrome, anaphylaxis, DIC, Other injuries (Heat, Electrical, Near Hanging, Near drowning), Envenomation, Drug overdose, Poisoning	system alterations Interactive sessions	
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	• Role play and video film on various scenarios and their management. • Problem based learning.	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

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			Obstructed labor, Ruptured uterus, PPH, Puperal sepsis, Obstetrical shock, HELLP syndrome, DIC, Amniotic fluid embolism, ARDS, Trauma		
6	**Critical care in children** • Prominent anatomical and physiological differences and implications • Conditions requiring critical care • Selected pediatric challenges • Interaction with children and families	1. Elaborate the conditions requiring critical care in children. 2. Summarize the various management options available for children in critical care. 3. Demonstrate communication with children.	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	• Focus group discussion • Simulated learning • Role play and video film on various scenarios and their management. • Problem based learning.	10 hrs

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

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			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 anesthetic period** • Selection of anesthesia • General anesthesia • Anesthetic agents • Peri anesthesia assessment and care • Post anesthesia problems	1. Enlist the selection criteria for anesthesia 2. Enlist the types of anesthesia and their characteristics. 3. Demonstrate the pre-anesthetic assessment and care 4. Explain the problems arising post anesthesia 5. Discuss on effects	To each and discuss onCritical Care in Peri anesthetic period, Selection of anesthesia, General anesthesia, Anesthetic agents, Peri anesthesia assessment and care, Post anesthesia problems and emergencies requiring critical care, Respiratory-Airway obstruction,	• Spot group discussion on peri anesthetic period. • Simulated learning • Role play and video film on various scenarios	10 hrs

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		of cardiovascular system by anesthesia 6. List the side effects of anesthesia	Laryngeal edema, Laryngospasm, Bronchospasm, Noncardiogenic pulmonary edema, Aspiration, Hypoxia, Hypoventilation, Cardiovascular – Effects of anesthesia on cardiac function, Myocardial dysfunction,Dysrhythmias, postoperative hypertension, post-operativehypotension, Thermoregulatory, Hypothermia, shivering, hyperthermia, malignant hyperthermia, Neurology- Delayed emergence, emergence delirium, Nausea and vomiting	and their management. • Problem based learning.	
9	**Other special situations in critical care** • Rapid response teams and transport of the critically ill • Disaster management • Ophthalmic emergencies – Eye	1. Elaborate on rapid response teams 2. Brief on disaster management 3. Review ENT emergencies 4. Discuss on psychiatric emergencies	To teach and discuss on Rapid response teams and transport of the critically ill, Disaster management, Ophthalmic emergencies – Eye injuries, glaucoma,	Seminar on disaster management Project based learning	10

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	injuries, glaucoma, retinal detachment • ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions • Psychiatric emergencies – Suicide, crisis intervention		retinal detachment, ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions, Psychiatric emergencies – Suicide, crisis intervention		
10	**Class Test**				5 hrs

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 Edcuation.
- 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.

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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 Marks	Practical Exam.		Total Marks	Duration of Paper (TH/PR) (Hours)
		Internal	External		Internal	External		
	Theoretical Basis for Advanced Practice Nursing	50		50	-	-	-	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

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

2nd Year

Paper Code	Paper/ Subject	Theory Examination		Total Marks	Practical Examination		Total Marks	Duration of Exam. (TH/PR) (Hours)
		Internal	External		Internal	External		
	Foundations of Critical Care Nursing Practice	30	70	100	100	100	200	3/3
	Critical Care Nursing I	30	70	100	100	100	200	3/3
	Critical Care Nursing II	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

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