

M.Sc., Nurse Practitioner in Critical Care



RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES KARNATAKA
4th T BLOCK, JAYANAGAR, BANGALORE 560041



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Ref: ACA/DCD/NURSING/PG/NPCC/13/2019-20

Date: 06/02/2020

NOTIFICATION

Sub: Revised Ordinance pertaining to Regulation and Curriculum of M.Sc. Nurse Practitioner in Critical Care.

- Ref:** 1) Proceedings of the 128th syndicate meeting held on 23/08/2017
2) F.No.22-10/NP/2017-INC, Dated : 29/08/2018
3) Minutes of BOS Nursing PG held on 19/12/2019
4) Proceedings of CAC meeting held on 26/12/2019
5) Proceedings of 147th Syndicate meeting held 02/01/2020

In exercise of the powers vested under Section 35 of RGUHS Act, 1994, the Revised Ordinance pertaining to Regulation and the curriculum of M.Sc. Nurse Practitioner in Critical Care is notified herewith as per Annexure.

The above Regulation shall be applicable to the students admitted to the said Course from the academic year 2020 onwards.

By Order,

Sd/-

REGISTRAR

To

The Principals of all affiliated Nursing Colleges conducting PG Nursing of RGUHS, Bangalore.

Copy to :

1. The Principal Secretary to Governor, Raj Bhavan, Bangalore - 560001
2. The Principal Secretary Medical Education, Health & Family Welfare Dept., M S Building, Dr.B.R. Ambedkar Veedhi, Bangalore - 01
3. The Secretary, Indian Nursing Council, Newdelhi
4. The Secretary, Karnataka Nursing Council, Bangalore
5. PA to Vice - Chancellor/PA to Registrar/Registrar (Eva.)/Finance Officer, Rajiv Gandhi University Health Sciences, Bangalore
6. All Officers of the University Examination Branch/ Academic Section.
7. Guard File / Office copy.

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 nursing practice. The need for significant expansion in public and private health sector is recognized by the government. Specialist nurses with advanced skills are required to support specialized and super specialized healthcare services. Recognizing this need, RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES has decided to implement M.Sc., Nurse Practitioner in Critical Care, **an academic** residency program to meet the challenges and demands of tertiary care services in order to provide quality care to critically ill patients of all age groups and families.

Nurse practitioners in critical care / acute care, oncology, emergency care, neurology, cardiovascular care, anesthesia and other specialties can be prepared to function in tertiary care settings. Rigorous educational training will enable them to collaboratively manage critical illnesses both for prevention and promotion of health. A curricular structure / framework is proposed by INC towards preparation of Nurse Practitioner in Critical Care (NPCC) at Masters Level. The special feature of this program is that it is a clinical residency program emphasizing a strong clinical component with 15% of theoretical instruction and 85% of practicum. Competency based training is the major approach and Nurse Practitioner education is based on competencies adapted from International Council of Nurses (ICN, 2005), and NONPF competencies (2012).

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INTRODUCTION

Critical Care Nurse Practitioner Program is intended to prepare registered BSc Nursing Graduates, to provide advanced nursing care to the patients, who are critically ill. The nursing care is focused on stabilizing patient's condition, minimizing acute complications and maximizing restoration of health. These Nursing Practitioners are required to practice in critical care units of Tertiary Health care centers. The program consists of various subjects of study that are based on strong scientific foundations including evidenced based practice and the management of complex health systems. These are built upon the theoretical and practice competencies of BSc trained nurses. On completion of the program and registration with respective state council they are permitted to assess and, participate and work under the supervision of the doctors. They can practice in ICUs of Tertiary Care Hospitals based on institutional protocols. The Nurse Practitioners in Critical Care when exercising this authority, they are accountable for the competencies in

- a) Patient selection/admission into ICU
- b) Problem identification through appropriate assessment
- c) Administration of medication or Non invasive devices or therapies
- d) Patients' education for use of therapeutics
- e) Knowledge of interactions of therapeutics, if any
- f) Evaluation of outcomes
- g) Recognition of complications and untoward reactions.

The Nurse Practitioner in critical care is prepared and qualified to assume responsibility and accountability for the care of critically ill patients under his/ her care.

The said post graduate degree will be registered as an additional qualification by the State Nursing Council.

I. PROGRAM DESCRIPTION

The M.Sc in Nurse Practitioner in Critical Care is a Nursing Academic Residency program with a main focus on Competency based training. The duration is of two years with the curriculum consisting of theory that includes core courses, advanced practice courses and clinical courses besides clinical practicum which is a major component.

II. AIM

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 Nurse Practitioner in critical care.

III. OBJECTIVES

On completion of the program, the NP will be able to

1. Assume responsibility and accountability to provide competent care to critically ill patients and appropriate family care in tertiary care centers.
2. Demonstrate clinical competence / expertise in providing critical care which includes diagnostic reasoning, complex monitoring and therapies.
3. Apply theoretical, patho-physiological and pharmacological principles and evidence base in implementing therapies / interventions in critical care.
4. Identify the critical conditions using differential diagnosis and carry out treatment/interventions to stabilize as per the Institutional protocol and restore patient's health and minimize or manage complications 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.
6. On completion of the programme, they are registered with State Nursing Council as additional qualification and practice critical care nursing in ICU settings of tertiary hospitals only.

IV. MINIMUM REQUIREMENTS TO START THE NP CRITICAL CARE PROGRAM

The institution must accept the accountability for the Nursing Practitioner program and its students and offer the program in congruence with the RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCE standards. It must fulfill the following requirements.

1. Hospital

The hospital should be a own tertiary care center, with a minimum of 200 beds. Hospitals on MOU/Agreement /lease are not considered for granting this course affiliation. Hospital should be under the registered name of the trust and it should have gotten all the statutory permission from the Government of Karnataka.

2. ICU Beds

The hospital should have a minimum of 4 ICUs namely Medical ICU, Surgical ICU, Cardio/cardiothoracic ICU & NICU or PICU. Each ICU shall have at least 5 beds and Emergency care unit with at least 20 beds, thus constituting a total of 40 beds.

3. ICU staffing

- a. Every ICU should have a charge nurse with BSc or MSc qualification
- b. The nurse patient ratio should be 1:1 for every shift for ventilated patients
- c. For the rest of ICU beds the nurse patient ratio should be 1:2 for every shift
- d. Provision of additional 45% staff towards leave reserve
- e. Doctor patient ratio can be 1:5

4. Faculty

a. Teaching faculty:

- Professor/Associate professor **OR** Faculty with 8 years of PG Teaching Experience after M.Sc - **1 (shall be the Guide)**
- Assistant Professor - **1** (Teaching experience- 3 years post BSc)
- Ratio for Guide : Student - 1:5

Note: Faculty who is a Guide for NPCC cannot be guide for another PG Programme.
Faculty involved in NPCC should have a dual role

b. Nursing Preceptors : The Nursing preceptors must be a full time qualified GNM with 6 years of experience in critical care nursing **OR** BSc with 2 years of experience in critical care nursing **OR** MSc(Specialty-Medical Surgical Nursing/Pediatric Nursing) with one year critical care nursing experience.

- Ratio for Nursing Preceptor : Student - 1:10

c. Medical Preceptors : The Medical Preceptors must be MD/MS/Qualified Intensivist.

d. The Co-Guide for NPCC programme can be a Medical preceptor.

e. Ratio for Medical Preceptor : Student - 1:10

5. Physical and learning resources at hospital/college

- a. One classroom/conference room at the Hospital.
- b. Skill lab for simulated learning (hospital/college).
- c. Library and computer facilities with access to online journals.
- d. E-Learning facilities.

6. List of equipment for ICU (enclosed) Appendix-1

7. Latest edition of critical care books and international journals and Helinet must be available.

8. Student Recruitment/Admission Requirements

- a. Applicants must possess a Registered B.Sc nursing Degree with a minimum of one year clinical experience in ICU prior to enrollment.
 - b. Must have undergone the BSc-Nursing in an institution recognized by the Indian Nursing Council and Karnataka Nursing Council.
 - c. Must have scored not less than 55% aggregate marks in the BSc- Nursing Course.
 - d. Selection must be based on the order of merit of an entrance examination and interview held by the competent authority or University
- Number of candidates: 1 candidate for 5 ICU beds,

V. EXAMINATION REGULATIONS

- **Eligibility for appearing for the examination**

- **Attendance :** Theory – 80% of attendance in each academic year and 85% of attendance in Practicum in each academic year is essential before being eligible for the university examination
- Candidate who fails in any two subjects, shall be permitted to continue the studies into the second year. Those who are failed in more than two subjects in the first year are not promoted to the second year.
- Before being eligible to appear for the final year university examination, students should have cleared all the subjects of the first year at least 6 months prior to the final year examination.
- Before being eligible to appear for the final year university examination, the dissertation of the students should have been submitted to the university 6 months prior to the final year examination

- **Classification of results**

- Pass: 50% in theory and Clinical Practicum individually
- Second Division: 50-59%
- First Division: 60-74%

- Distinction: 75% and above

For declaration of rank, aggregate of 2 years marks shall be considered and in the first year results, no ranks shall be declared.

If a candidate fails in theory or practical, he/she has to reappear for both theory and practical in the respective subject.

Maximum number of attempts per subject is three inclusive of the first attempt. The maximum period to complete the course successfully shall not exceed 4 years.

- **Practical examination :**

OSCE type of examination will be followed including viva (oral examination)

Maximum number of students per day = 5 students

Examination should be held in hospital only

Examined by two internal and one external examiner.

There shall be two internal and one external examiner for practical exam.

Internal examiner appointment: Professor/Associate Professor as stipulated in the section 4 above, who have guided at least one NPCC student and has a eligible guide letter issued by the RGUHS.

The second internal should be a Medical preceptor.

The external examiner: Should be from a different State/University (M.Sc with eight years Post Graduate teaching experience **and only till such time the qualified and eligible teachers are available as per the clause 4**

- ***Dissertation***

Submission of the synopsis: By 6 months in first year or as per the calendar of events notified by the university from time to time

Submission of the dissertation: 6 months before completion of second year.

- Research guides: Guide – Professor/Associate professor **OR** Faculty with 8 years of PG Teaching Experience after M.Sc.,
- Co guide: Medical preceptor
- Guide student ratio- 1:5
- There should be a separate research/Scientific committee in the college/hospital to guide and oversee the progress of the research (minimum of 5 members with principal or CNO-MScN)
- Ethical clearance should be obtained by the Institution ethics committee

VI. ASSESSMENT - Assessment of the Progress

- 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

ASSESSMENT GUIDELINES :

EXAMPLE -DETAILED PLAN I YEAR

I. HEALTH ASSESSMENT

1. INTERNAL PRACTICAL exam- OSCE (Marks allotted- 25 marks)

Stations (5)	CORE COMPETENCY DOMAINS (DURATION & MARKS)			
	Health assessment (Focused history and physical examination) <u>Adult</u>	Health assessment (Focused history and physical examination) <u>Pediatric</u>	Interpretation of history/physical exam findings and lab results & Identification of health diagnosis	Monitoring clinical parameters (Competencies)
I	10 minutes (5 marks)			
II		10 minutes (5marks)		
III			10 minutes (5marks)	
IV				10 minutes (5marks)
V	Rest Station (5/10 minutes)			

OSCE – 20 marks (4x5)

ORAL EXAMINATION – 5 marks

TOTAL – 25 marks

{End of posting can follow the same as above having 5 stations with 5 minute duration each station (marks- $4 \times 4 = 16$, oral exam-4 marks, total= $20/2=10$ marks)}

2. EXTERNAL OSCE (Marks allotted-50)

Stations (10)	CORE COMPETENCY DOMAINS (TIME DURATION in minutes & MARKS)							
	Health assessment (History taking)		Health assessment (Physical examination)		Interpretation of findings and health diagnosis		Monitoring clinical parameters (Procedural competencies)	
	Focused history (Adult)	Focused history (Pediatric)	Physical examination (Adult)	Physical examination (Pediatric)	History & Physical exam	Diagnostic tests	1	2
I	10 min (5 marks)							
II		10 min(5 marks)						
III			10 min (5marks)					
IV				10 min (5marks)				
V	Rest Station 1 (5/10minutes)							
VI					10 min (5marks)			
VII						10 min (5marks)		
VIII							10 min (5marks)	
IX								10 min (5marks)
X	Rest station 2 (5/10 minutes)							

On completion of procedural competencies in log book and clinical requirements, the NP student is qualified to appear for final practical examination

OSCE-40

ORAL EXAMINATION – 10 marks

TOTAL – 50 marks

II YEAR

I. FOUNDATIONS OF CRITICAL CARE NURSING

1. INTERNAL PRACTICAL OSCE (Marks allotted- 50 marks)

Stations (5)	CORE COMPETENCY DOMAINS (DURATION in minutes & MARKS)			
	Health assessment (Focused history and physical examination) and interpretation	Monitoring competencies (Invasive and noninvasive)	Therapeutic interventions- (Emergency procedural competencies) Including drug administration	Family Education and counseling
I	10 minutes (10marks)			
II		10 minutes (10marks)		
III			10 minutes (10marks)	
IV				10 minutes (10marks)
V	Rest Station (5/10 minutes)			

OSCE- 40 marks (4x10)

ORAL EXAMINATION – 10 marks

TOTAL – 50 marks

{End of posting can follow the same as above having 5 stations with 5 minute duration each station (marks- 4x4=16, oral exam-4 marks, total=20/2=10 marks)}

2. EXTERNAL PRACTICAL EXAMINATION OSCE (Marks allotted-100)

Stations (10)	CORE COMPETENCY DOMAINS (TIME DURATION in minutes & MARKS)							
	Health assessment (Focused history and physical examination) and interpretation -2		Monitoring competencies (Invasive and noninvasive) -2		Development of Plan of care	Family education and counseling	Therapeutic interventions (emergency procedural competencies) Including drug administration-2	
	1 (adult)	1 (Pediatric)	1	1			1	1
I	10 min (10 marks)							
II		10 min (10 marks)						
III			10 min (10 marks)					
IV				10 min (10marks)				
V	Rest Station 1 (5/10minutes)							
VI					10 min (10marks)			
VII						10 min (10marks)		
VIII							10 min (10marks)	
IX								10 min (10marks)
X	Rest station 2 (5/10 minutes)							

On completion of procedural competencies in log book and clinical requirements, the NP student is qualified to appear for final practical examination

OSCE-80

ORAL EXAMINATION – 20 marks

TOTAL – 100 marks

II. CRITICAL CARE NURSING I

1. INTERNAL OSCE (Marks allotted- 50 marks)

Stations (5)	CORE COMPETENCY DOMAINS (DURATION in minutes & MARKS)			
	Health assessment (Focused history and physical examination) and interpretation	Monitoring competencies (Invasive and noninvasive)	Development of care plan/care pathway	Therapeutic interventions- (Emergency procedural competencies) Including drug administration
I	10 minutes (10marks)			
II		10 minutes (10marks)		
III			10 minutes (10marks)	
IV				10 minutes (10marks)
V	Rest Station (5/10 minutes)			

OSCE- 40 marks (4x10)

ORAL EXAMINATION – 10 marks

TOTAL– 50 marks

{End of posting can follow the same as above having 5 stations with 5 minute duration each station (marks- 4x4=16, oral exam-4 marks, total=20/2=10 marks)}

2. EXTERNAL PRACTICAL EXAMINATION OSCE (Marks allotted-100)

Stations (10)	CORE COMPETENCY DOMAINS (TIME DURATION in minutes & MARKS)							
	Health assessment (Focused history and physical examination) and interpretation adult and pediatric-2		Monitoring competencies (Invasive and noninvasive)	Development of Plan of care/care pathway	Family education and counseling	Drug administration	Therapeutic interventions (emergency procedural competencies)-2	
	1(adult)	1(Pediatric)					1	1
I	10 min (5 marks)							
II		10 min (5 marks)						
III			10 min (5marks)					
IV				10 min (5marks)				
V	Rest Station 1 (5/10minutes)							
VI					10 min (5marks)			
VII						10 min (5marks)		
VIII							10 min (5marks)	
IX								10 min (5marks)
X	Rest station 2 (5/10 minutes)							

Completion of Procedural competencies –Qualifying bench mark to appear for final practical examination

OSCE-80

ORAL EXAMINATION – 20 marks

TOTAL – 100 marks

III. CRITICAL CARE NURSING II

1. INTERNAL PRACTICAL OSCE (Marks allotted- 50 marks)

Stations (5)	CORE COMPETENCY DOMAINS (DURATION in minutes & MARKS)			
	Health assessment (Focused history and physical examination) and interpretation	Monitoring competencies (Invasive and noninvasive)	Development of care plan/care pathway	Therapeutic interventions- (Emergency procedural competencies) Including drug administration
I	10 minutes (10marks)			
II		10 minutes (10marks)		
III			10 minutes (10marks)	
IV				10 minutes (10marks)
V	Rest Station (5/10 minutes)			

OSCE- 40 marks (4x10)

ORAL EXAMINATION – 10 marks INTERNAL

TOTAL PRACTICAL – 50 marks

{End of posting can follow the same as above having 5 stations with 5 minute duration each station and one rest station(marks- 4x4=16, oral exam-4 marks, total=20/2=10 marks)}

2. EXTERNAL PRACTICAL EXAMINATION OSCE (Marks allotted-)

Stations (10)	CORE COMPETENCY DOMAINS (TIME DURATION in minutes & MARKS)							
	Clinical assessment (history, physical exam & diagnostic tests) and interpretation-2		Monitoring competencies (Invasive and noninvasive)	Development of Plan of care/care pathway	Family education and counseling	Drug administration	Therapeutic interventions (critical care competencies)-2	
	1(Adult)	1(Pediatric)					1	1
I	10 min (5 marks)							
II		10 min (5 marks)						
III			10 min (5marks)					
IV				10 min (5marks)				
V	Rest Station 1 (5/10minutes)							
VI					10 min (5marks)			
VII						10 min (5marks)		
VIII							10 min (5marks)	
IX								10 min (5marks)
X	Rest station 2 (5/10 minutes)							

On Completion of Procedural competencies, the NP student is qualified to appear for final practical examination

OSCE-80

ORAL EXAMINATION – 20 marks

TOTAL – 100 marks

Scheme of Final Examination with Maximum Marks Distribution

S. NO	Title	Theory %			Practical %		
		Hours	Internal	External	Hours	Internal	External
I Year							
1	I Year Core Courses Theoretical Basis for Advanced Practice Nursing	3 hrs	50				
2	Research Application and Evidence Based Practice in Critical Care	3 hrs	30	70			
3	Advanced skills in Leadership, Management and Teaching Skills	3 hrs	30	70			
4	Advanced Practice Courses Advanced Pathophysiology & Advanced Pharmacology relevant to Critical Care	3 hrs	30	70			
5	Advanced Health/physical Assessment	3 hrs	30	70		25	50

1	II year Specialty Courses Foundations of Critical Care Nursing Practice	3 hrs	30	70		50	100
2	Critical Care Nursing I	3 hrs	30	70		50	100
3	Critical Care Nursing II	3 hrs	30	70		50	100
4	Dissertation	3 hrs					50

EVALUATION FORMATS

COMPETENCY BASED CLINICAL PERFORMANCE EVALUTION

NURSE PRACTITIONER IN CRITICAL CARE (NPCC) POST GRADUATE RESIDENCY PROGRAM

Name of the student:

ICU/UNIT:

Date: From:

Year: I Year/II Year

To:

Sl. No.		1	2	3	4	Rating	Score
I.	<u>CLINICAL PRACTICE COMPETENCIES:</u>						
1.	Performs initial assessment of the critically ill patient (ABCDE approach) to identify need for emergency action					1.0	
2	Obtains comprehensive and focused age specific history of critically ill patient from patient/family members					1.0	
3.	Performs appropriate clinical/physical examination using correct techniques					1.0	
4.	Accurately interprets findings of history, physical examination and investigations					0.5	
5.	Works collaboratively with Intensivists for development of diagnosis for the presenting problem while prioritizing the care					0.5	
6.	Documents initial assessment and plan of care accurately					1.0	
7.	Applies the pathophysiological principles in developing diagnosis, plan of care, symptom management and secondary prevention of critical illnesses					0.5	

Sl. No.		1	2	3	4	Rating	Score
8.	Uses invasive and noninvasive technology and advanced skills to assess, monitor and promote physiologic stability in the management of emergency situations as per institutional protocols					2.0	
9.	Demonstrates critical thinking in clinical decision-making and selects appropriate interventions.					1.0	
10.	Provides culturally safe and competent care applying nursing process/care pathways.					2.0	
11.	Performs safe drug administration based on pharmacological principles, sound knowledge of drug interactions and as per institutional standing orders					2.0	
12.	Documents drugs administered accurately and provides follow up care					0.5	
13.	Seeks appropriate assistance from preceptor to maintain patient and environment safety					0.5	
14.	Evaluates and documents patients' responses to care provided and the effectiveness of care					0.5	
15.	Provides anticipatory guidance and counseling to families and patients in crisis situations particularly end of life care					1.0	
II. 16.	<u>MANAGEMENT, TEACHING & RESEARCH COMPETENCIES:</u> Manages and transforms health information to effect health outcomes such as cost, quality and satisfaction					1.0	

Sl. No.		1	2	3	4	Rating	Score
17.	Applies problem solving, critical thinking and decision making skills effectively in managing patient care in ICU					1.0	
18.	Creates and maintains a safe therapeutic environment using risk management strategies and quality improvement					1.0	
19.	Provides education appropriate to age and needs of patients using effective teaching methods, media and evaluation					1.0	
20.	Analyzes the evidence for nursing interventions carried out in critical care nursing practice to promote safety and effectiveness of care					1.0	
III.	<u>PERSONAL AND PROFESSIONAL COMPETENCIES:</u>						
21.	Assumes personal accountability and responsibility in practicing the Nurse practitioner's roles and competencies and articulates role to public and other health care professionals					1.0	
22.	Engages in ethical practice having a sound knowledge of law, ethics and regulation of advanced nursing practice					1.0	
23	Actively participates in collaborative practice involving all critical care team members and performs the NP roles within the authorized scope					1.0	
24	Builds effective interpersonal relationship and communication with patients, families and critical care team based on trust and respect and integrity					1.0	

Sl. No.		1	2	3	4	Rating	Score
25	Assumes personal responsibility for professional development					1.0	
	TOTAL SCORE					25	100

Key:

- 4. Outstanding/excellent (90-100%)
- 3. Proficient/competent (75 to <90%)
- 2. Needs improvement (50 to <75%)
- 1. Unsatisfactory/unacceptable (25 to <50%)

REMARKS BY PRECEPTOR: (Include general impressions, unusual incidents and justify scores 1 and 4)

REMARKS BY FACULTY:

Signature of the preceptor with date

Signature of the faculty with date

REMARKS BY THE STUDENT:

Signature of the student with date

CLINICAL PRESENTATION EVALUATION

(PATHOPHYSIOLOGY)

NAME OF THE STUDENT:

YEAR I/II:

COURSE:

TOPIC:

DATE:

S.No.	Presentation skills	Marks allotted	Marks obtained
1.	Coverage of content -12		
	1.1 Brief patient presentation	4	
	1.2 Relevant normal physiology and abnormal physiological changes/processes related to critical condition	8	
2.	Clarity and credibility in presentation	1	
3.	Well organized	1	
4.	Interesting and creative, use of illustrations	2	
5.	Group involvement & effective handling of questions	1	
6.	Confidence and resourcefulness	1	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
	TOTAL	20	

Signature of preceptor

Signature of faculty

REMARKS:-

CLINICAL PRESENTATION

(HEALTH ASSESSMENT)

NAME OF THE STUDENT:

YEAR I/II:

COURSE:

TOPIC:

DATE:

S.No.	Presentation skills	Marks allotted	Marks obtained
1.	Coverage of content -12		
	1.1. ABCDE initial assessment of critically ill	3	
	1.2. Focused History	3	
	1.3. Focused physical examination	3	
	1.4. Diagnostic /lab tests and interpretation & probable diagnosis	3	
2.	Clarity and credibility in presentation	1	
3.	Well organized	1	
4.	Interesting and creative, use of illustrations	2	
5.	Group involvement & effective handling of questions	1	
6.	Confidence and resourcefulness	1	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
	TOTAL	20	

Signature of preceptor

Signature of faculty

REMARKS:-

CASE STUDY REPORT (HEALTH ASSESSMENT)

S.No.	Particulars	Marks allotted	Marks obtained
1.	Patient history & significant findings (includes ABCDE initial assessment)	6	
2.	Physical examination & significant findings	3	
3.	Diagnostic /lab tests and interpretation	3	
4.	Discussion and conclusion of findings with probable diagnosis	2	
5	Organization in presenting the written content	2	
6	Use of illustrations	2	
7	References	2	
	Total	20	

Signature of preceptor

Signature of faculty

REMARKS:-

DRUG STUDY PRESENTATION & DRUG STUDY REPORT

NAME OF THE STUDENT:

YEAR I/II:

COURSE:

TOPIC:

DATE:

DRUG STUDY PRESENTATION

S.No.	Presentation skills	Marks allotted	Marks obtained
1.	Coverage of content -12		
	1.1. Drug name –generic with dosage, therapeutic ranges & route of administration	3	
	1.2. Mechanism of Action, metabolism and excretion	2	
	1.3. Side effects, adverse reactions, drug interactions and management incl. anaphylaxis management	3	
	1.4. Precautions and monitoring	1	
	1.5. Patient's response to drug treatment	1	
	1.6. Overdose-symptoms & treatment	2	
2.	Clarity and credibility in presentation	1	
3.	Well organized	1	
4.	Interesting and creative, use of illustrations	2	
5.	Group involvement & effective handling of questions	1	
6.	Confidence and resourcefulness	1	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
	TOTAL	20	

Signature of preceptor

Signature of faculty

REMARKS:

DRUG STUDY REPORT

S.No.	Particulars	Marks allotted	Marks obtained
1.	Drug name –generic with dosage, therapeutic ranges & route of administration	3	
2	Mechanism of Action, metabolism and excretion	2	
3	Side effects, adverse reactions, drug interactions and management incl. anaphylaxis management	3	
4	Precautions and monitoring	1	
5	Patient's response to drug treatment	1	
6	Overdose-symptoms & treatment	2	
7	Discussion and conclusion	2	
8	Organization in presenting the written content	2	
9	Use of illustrations	2	
10	References	2	
	Total	20	

Signature of preceptor

Signature of faculty

REMARKS:-

CLINICAL PRESENTATION EVALUATION

(CRITICAL CARE NURSING I&II)

NAME OF THE STUDENT:

YEAR I/II:

COURSE:

TOPIC:

DATE:

CLINICAL PRESENTATION

S.No.	Presentation skills	Marks allotted	Marks obtained
1.	Coverage of content -12		
	1.1. Introduction or chief complaint	1	
	1.2. History of present illness	2	
	1.3. Physical examination	2	
	1.4. Diagnostic tests	1	
	1.5. Diagnosis & relevant pathophysiology	1	
	1.6. Management and outcomes	4	
	1.7. Summary	1	
2.	Clarity and credibility in presentation	1	
3.	Well organized	1	
4.	Interesting and creative, use of illustrations	2	
5.	Group involvement & effective handling of questions	1	
6.	Confidence and resourcefulness	1	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
	TOTAL	20	

Signature of preceptor

Signature of faculty

REMARKS:-

CASE STUDY REPORT (CRITICAL CARE NURSING I & II)

S.No.	Particulars	Marks allotted	Marks obtained
1.	Introduction of patient, history & physical examination, and Diagnostic tests – significant findings	5	
2.	Diagnosis and relevant pathophysiology	1	
3.	Management plan (Identification of outcomes & Development of plan for care/care pathway)	2	
4.	Management (Treatment and nursing interventions including family education and counseling) & Achievement of outcomes (Patients responses to treatment and interventions)	4	
5	Discussion and conclusion	2	
6	Organization in presenting the written content	2	
7	Use of illustrations	2	
8	References	2	
	Total	20	

Signature of preceptor

Signature of faculty

REMARKS:-

SEMINAR EVALUATION

NAME OF THE STUDENT:

YEAR I/II:

COURSE :

TOPIC :

DATE :

S.No.	Presentation skills	Marks allotted	Marks obtained
1.	Coverage of content (Relevant and current knowledge)	10	
2.	Clarity and credibility in presentation	2	
3.	Well organized	2	
4.	Interesting and creative	1	
5.	Group involvement & effective handling of questions	2	
6.	Confidence and resourcefulness	1	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
TOTAL		20	
WRITING SKILLS			
9	Content coverage (Relevant and current knowledge)	5	
10	Organization in presenting the content (Introduction, text and conclusion)	3	
11	Use of illustrations	1	
12	References	1	
TOTAL		10	

Signature of preceptor

Signature of faculty

REMARKS:-

JOURNAL CLUB EVALUATION

NAME OF THE STUDENT:

YEAR I/II:

COURSE :

TOPIC :

DATE :

S.No.	Paper selection and Presentation skills	Marks allotted	Marks obtained
1.	Paper selection (From peer reviewed journal and current knowledge relevant to critical care nursing practice)	4	
2.	Quality of research (Research question, objectives, methods, results & discussion) / content reviewed	4	
3.	Critical appraisal of the content/results of research	4	
4.	Interesting and creative, Use of AV aids-organization and clarity	2	
5.	Group involvement & effective handling of questions	2	
6.	Organization, clarity and credibility in presentation	2	
7.	Professional outlook-poise, emotional stability	1	
8.	Time management	1	
TOTAL		20	

Signature of preceptor

Signature of faculty

REMARKS:-

TEACHING / MICRO TEACHING EVALUATION (Family/student education)

NAME OF THE STUDENT:

YEAR I/II:

COURSE: TOPIC:

AUDIENCE: DATE:

DURATION TAKEN:

S.No.	Particulars	Marks allotted	Marks obtained
I.	PREPARATION OF TEACHING PLAN	3	
	Objectives		
	Content (appropriate, adequate, organization, recent updates) • References		
II.	PREPARATION OF SETTING	2	
	Seating, lighting, ventilation, cleanliness, availability of resources		
III.	PRESENTATION	10	
	Learning outcomes/objectives made clear to the audience		
	Clarity in presentation		
	Organization of content		
	Confidence in presentation		
	Appropriate eye contact, posture, Language, manners and discipline		
	Group involvement & Sustaining the interest of the group		
	Keeping the interest of the group		
	• Clarifying doubts and leading discussions		
	Use of appropriate illustrations		
	Time management		

IV.	TEACHING AID	3	
	Appropriate and effective use		
	Creativity & clarity		
V.	ASSIGNMENT/PLAN FOR FOLLOW UP	2	
	Relevant & Achievable		
	Total	20	

Signature of preceptor

Signature of faculty

REMARKS:-

Preceptor evaluation

S.No	Attributes	Score
1	Facilitates communication with critical care team and NP students	1 2 3 4 5
2	Manages time effectively	1 2 3 4 5
3	Competent in specialized clinical skills and shares knowledge and techniques appropriate to clinical learning outcomes	1 2 3 4 5
4	Respects students	1 2 3 4 5
5	Asks questions in non- threatening way	1 2 3 4 5
6	Receptive to students' questions	1 2 3 4 5
7	Provides relaxed atmosphere for learning	1 2 3 4 5
8	Validates students clinical skills and provides ongoing feed back	1 2 3 4 5
9	Demonstrates enthusiasm for teaching	1 2 3 4 5
10	Willing to work with novice students	1 2 3 4 5

Key 1- unsatisfactory, 2- minimally satisfactory, 3- Satisfactory, 4- highly satisfactory, 5- Excellent

VII. CURRICULUM

Courses of Instruction

		Theory(Hrs)	Lab/Skill Lab(Hrs)	Clinical (Hrs)
I Year				
I	Core Courses Theoretical Basis for Advanced Practice Nursing Research Application and Evidence Based	40		
II	Practice in Critical Care	56	24	336 7wks
III	Advanced skills in Leadership, Management and Teaching Skills	56	24	184 4wks
	Advanced Practice Courses			
IV	Advanced Pathophysiology applied to Critical Care	60		336 7wks
V	Advanced Pharmacology applied to Critical Care	54		336 7wks
VI	Advanced Health/physical Assessment	70	48	576 12wks
TOTAL= 2208hrs		336 (7wks)	96 (2wks)	1776(37wks)
II year				
VII	Specialty Courses Foundations of Critical Care Nursing Practice	96	48	552 11wks
VIII	Critical Care Nursing I	96	48	552 13wks
IX	Critical Care Nursing II	96	48	644 13wks
TOTAL=2208hrs		288 (6wks)	144 (4wks)	1748 (37wks)

No of weeks available in an year =52 -6 (Annual leave, Casual leave, sick leave = 6 weeks) =46 weeks x 48 hrs =
2208 hrs

Two years = 4416 hrs

Instructional Hours: Theory = 624hrs, Skill lab= 240hrs, Clinical =3552hrs

TOTAL= 4416 hrs

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

II year : 288-144-1776hrs (" ") [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 workshops

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

week Block classes = 48 hrs)

CLINICAL PRACTICE

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

Clinical placements:

I year: 44 weeks (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, NICU/PICU, OBG) - 6 weeks

II 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, NICU/PICU, OBG) - 6 weeks

C. Teaching methods:

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

- Clinical conference
- Case/clinical presentation
- In depth drug study, presentation and report
- Nursing rounds
- Clinical seminars

- Journal clubs
- Case study/Nursing process
- Advanced health assessment
- Faculty lecture in the clinical area
- Directed reading
- Assignments
- Case study analysis
- Workshops

D. Procedures/log book

At the end of each clinical posting, clinical log book (Specific competencies/Clinical skills & clinical requirements) has to be signed by the preceptor every fortnight (Appendix 2a, 2b, 3)

E. NP Critical Care Competencies

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
5. Administer drugs and treatments according to institutional protocols/Standing orders. Prescriptive authority is not part of NPs responsibilities
6. Uses applicable communication, counseling, advocacy and interpersonal skills to initiate, develop and discontinue therapeutic relationships in consultation with doctors
7. Refers to and accepts referrals from other health care professionals to maintain continuity of care
8. Consults with and is consulted by other health care professionals
9. Works in collaboration with health team members in the interest of the patient
10. Develops a practice that is based on current scientific evidence and incorporated into the health management of patients, families and communities
11. Introduces, tests, evaluates and manages evidence based practice
12. Uses research to produce evidence based practice to improve the safety, efficiency and effectiveness of care through inter-professional research
13. Engages in ethical practice in all aspects of the APN role responsibility
14. Accepts accountability and responsibility for own advanced professional actions, and continued competence
15. Maintains a safe therapeutic environment through the use of risk management strategies and quality improvement
16. Assumes leadership and management responsibilities in the delivery of efficient advanced practice nursing services in a changing health care system
17. 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

F. Institutional Protocol/standing orders based administration of drugs & ordering of investigations and therapies

The students will be trained to administer drugs and order diagnostic tests, procedures, medical equipment and therapies as per institutional protocols/standing orders. Administration of emergency drugs is carried out as per the advice of the concerned physician.

Implementation of curriculum-A tentative plan

I yr. Courses	Introductory classes	Workshop	Theory integrated in clinical practicum	Methods of teaching (Topic can be specified)
1. Theoretical basis for Advanced practice Nursing (40)	8hrs		1x32=32hrs	- Seminar / Theory application - Lecture (faculty)
2. Research Application and Evidence Based Practice in Critical Care (56+24)	8	40 (5days) +6hrs	1x26=26hrs	- Research study analysis/ - Exercise / Assignment (lab)
3. Advanced skills in leadership, Management and Teaching (56+24)	12	2hrs(Block classes)	1x26=26hrs 2.5x16=40hrs	- Clinical conference - Seminar - Exercises/Assignment (lab)
4. Advanced Pathophysiology (60)			1.5x37=56hrs	- Case presentation - Seminar - Clinical conference
5. Advanced Pharmacology (54)			1x44=44hrs	- Nursing rounds - Drug study presentation - Standing orders / presentation
6. Advanced Health Assessment (70+40)	6hrs		2x26=52hrs 1.5x18=27hrs 1x12=12hrs 2x7=14hrs 2x2=4hrs	- Clinical demonstration (faculty) - Return demonstration - Nursing rounds - Physical assessment(all systems) - Case study

I Year – Introductory classes= 1 week,
Workshop = 1 week ,44 weeks = 7.5 hrs/week

II year courses 1wk Block classes (48hrs)	Theory integrated into clinical practicum	Methods of teaching
1. Foundations (96+48hrs) =144hrs	9hrs x11wks=99hrs	• Demonstration (lab) • Return demonstration (lab) • Clinical teaching • Case study • Seminar • Clinical conference • Faculty lecture
2. Critical Care Nursing 96+48hrs) =144hrs	9x16=144hrs	• Demonstration (lab) • Return Demonstration (lab) • Clinical conference / journal club • Seminar • Case presentation • Drug study(including drug interaction) • Nursing rounds • Faculty lecture
3. Critical Care Nursing II 96+48hrs) =144hrs	9x16=144hrs	• Demonstration (lab) • Return Demonstration • Nursing rounds • Clinical conference / journal club • Seminar • Faculty lecture

II year 45wks – 8.5/9hrs/week

Topic for every teaching method will be specified in the detailed plan by the respective teacher/ institution concerned

CORE COURSES

I. Theoretical Basis for Advanced Practice Nursing

COMPETENCIES

1. Analyses the global healthcare trends and challenges
2. Analyses the impact of Healthcare and Education policies in India on nursing, consulting the documents available.
3. Develops in depth understanding of the healthcare delivery system in India, and its challenges
4. Applies economic principles relevant to delivery of healthcare services in critical care
5. Manages and transforms health information to effect health outcomes such as cost, quality and satisfaction
6. Accepts the accountability and responsibility in practicing the Nurse practitioner's roles and competencies
7. Actively participates in collaborative practice involving all healthcare team members in critical care within the authorized scope
8. Engages in ethical practice having a sound knowledge of law, ethics and regulation of advanced nursing practice
9. Uses the training opportunities provided through well planned preceptorship and performs safe and competent care applying nursing process
10. Applies the knowledge of nursing theories in providing competent care to critically ill patients
11. Predicts future challenges of nurse practitioner's roles in variety of healthcare settings particularly in India

Hours of instruction:

40hrs.

Sl. No.	Topic	Hours
1.	Global Health Care Challenges and Trends(Competency-1)	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
	Advanced Nursing Practice (ANP)	
6.	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

Sl. No.	Topic	Hours
9.	Training for NPs – Preceptorship (Competency-9)	2
10.	Future challenges of NP practice(Competency-11)	4
11.	Theories of Nursing applied to APN(Competency-10)	3
12.	Nursing process applied to APN(Competency-9)	2
	Self Learning assignments	6
1.	Identify Health Care and Education Policies and analyse its impact on Nursing	
2.	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?	
3.	Examine the nursing protocols relevant to NP practice found in various ICUS in you tertiary centre	
	Total	40 hrs.

Bibliography:

Barkers,A.M.(2009). Advanced Practice Nursing. Massachussets: Jones & Bartlett Publishers

Hickey, J. V., Ouimette, R. M., &Venegoni, S. L. (1996).*Advanced practice nursing: Changing roles and clinical applications*. Philadelphia: Lippincott Williams and Wilkins.

Schober, M., &Affara, F. A. (2006).*Advanced nursing practice*. Oxford: Blackwell publishing.

Stewart,G.J.,&Denisco,S.M.(2015).Role Development for the Nurse Practitioner. USA: Springer Publishing Company

II. Research Application and Evidence Based Practice in Critical Care

COMPETENCIES

1. Applies sound research knowledge and skills in conducting independent research in critical care setting
2. Participates in collaborative research to improve patient care quality
3. Interprets and uses research findings in advanced practice to produce EBP
4. Tests / Evaluates current practice to develop best practices and health outcomes and quality care in advanced practice
5. Analyzes the evidence for nursing interventions carried out in critical care nursing practice to promote safety and effectiveness of care
6. Develops skill in writing scientific research reports

Hours of Instruction

(Theory: 56+Lab/skill lab: 24hrs) =80hrs

Sl.No.	Topic	Hours
1.	Research and Advanced Practice Nursing : Significance of Research and inquiry related to Advanced nursing role (Competency 1)	2
2.	Research agenda for APN practice :Testing current practice to develop best practice, health outcomes and indicators of quality care in advanced practice (Competency 3,4,5), promoting research culture	5
3.	Research Knowledge and skills: Research competencies essential for APNs (interpretation and use of research, evaluation of practice, participation in collaborative research) Research Methodology Phases / steps (Research question, Review of literature, conceptual framework, research designs, sampling, data collection, methods & tools, Analysis and Reporting) writing research proposal and research report (Competency – 1 & 2)	40 (5 days workshop)
4.	Writing for publication (writing workshop – Manuscript preparation and finding funding sources) (Competency – 6)	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 (Competency – 3,4,5)	4
	Total	56hrs.

Practical / Lab & Assignments- 24hrs

- Identifying research priorities
- Writing exercises on Research question, objectives and hypothesis
- Writing research proposal
- Scientific paper writing – preparation of manuscript for publication
- Writing systematic review – Analyze the evidence for a given nursing intervention in ICU

Clinical Practicum

- Research practicum: Dissertation (336 hrs=7weeks)

Bibliography:

Burns, N., & Grove, S. K. (2011). *Understanding nursing research: Building an evidence-based practice* (5th ed.). 1st Indian reprint 2012, New Delhi: Elsevier.

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 of research. Sd: Jones and Bartlet Publishers.

III. Advanced skills in Leadership, Management and Teaching

COMPETENCIES

1. Applies principles of leadership and management in critical care units
2. Manages stress and conflicts effectively in a critical care setting using sound knowledge of principles
3. Applies problem solving and decision making skills effectively
4. Uses critical thinking and communication skills in providing leadership and managing patient care in ICU
5. Builds teams and motivates others in ICU setting
6. Develops unit budget, manages supplies and 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

Hours of Instruction

(56+24=80Hrs)

Sl.No.	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	4
4.	Stress management and conflict management – principles and application to critical care environment, Effective time management	4
5.	Quality improvement and audit	4
6.	Problem solving, critical thinking and decision making, communication skills applied to critical care nursing practice	5
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	5
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 in critical care environment	2
	Total	56 hrs.

Practical / Lab = 24 hrs.

1. Preparation of staff patient assignment
2. Preparation of unit budget
3. Preparation of staff duty roster
4. Patient care audit
5. Preparation of nursing care standards and protocols
6. Management of equipment and supplies
7. Monitoring, evaluation, and writing report of infection control practices
8. Development of teaching plan
9. Micro teaching / patient education sessions
10. Preparation of teaching method and media for patients and staff
11. Planning and conducting OSCE/OSPE
12. Construction of tests

Assignment - ICU work place violence

Bibliography:

Bastable, S. B. (2010). *Nurse as educator: Principles of teaching and learning for nursing practice* (3rd ed.). New Delhi: Jones & Bartlett Publishers

Billings, D. M., & Halstead, J. A. (2009). *Teaching in nursing: A guide for faculty* (3rd ed.). St. Louis, Missouri: Saunders Elsevier.

Clark, C. C. (2010). *Creative nursing leadership and management*. New Delhi: Jones and Bartlett Publishers.

McConnel. (2008). *Management principles for health professionals*. Sudbury, M. A: Jones and Bartlett Publishers.

Roussel, L., & Swansburg, R. C. (2010). *Management and leadership for nurse administrators* (5th ed.). New Delhi: Jones and Bartlett Publishers.

ADVANCED NURSING COURSES

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

COMPETENCIES

- Integrates the knowledge of pathophysiological process in critical conditions in developing diagnosis and plan of care
- Applies the pathophysiological principles in symptom management and secondary prevention of critical illnesses
- Analyzes the pathophysiological changes relevant to each critical illness recognizing the value of diagnosis, treatment, care and prognosis

Hours of instruction:

Theory: 30 hours

Unit	Hours	Content
I	(8)	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 • Arrhythmias • Cor pulmonale • Heart block and conduction disturbances
	(4)	2. Pulmonary function Advanced pathophysiological process of pulmonary conditions • Chronic obstructive pulmonary disease • Disorders of the pulmonary vasculature • Infectious diseases • Respiratory failure • Chest trauma
	(6)	3. Neurological function Advanced pathophysiological process of neurological conditions • Seizure disorder • Cerebrovascular disease • Infections • Spinal cord disorder • Degenerative neurological diseases • Neurological trauma • Coma, unconsciousness

Unit	Hours	Content
	(4)	4. Renal function Advanced pathophysiological process of renal conditions • Acute renal failure • Chronic renal failure • Bladder trauma • Infections(Glomerulonephritis) • Nephrotic syndrome
	(4)	5. Gastrointestinal and hepatobiliary function Advanced pathophysiological process of hepatobiliary conditions • Gastrointestinal bleeding • Intestinal obstruction • Pancreatitis • Hepatic failure • Gastrointestinal perforation
	(4)	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

IV.B. Advanced Pathophysiology Applied to Critical Care Nursing - II

Hours of instruction

Theory: 30 hours

Unit	Hours	Content
I	(8)	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
II	(2)	2. Integumenatry function Advanced pathophysiological process of integumentary conditions - Wound healing - Burns - Steven Johnson Syndrome
III	(8)	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
IV	(6)	4. Specific infections Advanced pathophysiological process of specific infections - HIV - Tetanus - SARS - Rickettsiosis

Unit	Hours	Content
V	(6)	• Leptospirosis • Dengue • Malaria • Chickungunya • Rabies • Avian flu • Swine flu 5. Reproductive functions Advanced pathophysiological process of reproductive conditions • 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

Bibliography

Huether, S. E., & McCance, K. L. (2012). Understanding pathophysiology (5th ed.). St. Louis, Missouri: Elsevier

John, G., Subramani, K., Peter, J. V., Pitchamuthu, K., & Chacko, B. (2011). Essentials of critical care (8th ed.). Christian Medical College: Vellore.

Porth, C. M. (2007). Essentials of pathophysiology: Concepts of altered health states (2nd ed.). Philadelphia: Lippincott Williams and Wilkins.

Urden, L. D., Stacy, K. M., & Lough, M. E. (2014). Critical Care Nursing- Diagnosis and management (7th ed.). Elsevier: Missouri

V. Advanced Pharmacology relevant to Critical Care Nursing

COMPETENCIES

- Applies the pharmacological principles in providing care to critically ill patients and families
- Analyzes pharmaco-therapeutics and pharmacodynamics relevant to drugs used in the treatment of critical care conditions
- Performs safe drug administration based on principles and institutional protocols
- Documents accurately and provides follow up care
- 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

Hours of instruction

Theory: 54 hours

Unit	Hours	Content
I	2	Introduction to pharmacology in critical care • History • Classification of drugs and schedules
II	4	Pharmacokinetics and Pharmacodynamics • 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 ☐ Parenteral drug administration
III	5	Pharmacology and Cardiovascular alterations in Critical care • Vasoactive Medications ☐ Vasodilator, ☐ Vasopressor, ☐ Inotropes - Cardiac glycosides – digoxin - Sympathomimetics – Dopamine, dobutamine, epinephrine, isoproterenol, norepinephrine, phenylephrine - Phosphodiesterase inhibitors – amrinone, milrinone • Antiarrhythmic Medications • Cardiac critical care conditions ☐ Medications to improve cardiac contractility ☐ Medications in the management of hypertension in critical care ☐ Medications in the management of heart failure ☐ Medications in the management of angina pectoris and myocardial infarction ☐ Medications in the management of dysrhythmias, Heart block and conduction disturbances

Unit	Hours	Content
		☐ Medications in the management of Pulmonary hypertension, Valvular heart disease, Cardiomyopathy ☐ Medications in the management of Atherosclerotic disease of aorta and Peripheral artery disease ☐ Medications in the management of Deep vein thrombosis • Institutional Protocols/Standing orders for cardiac critical care emergencies
IV	4	Pharmacology and Pulmonary 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
V	6	Pharmacology and Neurological alterations in Critical care • Pain ☐ NSAID ☐ Opioid analgesia • Sedation ☐ Gamma amino butyric acid stimulants ☐ Dexmedetomidine ☐ 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

Unit	Hours	Content
		☐ 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 ☐ 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
VI	5	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 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
VII	5	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

Unit	Hours	Content
		- 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
VIII	4	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
IX	5	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 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

Unit	Hours	Content
		Medications in the management of Tumor lysis syndrome • Standing orders for hematology critical care emergencies
X	3	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
XI	5	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 care setting ☐ Antipyretics ☐ NSAIDS ☐ Corticosteroids • Standing orders for multi system critical care emergencies
XII	6	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 malarias, 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

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VI. Advanced Health/Physical Assessment in Critical Care Nursing

COMPETENCIES

- 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 and institutional protocols in consultation with doctors
- Analyzes the results of various investigations and works collaboratively with intensivists
- Documents assessment, diagnosis, and management and monitors follow up care in partnership with health care team members, patients, and families

Hours of instruction

Theory: 70 hours

Practical/Lab: 46 hours

Unit	Hours	Content
	(4)	1. Introduction • History taking • Physical examination
	(6)	2. Cardiovascular system • Cardiac history • Physical examination • Cardiac laboratory studies – biochemical markers, hematological studies • Cardiac diagnostic studies – Electrocardiogram, echocardiography, stress testing, radiological imaging
	(6)	3. Respiratory system • History • Physical examination • Respiratory monitoring – Arterial blood gases, pulse oximetry, end-tidal carbondioxide monitoring • Respiratory Diagnostic tests – Chest radiography, ventilation perfusion scanning, pulmonary angiography, bronchoscopy, thoracentesis, sputum culture, pulmonary function test
	(6)	4. Nervous system • Neurological history • 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
	(6)	5. Renal system • History • Physical examination • Assessment of renal function

Unit	Hours	Content
		- Assessment of electrolytes and acid base balance - Assessment of fluid balance
	(4)	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
	(4)	7. Endocrine system - History, physical examination, laboratory studies, and diagnostic studies of - Hypothalamus and pituitary gland - Thyroid gland - Parathyroid gland - Endocrine gland - Adrenal gland
	(4)	8. Hematological system - History - Physical examination - Laboratory studies - blood parameters - Diagnostic studies – bone marrow aspiration
	(3)	9. Integumentary system - History - Physical examination - Pathological examination – tissue examination
	(6)	10. Musculoskeletal system - History - Physical examination – gait assessment, joint assessment, - Laboratory studies – blood parameters (inflammatory enzymes, uric acid) - Diagnostic studies - Radiological and imaging studies, endoscopic studies
	(5)	11. Reproductive system(Male & Female) - History - Physical examination - Laboratory studies - Diagnostic studies
	(4)	12. Sensory Organs - History - Physical examination - Laboratory studies - Diagnostic studies - Radiological and imaging studies, endoscopic studies

Unit	Hours	Content
	(6)	13. Assessment of children • Growth and development • Nutritional assessment • Specific system assessment
	(6)	14. Assessment of older adults • History • Physical assessment • Psychological assessment

List of skills to be practiced in the skill lab (46 hours include demonstration by the faculty and practice by the students)

- ☐ Comprehensive history taking
- ☐ Focused history taking (system wise)
- ☐ Comprehensive physical examination
- ☐ Focused physical examination (system wise)
- ☐ Monitoring clinical parameters (system wise)

Invasive BP monitoring, Multi-parameter Monitors, ECG, Pulse index Continuous Cardiac Output (PiCCO), Peripheral vascular status, ABG, Pulse Oximetry, End Tidal CO₂ (ETCO₂), Intracranial Pressure (ICP), Glasgow Coma Scale (GCS), Cranial nerve assessment, Pain and Sedation score of critically ill, Motor assessment, Sensory assessment, Renal function tests, Fluid balance, acid base balance, electrolytes, Bowel sounds, Abdominal pressure, Residual gastric volume, Liver function tests, GRBS, Lab tests, Radiological and Imaging tests(system wise)

- ☐ Ordering and interpretation of screening and diagnostic tests as per institutional protocols
- ☐ Assessment of children-neonate and child
- ☐ Assessment of Older adults
- ☐ Assessment of pregnant women

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Wilson, S. F., & Giddens, J. F. (2006). Health assessment for nursing practice (4th ed.). St. Louis, Missouri: Saunders Elsevier.

CRITICAL CARE SPECIALTY COURSES

(Foundations of Critical Care Nursing Practice, Critical Care Nursing I and Critical Care Nursing II)

COMPETENCIES

- Applies advanced concepts of critical care nursing based on sound knowledge of these concepts
- 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
- Practices principles of infection control relevant to critical care
- Practices 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 in consultation with doctors
- Creates and maintains a safe therapeutic environment using risk management strategies and quality improvement
- Adapts practice to the social, cultural and contextual milieu

VII. Foundations of Critical Care Nursing Practice

Hours of instruction:

Theory: 96 hours, Practical/skill lab: 48 hours

Unit	Hours	Content
I	10	Introduction to Critical Care Nursing • Introduction to the course • Review of 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 • 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 • Nursing staff • Doctors • Critical care technicians • Ancillary staff • Technology in critical care • Healthy work environment • Future challenges in critical care nursing
II	5	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 • 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 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
III	10	Appraisal of the critically ill <i>Triaging concept, process and principles</i> Assessment of the critically ill • General assessment • Respiratory assessment • Cardiac assessment • Renal assessment • Neurological assessment • Gastrointestinal assessment

Unit	Hours	Content
		• 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 (RASS) • Pain score • Braden score 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 (MELD)
IV	14	Advanced Concepts and Principles of Critical Care • 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 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)
V	8	• Glycemic control, care of patient with glycemic imbalances Pain and Management • Pain in Critically ill patients • Pain – Types, Theories • Physiology, Systemic responses to pain and psychology of pain Review • Acute pain services • Pain assessment – Pain scales, behavior and verbalization • Pain management-pharmacological (Opioids, benzodiazepines, propofol, Alpha agonist, Tranquilisers, Neuromuscular blocking agents)

Unit	Hours	Content
		- Nonpharmacological management - Transcutaneous electrical nerve stimulation(TENS)
VI	8	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
VII	4	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
VIII	5	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 parenteral nutrition
IX	4	Sleep alterations and management - Normal human sleep - Sleep pattern disturbance - Sleep apnea syndrome
X	5	Infection control in critical care - Nosocomial infection in intensive care unit; methyl resistant staphylococcus aureus (MRSA) and other recently identified strains - Disinfection, Sterilization, - Standard safety measures, - Prophylaxis for staff
XI	6	- Antimicrobial therapy- review Legal and ethical issues in critical care-Nurse's role Legal issues - Issues giving raise to civil litigation - Related laws in india - Medical futility - Administrative law: Professional regulation

Unit	Hours	Content
		• 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
XII	8	Quality assurance • 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 care • Staffing
XIII	3	Evidence based practice in critical care nursing • Evidence based practice in critical care • Barriers to implementation • Strategies to promote implementation
	5	Class tests
Total	96	

List of skills to be practiced in the skill lab (46 hours 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
- 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
- ☐ 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, phosphorus, 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, 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

VIII. Critical Care Nursing I

Hours of instruction:

Theory: 96 hours,

Practical: 48hours

Unit	Hours	Content
I	6	Introduction - Review of anatomy and physiology of vital organs - Review of assessment and monitoring of the critically ill
II	16	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
III	15	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

Unit	Hours	Content
		- 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
IV	15	• Recent advances and development 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
V	15	• Recent advances and development Nephrology alterations • Review of Clinical 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
VI	12	• Recent advances and development 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

Unit	Hours	Content
		- Acute intestinal obstruction - Perforative peritonitis • Gastrointestinal therapeutic management - Gastrointestinal surgeries - Liver transplant • Recent advances and development
VII	12	Endocrine alterations • Review of Clinical assessment, pathophysiology, and pharmacology • Special diagnostic studies • Endocrine conditions 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
	5	Class tests
Total	96 hours	

List of skills to be practiced in the skill lab (69 hour include demonstration by the faculty and practice by the students).

☐ **Cardiovascular alterations** o

Thrombolytic therapy

- o Use of equipment and their settings – Defibrillator, PiCCO), Pace makers, Intraaorticballon pump(IABP)

☐ **Pulmonary alterations**

- o Tracheostomy Care
- o Nebulization
- o Chest physiotherapy
- o Chest tube insertion
- o Chest drainage

☐ **Neurological alterations**

- o Monitoring GCS
- o Conscious and coma monitoring
- o Monitoring ICP
- o Sedation score
- o Brain Death Evaluation

☐ **Nephrology alterations**

- o Dialysis
 - ☐ Priming of dialysis machine

- ☐ Preparing patient for dialysis

- ☐ Cannulating for dialysis

- ☐ Starting and closing dialysis

- ☐ **Gastrointestinal alterations**

- o Abdominal pressure monitoring

- o Calculation of calorie and protein requirements

- o Special diets – sepsis, respiratory failure, renal failure, hepatic failure, cardiac failure, weaning, pancreatitis

- o Enteral feeding – NG/Gastrostomy/ Pharyngeal/Jejunostomy feeds

- o Total parenteral nutrition

- ☐ **Endocrine alterations**

- o Collection of blood samples for cortisol levels, sugar levels, and thyroid hormone levels

- o Calculation and administration of corticosteroids

- o Calculation and administration of Insulin – Review

IX. Critical Care Nursing - II

Hours of instruction:

Theory: 96 hours,

Practical: 48 hours

Unit	Hours	Content
I	12	Hematological alterations - Review of Clinical assessment, pathophysiology, and pharmacology - Special diagnostic studies - Hematology conditions requiring critical care management - DIC - Thrombocytopenia - Heparin induced thrombocytopenia - Sickle cell anemia - Tumor lysis syndrome - Anemia in critical illness - Hematology therapeutic management - Autologous blood transfusion - bone marrow transplantation - Recent advances and development
II	8	Skin alterations - Review of Clinical assessment, pathophysiology, and pharmacology - Special diagnostic studies - Conditions requiring critical care management - Burns - Wounds - Therapeutic management - Reconstructive surgeries for burns - Management of wounds
III	12	- Recent advances and development 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
IV	10	- Poisoning Specific infections in critical care - HIV - Tetanus - SARS - Rickettsiosis - Leptospirosis - Dengue - Malaria

Unit	Hours	Content
		• Chickungunya • Rabies • Avian flu • Swine flu
V	9	Critical care in Obstetrics • Physiological changes in pregnancy • Conditions requiring critical care - Antepartum hemorrhage - PIH - Obstructed labor - Ruptured uterus - PPH - Puerperal sepsis - Obstetrical shock - HELLP syndrome - DIC - Amniotic fluid embolism - ARDS - Trauma
VI	10	Critical care in children • Prominent anatomical and physiological differences and implications • Conditions requiring critical care - AAsphyxianeonatarum - 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 children • Selected pediatric challenges - Ventilatory issue - Medication administration - Pain Management • Interaction with children and families
VII	10	Critical Care in Older Adult • Normal psycho biological characteristics of aging - Biological issues - Psychological issues - Concepts and theories of ageing - Stress & coping in older adults

- Common Health Problems & Nursing Management;

Unit	Hours	Content
		- Physical challenges - Auditory changes - Visual changes - Other sensory changes - Skin changes - Cardiovascular changes - Respiratory changes - Renal changes - Gastro intestinal changes - Musculoskeletal changes - Endocrine changes - Immunological changes - Psychological challenges - Cognitive changes - Abuse of the older person - Alcohol abuse - Challenges in medication use - 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
VIII	10	Critical Care in Perianesthetic period • Selection of anesthesia • General anesthesia • Anesthetic agents • Perianesthesia assessment and care • Post anesthesia problems and emergencies requiring critical care - Respiratory-Airway obstruction, Laryngeal edema, Laryngospasm, Bronchospasm, Noncardiogenic pulmonary edema, Aspiration, Hypoxia, Hypoventilation - Cardiovascular – Effects of anesthesia on cardiac function, Myocardial dysfunction, Dysrhythmias, postoperative hypertension, post operative hypotension - Thermoregulatory – Hypothermia, shivering, hyperthermia, malignant hyperthermia - Neurology- Delayed emergence, emergence delirium, - Nausea and vomiting
IX	10	Other special situations in critical care • Rapid response teams and transport of the critically ill
	5	• Disaster management • Ophthalmic emergencies – Eye injuries, glaucoma, retinal detachment • ENT emergencies - Foreign bodies, stridor, bleeding, quinsy, acute allergic conditions • Psychiatric emergencies – Suicide, crisis intervention Class tests
Total	96 hours	

List of skills to be practiced in the skill lab (69 hours include demonstration by the faculty and practice by the students).

Hematological alterations

Blood transfusion
Care of Catheter site
Bone marrow aspiration

Skin alterations

Burn fluid resuscitation o
Burn feeds calculation
Burn dressing
Burns bath
Wound dressing

Multi system alterations requiring critical care Triage

Trauma team activation
Administration of anti snake venom o
Antidotes

Specific infections in critical care

Isolation precautions
Disinfection and disposal of equipment

Critical care in Obstetrics, children, and Older Adult

partogram
equipments – incubators, warmers

Critical Care in Perianesthetic period

Assisting with planned intubation
Monitoring of patients under anesthesia
Titration of drugs – Ephedrine, Atropine, Naloxone, Avil, Ondansetron
Sensory and motor block assessment for patients on epidural analgesia.
Technical troubleshooting of syringe / infusion pumps.

Other special situations in critical care

Disaster preparedness and protocols

The skills listed under the Specialty courses such as Foundations of Critical Care Nursing Practice, Critical Care Nursing I and Critical Care Nursing II are taught by the faculty in skill lab. The students after practicing them in the lab, will continue to practice in the respective ICUs. The log book specifies all the requirements to be completed and the list of skills that are to be signed by the preceptor once the students develop proficiency in doing the skills independently.

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INTERNAL ASSESSMENT (THEORY & PRACTICAL)

I year

1. Theoretical Basis for Advanced Practice Nursing

Theory only – 25 marks

Test paper – 10 marks

Written assignment/term paper – 10 marks (Global and national healthcare trends & policies)

Clinical seminar (Clinical/Care pathway in specific clinical condition/Application of specific nursing theory) – 5 marks

Final theory exam - 25 marks

Total marks – 50 marks

2. Research Application and Evidence Based Practice in Critical Care

Theory:

Test papers : 20 marks

Written assignment : 5 marks (Literature review/Preparation of research instrument)

Journal club : 5 marks (Analysis of research evidence for ICU nursing competencies)

Total : 30 marks

3. Advanced skills in Leadership, Management and Teaching Skills

Theory :

Test papers : 15 marks

Journal club (Trends in Leadership/management/Teaching) : 5 marks

Written assignment : 5 marks (ICU work place violence)

Microteaching : 5 marks

Total : 30 marks

4. Advanced Pathophysiology & Advanced Pharmacology relevant to Critical Care

Theory:

Test papers : 20 marks (Pathophysiology – 10, Pharmacology – 10)

Drug studies – 5 marks (Drug study and presentation)

Case presentation and case study report (Pathophysiology) : 5 marks

Total : 30 marks

5. Advance Health/physical Assessment

Theory :

Test papers : 20 marks

Written assignment : 10 marks (Diagnostic/investigatory reports –interpretation and analysis of findings)

Total : 30 marks

Practical :

Clinical performance evaluation : 10 marks

End of posting test (OSCE) : 10 marks

Case presentation and case study report – 5 marks

Internal Exam OSCE : 25 marks

Total Internal practical : 50 marks

End of posting test can be conducted in any ICU's

II year

1. Foundations of Critical Care Nursing Practice

Theory :

Test papers - 20

Written assignment : 10 marks (ICU protocols)

Total : 30 marks

Practical :

Clinical Performance evaluation : 20 marks

End of posting exam (OSCE) – 10 marks

Drug studies (Drug study and presentation) : 10 marks

Case presentation and case study report (Family education/counseling) : 5 marks

Case presentation (Application of Clinical/Care Pathway) : 5 marks

Internal OSCE : 50 marks

Total Internal Practical : 100 marks

2. Critical Care Nursing I

Theory :

Test papers : 20 marks

Clinical Seminar and Journal club : 10 marks

Total : 30 marks

Practical :

Clinical performance evaluation : 20 marks

End of posting exam (OSCE) – 10 marks

Clinical presentation : 10 marks

Case study report : 10 marks

Internal OSCE : 50 marks

Total Internal practical : 100 marks

3. Critical Care Nursing II

Theory :

Test papers : 20 marks

Clinical Seminar : 10 marks

Total : 30 marks

Practical

Clinical performance evaluation : 20 marks

End of posting exam (OSCE) – 10 marks

Clinical presentation : 10 marks

Case study report (Developed clinical/care pathways) : 10 marks

Internal OSCE : 50 marks

Total Internal practical : 100 marks

End of posting exam can be conducted in any ICU's

4. Dissertation : 50 marks

EXTERNAL (FINAL) EXAMINATION (As per schedule in syllabus)

Theory : Short answer and essay type questions

(Weightage can be decided by the University)

OSCE GUIDELINES FOR INTERNAL AND UNIVERSITY PRACTICAL EXAMINATION

I YEAR

I. Advanced Health Assessment

INTERNAL

OSCE : 25 marks

CORE COMPETENCY DOMAINS TO BE EXAMINED

1. Focused history taking and physical examination of adult patient
2. Focused history taking and physical examination of pediatric patient
3. Interpretation of findings and results
4. Monitoring of clinical parameters

Number of stations : 5(4+1 Rest station)

Time for each station : 10 minutes

Marks for each station : 5 marks (As per competency Check list and allotted marks)

Total : 4x5 = 20 marks

Oral exam = 5 marks

Total = 25 marks

EXTERNAL

OSCE : 50 marks

CORE COMPETENCY DOMAINS

1. Focused history taking of adult patient
2. Focused physical examination of adult patient
3. Focused history taking of pediatric patient
4. Focused physical examination of pediatric patient
5. Interpretation of history and physical exam findings
6. Interpretation of results of lab and diagnostics tests
7. Monitoring clinical parameters
8. Monitoring clinical parameters

Number of stations: 10(8+2 Rest stations)

Time for each station : 10 minutes

Marks for each station : 5 marks (As per competency Check list and allotted marks)

Total : $8 \times 5 = 40$ marks

Oral Exam = 10 marks

Total = 50 marks

Note : On completion of procedural competencies in log book and clinical requirements, the NP student is qualified to appear for final practical examination

II year

I.FOUNDATIONS OF CRITICAL CARE NURSING

INTERNAL

OSCE : 50 MARKS

CORE COMPETENCY DOMAINS TO BE EXAMINED

1. Focused history and physical examination and interpretation of findings and results
2. Monitoring competencies (Invasive and noninvasive)
3. Therapeutic interventions – (Emergency procedural competencies) Including drug administration
4. Family Education and counseling

Number of stations :5 (4+1 Rest station)

Time for each station : 10 minutes

Marks for each station : 10 marks (As per competency check list and allotted marks)

Total : $10 \times 4 = 40$ marks

Oral exam = 10 marks

Total = 50 marks

EXTERNAL

OSCE : 100 marks

CORE COMPETENCE DOMAINS

1. Focused history taking, physical examination and interpretation of results of adult patient
2. Focused history taking, physical examination and interpretation of results of pediatric patient
3. Monitoring competencies (Invasive and noninvasive)
4. Monitoring competencies (Invasive and noninvasive)
5. Development of care plan
6. Family education and counseling
7. Therapeutic interventions (Emergency procedures) including drug administrations
8. Therapeutic interventions (Emergency procedures) including drug administrations

Number of stations : 10 (8+2 Rest stations)

Time for each station : 10 minutes

Marks for each station : 10 marks (As per competency Check list and allotted marks)

Total : $8 \times 10 = 80$ marks

Oral exam = 20 marks

Total = 100 marks

II & III. CRITICAL CARE NURSING I & II

INTERNAL

OSCE – 50 marks

CORE COMPETENCY DOMAINS

1. Focused history and physical examination and interpretation of findings and results
2. Monitoring competencies (Invasive and noninvasive)
3. Development of plan of care/care pathway
4. Therapeutic interventions – (Emergency procedural competencies) Including drug administration

Number of stations : 5(4+1 Rest station)

Time for each station : 10 minutes

Marks for each station : 10 marks (As per competency Check list and allotted marks)

Total : $10 \times 4 = 40$ marks

Oral exam = 10 marks

Total = 50 marks

EXTERNAL

OSCE : 100 marks

CORE COMPETENCY DOMAINS

1. Focused history taking, physical examination and interpretation of results of adult patient
2. Focused history taking, physical examination and interpretation of result of pediatric patient
3. Monitoring competencies (Invasive and noninvasive)
4. Family education and counseling
5. Development of plan of care/care pathway
6. Family education and counseling
7. Drug administration
8. Therapeutic interventions (Emergency procedures)

Number of stations : 10 (8+2 Rest stations)

Time for each station : 10 minutes

Marks for each station : 10 marks (As per competency Check list and allotted marks)

Total : $8 \times 10 = 80$ marks

Oral exam = 20 marks

Total = 100 marks

Note : On completion of procedural competencies in log book and clinical requirements, the NP student is qualified to appear for final practical examination

Appendix 1

EQUIPMENT LIST FOR A TEN BEDDED ICU

1. Adjustable electronic cot with mattress – 10
2. IV stand – 20
3. Bed side locker – 11 (10 – patient; 1 – stock)
4. Over bed trolley – 10
5. Dressing trolley (Small) – 5
6. Dressing trolley (medium) – 2
7. Syringe pump – 60
8. Infusion pump – 35
9. Monitors- 11 (10 –patient; 1- stock)
10. Transport monitor/pulseoximeter – 2
11. Ventilators – 12 (10 – patient; 2 – stock)
12. Portable ventilators -2
13. ABG machine – 2
14. ECG machine – 1
15. Ultrasound machine – 1
16. Doppler machine – 1
17. Defibrillator – 2
18. Peripheral Nerve Stimulator – 1
19. Blood warmer – 3
20. Patient warmer – 5
21. Sequential Compression Device – 10
22. Alpha mattress with motor – 15
23. LED shield – 1
24. Crash cart – 1
25. Transfer trolley – 4
26. OR trolley - 2
27. Safe slider – 2
28. Computer – 4
29. Printers – 2
30. Bain circuit – 12
31. Oxygen flow meter – 30
32. Suction port with jar – 15

33. Air flow meter /pulmoaid- 10

34. Refrigerator – 3 (1- feeds, 1- drugs,
35. Metal foot step/foot stool – 10
36. Ambulation chair – 5
37. UPS -1
38. Flat trolley -1
39. Dialysis machine -1
40. Spot light – 2
41. Labelling machine – 1
42. Glucometer – 2
43. Ambu bag with different sizes – 10 sets
44. Fiberoptic bronchoscope – 1
45. Intubating videoscope - 1
46. Minimum standards for Indian ICUS (ICU 6-12 beds) (ISCCM, 2010)

Bed space – minimum 100 sq. ft.

Additional space (storage, Nursing station, doctors room and circulation space)- 100% extra of the bed space.

Oxygen outlets 2

Vacuum outlets 2

Compressed air outlets 1

Electric outlets (2 on each side of patients)

With 5/15 amp pins

Central nursing station

Appendix 2a

CLINICAL LOG BOOK FOR NURSE PRACTITIONER (NP) PROGRAM IN CRITICAL CARE (Specific competencies/Skills) I YEAR

S.No.	SKILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
I	RESEARCH APPLICATION AND EVIDENCE BASED PRACTICE			
1	Preparation of research instrument			
2	Preparation of a manuscript for publication			
3	Writing systematic review			
4	Dissertation Topic:			
II	ADVANCED SKILLS IN LEADERSHIP, MANAGEMENT, AND TEACHING			
1	Preparation of staff patient assignment			
2	Preparation of unit budget			
3	Preparation of staff duty roster			
4	Patient care audit			
5	Preparation of nursing care standards and protocols			
6	Management of equipment and supplies			
7	Monitoring, evaluation, and writing report of infection control practices			
8	Micro teaching / patient education sessions			
9	Preparation of teaching method and media for patients and staff			
10	Planning and conducting OSCE/OSPE			
11	Construction of tests			
III	ADVANCED HEALTH ASSESSMENTS			
1	Comprehensive history taking			
2	Focused physical assessment(System wise)			
2.1	Respiratory system			
2.2	Cardiac system			
2.3	Gastrointestinal			
2.4	Nervous			
2.5	Genitourinary			
2.6	Endocrine			
2.7	Hematological			
2.8	Musculoskeletal			

S.No.	SKILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
2.9	Integumentary			
2.10	Sensory organs			
3	Age specific History & physical examination			
3.1	Geriatric			
3.2	Adult			
3.3	Child			
3.4	Neonate			
4	History & Physical examination of a Pregnant woman			
III	DIAGNOSTIC PROCEDURES			
1	Collecting blood sample			
1.1	Biochemistry			
1.2	Clinical pathology			
1.3	Microbiology			
1.4	ABG			
2	Assisting			
2.1	procedures			
	Paracentesis			
2.2	Thoracentesis			
2.3	Lumbar puncture			
2.4	Liver biopsy			
2.5	Renal biopsy			
2.6	Bone marrow aspiration			
3	Witnessing 3.1			
	procedures Chest			
	X – ray			
3.2	ERCP			
3.3	PET scan			
3.4	Endoscopy			
3.5	MRI / CT			
3.6	Ultrasound			
3.7	EMG			
3.8	Echocardiogram			
4	ECG			
III	GENERAL COMPETENCIES			
1	Admission			
2	Transfer			
3	Transport			
4	Discharge / LAMA			
5	Medico-legal compliance			
6	Family education and counselling			

S.No.	SKILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
7	End of life Care			
7.1	Brain death			
7.2	Organ donation			
8	After life Care			
9	Setting up, use and maintenance of Critical care equipment			
9.1	Ventilator			
9.2	Monitor			
9.3	Transducer / pressure bag			
9.4	Temperature probes			
9.5	SpO ₂ probes			
9.6	Sequential compressing device			
9.7	12 –lead ECG monitor			
9.8	Warmer			
9.9	Fluid warmer			
9.10	ET Cuff pressure monitor			
9.11	Defibrillator			
9.12	Pacemaker			
9.13	Syringe pump			
9.14	Infusion pump			
9.15	Alpha mattress			
9.16	CRASH trolley			
10	Triage			
11	Care during transfer by air ambulance and surface ambulance			

Appendix 2b

CLINICAL LOG BOOK FOR NP IN CRITICAL CARE (Specific competencies/Skills) II Year

S.No.	S KILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
I	GENERAL COMPETENCIES			
1	Setting up, use and maintenance of Critical care equipment			
1.1	Ventilator			
1.2	Monitor			
1.3	Transducer / pressure bag			
1.4	Temperature probes			
1.5	SpO2 probes			
1.6	Sequential compressing device			
1.7	12 –lead ECG monitor			
1.8	Warmer			
1.9	Fluid warmer			
1.10	ET Cuff pressure monitor			
1.11	Defibrillator			
1.12	Pacemaker			
1.13	Syringe pump			
1.14	Infusion pump			
1.15	Alpha mattress			
1.16	CRASH trolley			
1.17	CPAP / BiPAP			
2	Monitoring of critically ill patients			
2.1	Arterial blood gas ABG			
2.2	Oxygen saturation			
2.3	Endotracheal tube cuff pressure			
2.4	Capnography			
2.5	Hemodynamics			
2.6	Electrocardiogram (ECG)			
2.7	Intracranial pressure			
2.8	Invasive BP monitoring			
2.9	Non invasive BP monitoring			
2.10	PiCCO			
2.11	Peripheral vascular status			
2.12	Glasgow Coma Scale			

S.No.	S KILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
2.13	Sedation Scale			
2.14	Pain Score			
2.15	Braden Score			
2.16	Bowel sounds			
2.17	GRBS			
2.18	Partogram			
3	Administration of medication			
3.1	Sedation			
3.2	Muscle relaxant			
3.3	Electrolyte infusion			
3.4	Insulin infusion			
3.5	Inotropes administration			
3.6	Thrombolytic drug			
3.7	Corticosteroid			
4	Infection control			
5	Universal precaution			
6	Disinfection / Sterilization			
7	Preparation of standards/policies/protocols			
8	BLS			
9	ACLS			
10	Management of Cardiovascular Alterations			
10.1	Fluid administration (Colloid/Crystalloid)			
10.2	Blood and blood product administration			
10.3	Application of TED stocking			
10.4	Insertion and Care of CVP line			
10.5	Removal of CVP line			
10.6	Assisting with insertion of arterial line			
10.7	Care of arterial line			
10.8	Removal of arterial line			
10.9	Assisting with insertion of pulmonary artery catheter			
10.10	Care of Patient with Pacemaker			
10.11	Blood collection from arterial line			
11	Management of Pulmonary Alterations			
11.1	Airway application			
11.2	Laryngeal mask airway			
11.3	Assisting with intubation			
11.4	Care of ET tube			
11.5	Extubation			
11.6	Assisting for tracheostomy insertion			
11.7	Tracheostomy care and suctioning			

S.No.	S KILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
11.8	Endotracheal suctioning - Open			
11.9	Endotracheal suctioning - Closed			
11.10	Assisting with insertion of chest tube			
11.11	Care of patient with Chest drainage			
11.12	Chest tube removal			
11.13	Nebulization			
11.14	Oxygen administration			
11.15	Care of patient on Mechanical ventilator			
11.16	Non – invasive ventilation			
11.7	Connecting to Ventilator			
11.18	Weaning from ventilator			
11.19	Use of T-tube and Venturi devices			
11.20	Postural drainage			
11.21	Weaning from tracheostomy			
11.22	Chest physiotherapy			
11.23	Assisting for bronchoscopy			
12	Management of Neurological Alterations			
12.1	Sensory stimulation			
12.2	Consciousness/Coma status monitoring			
12.3	Brain death evaluation			
13	Management of Genitourinary Alterations			
13.1	Cannulating for hemodialysis			
13.2	Starting and closing of hemodialysis			
13.3	Care of patient on hemodialysis			
13.4	Initiating peritoneal dialysis			
13.5	Care of patient on peritoneal dialysis			
13.6	Calculation of fluid replacement			
13.7	Care of patient with continuous urinary drainage			
14	Management of Gastrointestinal Alterations			
14.1	Estimation of dietary allowance			
14.2	Enteral nutrition			
14.2.1	NG feeding			
14.2.2	Gastrostomy / Jejunostomy feeding			
14.3	Test feeds			
14.4	Parenteral nutrition			
14.5	Therapeutic diet planning			
15	Management of Endocrine Alterations			
15.1	Titrating insulin			
15.2	Calculation of steroid administration			
16	Ordering procedures and investigations			

S.No.	S KILLS	NUMBER PERFORMED	DATE	SIGNATURE OF THE PRECEPTOR*
16.1	ECG			
16.2	ABG			
16.3	Chest X ray			
16.4	Ultrasound			
16.5	Biochemistry investigations			
16.6	Microbiology investigations			
17	Ordering Treatment			
17.1	Nebulization			
17.2	Chest physiotherapy			
17.3	Distal colostomy wash			
17.4	Insertion and removal of urinary catheter for female patients.			
17.5	Test feeds			
17.6	TEDS			
17.7	Surgical dressing			
17.8	Starting and closing dialysis			
17.9	Administration of TPN infusion with written order			
17.10	Magnesium Sulphate dressing for Thrombophlebitis / extravasation.			
17.11	Application of Icthammol Glycerin /			
17.12	Pin site care for patients on external fixators			
17.13	Isometric and isotonic exercises			
17.14	Hot and cold applications			

* - When the student is found competent to perform the skill, it will be signed by the preceptor

Appendix 3

CLINICAL REQUIREMENTS FOR NP CRITICAL CARE NURSING PROGRAM

S.No.	CLINICAL REQUIREMENT	DATE	SIGNATURE OF THE PRECEPTOR
I	Clinical Conference		
	Drug studies on standing orders		
II	Case/ Clinical Presentation		
III	Nursing Rounds		
IV	Clinical Seminar		
V	Journal Club		
VI	Nursing Process(NP)/Care study Report		
VII	Advanced Health Assessment		
VIII	Faculty Lecture		
IX	Self directed learning		
X	Written Assignment		

S.No.	CLINICAL REQUIREMENT	DATE	SIGNATURE OF THE PRECEPTOR
XI	Case study analysis		
XII	Workshop		

The number under each category will be finalized based on implementation plan of theory, practical and clinical.

Appendix 4

STANDING ORDERS NURSE PRACTITIONER IN CRITICAL CARE

Nurse practitioners are prepared and qualified to assume responsibility and accountability for the care of critically ill patients. They collaborate with Intensivists, physicians, surgeons and specialists to ensure accurate therapy for patients with high acuity needs. On completion of the program, the NPs will be permitted to administer drugs listed in standing orders as per the institutional protocols/standing orders. They will also be permitted to order diagnostic tests/procedures and therapies as per institutional protocols.

ORDERING INVESTIGATIONS	ORDERING THERAPIES
☐ ECG ☐ ABG ☐ Chest X ray ☐☐☐ Basic Bio chemistry investigations – Hb, PCV, TIBC, WBC Total, WBC differentials, ESR, Electrolytes, platelets, PT, aPTT, bleeding and clotting time, procalcitonin, D dimer, creatinine, HbA1C, AC, PC, HDL, LDL, TIG, Cholesterol total, HIV, HbsAg, HCV, ☐☐☐ Basic Microbiology investigations – blood samples for culture and sensitivity, tips of vascular access and ET tube for culture,	☐ Nebulization ☐ Chest physiotherapy ☐ Distal colostomy wash ☐ Insertion and removal of urinary catheter for female patients. ☐ Test feeds ☐ TEDS ☐ Surgical dressing ☐ Starting and closing dialysis ☐☐☐ Administration of TPN infusion with written order ☐☐☐ Application of Icthammol Glycerin / Magnesium Sulphate dressing for Thrombophlebitis / extravasation. ☐☐☐ Pin site care for patients on external fixators ☐☐☐ Isometric and isotonic exercises

INSTITUTIONAL STANDING ORDERS AND PROTOCOLS

In every hospital, the standing orders for drug administration with specific dosage to be administered during emergency situations can be made available as guidelines for NPCC graduates. The NP students will be trained to administer these drugs under supervision by preceptors/NP faculty. The protocols for ordering selected investigations and carrying out specific therapeutic procedures can also be available in every hospital that trains NPCC students.