

**M. Sc. Nursing Second Year
Clinical Specialty-II,
Medical Surgical Nursing
ORTHOPEDIC NURSING**

**Hours of instruction
Theory: 150 hrs
Practical: 950 hrs
Total: 1100 hrs**

Course Description

This course is designed to assist students in developing expertise and in depth understanding in the field of orthopedic nursing. It will help the students to develop advanced skills for nursing intervention in various orthopedic conditions. It will enable the student to function as orthopedic nurse practitioner / specialist providing quality care. It will further enable the student to function as educator, manager, and researcher in the field of orthopedic nursing.

Objectives

At the end of the course the students will be able to:

1. Appreciate the history and developments in the field of orthopedic nursing.
2. Identify the psycho-social needs of the patient while providing holistic care.
3. Perform physical and psychological assessment of patients with orthopedic conditions and disabilities.
4. Describe various disease conditions and their management.
5. Discuss various diagnostic tests required in orthopedic conditions.
6. Apply nursing process in providing care to the patients with orthopedic conditions and those requiring rehabilitation.
7. Recognize and manage orthopedic emergencies
8. Describe recent technologies and treatment modalities in the management of patients with orthopedic conditions and those requiring rehabilitation.
9. Integrate the concept of family centered, long term care and community based rehabilitation to patients with orthopedic conditions.
10. Counsel the patients and their families with orthopedic conditions.
11. Describe various orthotic and prosthetic appliances.
12. Appreciate the legal and ethical issues pertaining to patients with orthopedic conditions and those requiring rehabilitation.
13. Appreciate the role of alternative system of medicine in care of patients with orthopedic conditions.
14. Incorporate evidence based nursing practice and identify the areas of research in the field of orthopedic nursing.
15. Recognize the role of orthopedic nurse practitioner and as the member of the orthopedic and rehabilitation team
16. Teach orthopedic nursing to undergraduate students and in-service nurses.
17. Prepare a design and layout of orthopedic and rehabilitative units.

Course content

Unit	Time (hrs)	Contents
I	5	<p>Introduction</p> <ul style="list-style-type: none">➤ Historical Perspectives- history & trends in orthopedic nursing➤ Definition & scope of orthopedic nursing.➤ Anatomy and physiology of Musculo-skeletal system➤ Posture ,body ,landmark ,Skeletal system, muscular system, Nervous system-main nerve➤ Healing of –injury, bone injury➤ Repair of ligaments.➤ Systemic response to injury➤ Ergonomic, body mechanics biomechanical measures➤ Orthopedic team
II	8	<p>Assessment of orthopedic patient.</p> <ul style="list-style-type: none">➤ Health Assessment: History, Physical examination, Inspection, Palpation, Movement Measurement Muscle Strength Testing.➤ Diagnostic studies- Radiological Studies, Muscle enzymes, Serologic studies.
III	10	<p>Care of patients with devices.</p> <ul style="list-style-type: none">• Biomaterials(metals, stainless steel, titanium, cobalt, ceramic, polymers etc)• Splints, braces, various types of plaster cast.• Various types of tractions.• Various types of orthopedic beds and mattresses.• Comfort devices.• Implants in Orthopedic.• Prosthetics &Orthotics.

Unit	Time (hrs)	Contents
IV	15	<p>Trauma & injuries</p> <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features Diagnosis, Prognosis, Managements, Medicals surgical and nursing management of : ➤ Early management of trauma. ➤ Fractures ➤ Injuries of the <ul style="list-style-type: none"> ❖ shoulder and arm ❖ elbow ,fore arm, wrist, hand ❖ hip, thigh, knee, leg ankle, foot ❖ spine ❖ head injury ❖ Chest injury: <ol style="list-style-type: none"> a) Polytruma b) Nerve Injuries c) Vascular injuries d) Soft tissue injuries e) Sports injuries f) Amputation
V	8	<p>Infection of bone and joints.</p> <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features Diagnosis, Prognosis, Management, Medical surgical and nursing management of : <ol style="list-style-type: none"> a) Tuberculosis b) Osteomyelities c) Arthritis d) Leprosy
VI	5	<p>Bone Tumors</p> <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features, Diagnosis, Prognosis, Management, Medical surgical and nursing management of : <ol style="list-style-type: none"> a) Bone Tumors-benign, Malignant and metastic. b) Different types of therapies for tumors
		<p>c) Complementary therapies such as Yoga, Masaj, Rekhi therapy Unani Medicines, Ayurvedic treatments, Homeopathic, ect.</p>
VI		<p>Bone Tumors</p> <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features, Diagnosis, Prognosis, Management, Medical surgical and nursing management of : <ol style="list-style-type: none"> a) Bone Tumors-benign, Malignant and metastic. b) Different types of therapies for tumors. c) Complementary therapies such as Yoga, Masaj, Rekhi therapy Unani Medicines, Ayurvedic treatments, Homeopathic, ect.
VII	10	<p>Deformities</p> <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features, Diagnosis, Prognosis- Medical surgical and nursing management of :Scoliosis, Kyphosis, Lardosis ➤ Congenital disorder: Congenital dislocation of hip (CDH), Dislocation of patella, knee. ➤ Varus and Valgus deformities ➤ Deformities of digits

	<ul style="list-style-type: none"> ➤ Rotational deformity of lower extremity in children (torsion, version) ➤ Congenital torticollis. ➤ Meningocele, Meningomyelocele, Spina bifida. ➤ Chromosomal disorders. ➤ Computer related deformities.
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Unit	Time (hrs)	Contents
VIII	5	Disorder of spine <ul style="list-style-type: none"> ➤ Intervertebral disc prolapse, Fracture of the spine ➤ Low back disorder-Low back pain, PID ,spinal stenosis, spondylosis
IX	5	Nutritional/metabolic and endocrine disorders <ul style="list-style-type: none"> ➤ Causes, Pathophysiology, Clinical types, clinical features Diagnosis, Prognosis, Medical surgical and nursing management of : a) Rickets b) Scurvy c) Hyper vitaminosis A and D d) Hypercalcemia, Hypophosphatasia e) Osteomalacia. f) Osteoporosis g) Paget's disease h) Gout i) Gigantism j) Dwarfism k) Acromegaly l) Marfan's Syndrome m) Gaucher's disease n) Renal osteodystrophy o) Therapeutic diets for various orthopedic disorders
X	8	Neuro-muscular disorders <ul style="list-style-type: none"> ➤ Causes ,Pathophysiology, clinical types ,clinical features, diagnosis prognosis medical surgical and nursing management : b) Poliomyelitis, cerebral palsy c) Myasthenia gravis d) Spina bifida-Neural tube defects.

Unit	Time (hrs)	Contents
		e) Peripheral nerve lesion f) Paraplegia , hemiplegia, quadriplegia Muscular dystrophy
X I	8	Chronic/degenerative diseases of joints and autoimmune disorders: ➤ Causes ,Pathophysiology ,clinical types ,clinical features, diagnosis prognosis, medical surgical and nursing management of: a) Osteo Arthritis b) Rheumatoid arthritis c) Ankylosing spondylitis d) spinal disorders e) Systemic Lupus Erythematosus
XII	5	Orthopedic disorders in children ➤ General and special consideration on pediatric orthopedics ➤ Genetic disorders ➤ Congenital anomalies ➤ Growth disorders ➤ Genetic counseling ➤ Amniocentesis ➤ Bone dysplasias ➤ Nurses role in genetic counseling
XIII	5	Geriatric problems ➤ Geriatric population , types of disabilities ,causes, treatment and management – hospitalization ,rest, physiotherapy , involvement of family members ,social opportunities ➤ Care at home – involvement of family and community follow up care and rehabilitation
XIV	6	Pharmacokinetic ➤ Principles of drug administration ➤ Analgesics and anti-inflammatory agents ➤ Antibiotics and antiseptics ➤ Drugs used in orthopedic and neuromuscular disorders ➤ Blood and blood components ➤ Care of drugs and nurses role

XV	30	<p>Nurses role in orthopedic conditions</p> <ul style="list-style-type: none"> ➤ Gait analysis ➤ Urodynamic studies ➤ Prevention of physical deformities ➤ Alteration of body temperature regulatory system and immune systems ➤ Immobilization –cast, splints, braces, and tractions ➤ Prevention and care of problems related to immobility ➤ Altered sleep patterns ➤ Impaired communication ➤ Self care and activities of daily living ➤ Bladder and bowel rehabilitation ➤ Sensory function rehabilitation ➤ Psychological reaction related to disabilities and disorders ➤ Coping of individual and family with disabilities and disorders ➤ Maintaining sexuality <p>Spirituality-A rehabilitative prospective</p>
		<p>Orthopedic Reconstructive Surgeries</p> <ul style="list-style-type: none"> ➤ Basic orthopedic operation techniques ➤ Replacement surgeries-hip, knee, shoulder ➤ Spine surgeries ➤ Grafts and flaps surgery ➤ Deformity correction ➤ Microsurgeries <p>Physiotherapy</p> <ul style="list-style-type: none"> ➤ Concepts, principles , purposes a) Mobilization –exercises: types , re-education in walking, crutch walking, wheel chair, transfer techniques b) Types of gait : non-weight, bearing, partial weight bearing, four point crutch, tripod ,walking with sticks, calipers c) Forms of therapies: Hydrotherapy, Electrotherapy, Wax heat therapy, ice, helio therapy radiant heat d) Chest physiotherapy
XVI	8	<p>Rehabilitation</p> <ul style="list-style-type: none"> ➤ Principles of rehabilitation, definition philosophy, process ➤ Various types of therapies ➤ Special therapies and alternative therapies ➤ Rehabilitation counseling ➤ Preventive and restorative measures ➤ Community based rehabilitation (CBR) ➤ Challenges in rehabilitation ➤ Role of the nurse in rehabilitation ➤ Legal and ethical issues in rehabilitation nursing ➤ Occupational therapy

Unit	Time (hrs)	Contents
XVII	5	National policies and programmes <ul style="list-style-type: none"> ➤ National programmes for rehabilitation of persons with disability, National institutes ,artificial limbs manufacturing corporation District rehabilitation centers and their schemes ➤ Regional rehabilitation centers etc ➤ Public policy in rehabilitation nursing ➤ The person s with disabilities act 1995 , ➤ Mental rehabilitation and multiple disabilities act 1992, ➤ The national trust rules 1999 and 2000 ➤ Rehabilitation council of India ➤ Legal and ethical aspects in orthopedic nursing ➤ Rehabilitation health team and different categories of team members
XVIII	4	Quality assurance <ul style="list-style-type: none"> ➤ Standards, protocols, policies, procedures ➤ Nursing audit ➤ Staffing ➤ Design of orthopedic physiotherapy and rehabilitation unit

Field Visits:

Visit to rehabilitation center.

Visit to workshops where these devices are made.

Visit to paraplegic center.

Visit to rehabilitation center

Visit to physiotherapy unit

Field Visit: Artificial limbs manufacturing corporation , District, Regional rehabilitation center

Practicals

1. Clinical practice in orthopedic ,physiotherapy and rehabilitation unit
2. Application of tractions and plaster casts and removal of tractions and plaster casts and other appliances
3. Apply Theories and Nursing process in the management of patients with orthopedic conditions
4. Provide various types of physical and rehabilitative therapies
5. Provide health education on related diseases condition
6. unit management and plan designing

Clinical Experience

Total: 960 hrs
1 week =30hrs

SN	Dept./unit	No. of weeks	Total hrs
1	Orthopedic ward	8	240 hrs
2	Orthopedic operation theatre	4	120 hrs
3	Neuro surgical ward	2	60 hrs
4	Orthopedic O.P.D.	4	120 hrs
5	Casualty /Emergency and Trauma	4	120 hrs
6	Rehabilitation units	2	60 hrs
7	Physiotherapy	4	120 hrs
8	Pediatric / Pediatric surgery unit	2	60 hrs
9	Field Visit	2	60 hrs
	Total	32 weeks	960 hrs

Procedure Observed

1. X. Ray
2. Ultrasound
3. MRI
4. C T Scan/ bone scan
5. Arthroscopy
6. Electro thermally- assisted capsule shift or ETAC(Thermal capsulorrhaphy).
7. Fluoroscopy
8. Electromyography
9. Myelography
10. Discography
11. Others- Amniocentesis

Procedures Assisted

1. Blood Transfusion
2. IV Cannulation and therapy
3. Ventilation
4. Various types of tractions.
5. Orthopedic surgeries- Arthrocentesis, Arthroscopy, Bone lengthening, Arthrodesis, Grafting, Fractures fixation, reconstructive, reimplantation, replantation, spinal decompression, transplantation of bone, muscle or articular cartilage, auto grafting, allografting. Micro surgeries
6. Injection-Intra articular, intra osseous.
7. Advance Life Support.

Procedures performed

1. Interpretation of X-ray films.
2. Application and removal of splints, casts and braces.
3. Care of tractions- skin and skeletal traction, pin site care.
4. Cold therapy.
5. Heat therapy.
6. Hydrotherapy.
7. Therapeutic exercises.
8. Use of TENS (Transcutaneous electrical nerve stimulation)
9. Techniques of transportation
10. Crutch walking, walkers, wheel chair.
11. Use of devices for activities of daily living and prevention of deformities.
12. Administration of drugs: IV injection, IV cannulation, and Blood transfusion.
13. Procedures for prevention of infections: disinfection and sterilization, surveillance, fumigation.
14. Special skin/ part preparations for Orthopedic Surgeries.
15. Surgical dressings- Debridement.
16. Bladder and bowel training.

References: -

Books:-

1. B.T. Basavanthappa(2005); Orthopedic for Nurses;1st ed;Jaypee Brothers, New Delhi
2. David Dandy, Dennis Edwards(1998); Essential Orthopedic and Trauma;3rd ed;Langman Singapore
3. David Evans(1993); Techniques in Orthopedic Surgery; 1st ed,Blackwell Publications,London
4. Ebnezar's John - Text book of Orthopedics' 3rd Edition J.P. Brother, New Delhi.
5. Mary Powell(1976); Orthopedic Nursing;7th ed.;Churchill Livingstone
6. Maheshwari J., 'Essential Orthopedic' 3rd Edition 2005, Mehta Publications , New Delhi.
7. Natrajan Mayilvahan “ Natrajan’s Text Book of Orthopedic and Traumatology, with multiple choice questions” , 6th Edition, All India Publications and Distributors, New Delhi.
8. Roger Dee & et al (1997); Principles of orthopedic Practice; 2nd ed; Mcgraw Hill
9. Ronald MaRae ‘Clinical Orthopedic Examination’ 5th edition, Churchill Livingstone, 2004.
10. Segelov’s Philip M. ‘Complications of Fractures and Dislocations’ , 1st Edition 1990, champion and Hall Publications.
11. S.Perrycanale ed; (2003); Cambell’s Operative Orthopedics; 10th ed; Mosby
12. Wood Lovell and Robert Winter(1978); Pediatric Orthopedics; Vol. I &II; J.B.Lippincott Co.

Journals:-

1. Journal of Bone and Joint Surgery – British
- American
2. Clinical Orthopedic and Related Research
3. The Journal of Trauma , Injury, Infection and Critical Care
4. Journal Of Pediatric Orthopedics
5. Journal of orthopedic nursing

Scheme of examination:

	Theory		Practical	
	Internal	External	Internal	External
Clinical Speciality-II Orthopedic Nursing	25	75	100	100

Internal Assessment:-

Theory

Test- (2 tests)

Mid term Examination - 50 marks theory

Pre final examination - 75 marks theory

Seminar -50 marks

Project work -75 marks

Total 375 marks

Practical Experience Assignments

Case study : 02 (50 marks each) 50 x 2 = 100

Case Presentation : 02 (50 marks each) 50 x 2 = 100

Care Plan : 03 (50 marks each) 50 x 3 = 150

Clinical Performance Evaluation: 03 (100 marks each) 100 x 3 = 300

Practical Examination Mid Term 50

Pre Term 100

800

Internal Assessment Total marks out of 100

External Assessment Total marks out of 100

Final Examinations :

Theory

Internal : 25

External : 75

Total : 100

Practical

Internal : 100

External : 100

Total : 200

M.Sc. NURSING : CLINICAL SPECIALITY – II

PROFORMA & GUIDELINE FOR CASE STUDY

Area :- (Maximum Marks – 50)

01. Selection of patient.
02. Demographic data of the patient.
03. Medical history past and present illness.
04. Comparison of the patient's disease with book picture.
 - a) Anatomy and physiology.
 - b) Etiology.
 - c) Patho physiology.
 - d) Signs and symptoms.
 - e) Diagnosis - provisional & final
 - f) Investigations
 - g) Complications & prognosis.
05. Management:- Medical or Surgical
 - a) Aims and objectives.
 - b) Drugs and Medications.
 - c) Diet.
06. Nursing Management (Nursing Process approach)
 - a) Aims and objectives.
 - b) Assessment and specific observations.
 - c) Nursing diagnosis.
 - d) Nursing care plan (Short term & long term with rationale.)
 - e) Implementation of nursing care with priority.
 - f) Health teaching.
 - g) Day to day progress report & evaluation.
 - h) Discharge planning.
07. Drug Study.
08. Research evidence.
09. Summary and conclusion.
10. Bibliography.

EVALUATION CRITERIA FOR CASE STUDY.

(Maximum Marks – 50)

SN	Criteria	Marks allotted.	Marks obtained	Total
01.	Assessment	5		
02.	theoretical knowledge about disease	5		
03.	Comparative study of the patient's disease & book picture.	10		
04.	Management: Medical or Surgical.	5		
05.	Nursing Process.	15		
06.	Drug study.	3		
07.	Summary & conclusion including research evidence.	5		
08.	Bibliography.	2		
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	Total	50		

Signature of Student

Signature of Clinical supervisor

M Sc NURSING: CLINICAL SPECIALITY – II

PROFORMA & GUIDELINE FOR CASE PRESENTATION

I] Patient Biodata

Name, Age, Sex, Religion, Marital status, Occupation, Source of health care, Date of admission, Provisional Diagnosis, Date of surgery if any.

II] Presenting complaints

Describe the complaints with which the child has been brought to the hospital

III] Socio-economic status of the family: Monthly income, expenditure on health, food, education etc.

IV] History of Illness (Medical & Surgical)

- i) History of present illness – onset, symptoms, duration, precipitating/aggravating factors
- ii) History of past illness surgery, allergies, medications etc.
- iii) Family history – Family tree, history of illness in the family members, risk factors, congenital problems, psychological problems etc.

V] Diagnosis: (Provisional & confirmed).

Description of disease: Includes the followings

1. Definition.
2. Related anatomy and physiology
2. Etiology & risk factors
3. Path physiology
5. Clinical features.

VI] Physical Examination of Patient (Date & Time)

Physical examination: with date and time.

Clinical features present in the book Present in the patient

VII] Investigations

Date Investigation done Results Normal value Inferences

VIII] Management - (Medical /Surgical)

- a) Aims of management
- b) Objectives of Nursing Care Plan

IX] Treatment:

S.No Drug (Pharmacological name)

Dose Frequency/ Time

Action Side effects & drug reaction

Nurse's responsibility

- Medical or Surgical Management.
- Nursing management

X] Nursing Care Plan: Short Term & Long Term plan.

Assessment Nursing

Diagnosis

Objective Plan of care

Rationale Implementation Evaluation

XI] Discharge planning:

It should include health education and discharge planning given to the patient.

XII] Prognosis of the patient:

XIII] Summary of the case:

IVX] References:

EVALUATION CRITERIA FOR CASE PRESENTATION

Maximum Marks – 50)

SN	Criteria	Marks Allotted	Marks Obtained	Total
1	Content Subjective & objective data.	08		
2	Problems & need Identified & Nsg. Care Plan	15		
3	Effectiveness of presentation	5		
4	Co-relation with patient & Book i. e. research evidence.	10		
5	Use of A. V. Aids	5		
6	Physical arrangement	2		
7	Group participation	3		
8	Bibliography & references	2		
	Total	50		

CLINICAL EVALUATION: COMPREHENSIVE NURSING CARE**(Maximum Marks – 100 each area.)**

Name of the Student

Year: II Year M.Sc Nursing

Duration of Experience:

SN	Criteria	1	2	3	4	5
I	UNDERSTANDING OF PATIENT AS PERSON A. Approach. 1. Rapport with patient/ family members. 2. Collects significant information B. Understanding of patient's health problems. 1. Knowledge about disease condition. 2. Knowledge about investigations. 3. Knowledge about treatment. 4. Knowledge about progress of the patient.					
II	NURSING CARE PLAN A. Assessment of the condition of the patient. 1. History taking – past & present health and illness. 2. Specific observation of the patient. 3. Nursing diagnosis. B. Development of the short – term & long term Nursing care plans. 1. Identification of all problems in the patient/ family. 2. Prioritization & implementation of the plans. 3. Evaluation of the care given & replanning					
III	TECHNICAL SKILL 1. Economical & safe adaptation to the situation & available facilities. 2. Implements the procedure with skill speed & completeness.					
IV	RECORDING & REPORTING 1. Prompt, precise, accurate & relevant. 2. Maintenance of clinical experience file.					
V	HEALTH TEACHING 1. Incidental/ planned teaching with principles of teaching & learning. 2. Uses visual aids appropriately					
VI	PERSONALITY 1. Professional appearance (uniform, dignity, tact fullness interpersonal relationship, punctuality etc. 2. Sincerely, honesty & Sense of responsibility.					
	TOTAL MARKS					

Positive & Negative aspects.

Signature of Student

Signature of Clinical supervisor

Name of College

EVALUATION OF SEMINARS

Date : _____

Name of the Student Nurse:

Date: Time:

Subject:

Topic:

Grade Given:

Name of evaluator :

S.N.	BASIC OF EVALUATION	5	4	3	2	1	REMARK
I	Knowledge of subject matter a. Organisation of subject matter b. Classification of ideas with appropriate and interesting examples c. Depth and mastery of subject matter d. Anticipated question and has prepared for answer e. Selection and organisation of A. V. aids f. Integration and co-relation with other subjects. g. Submitted in time for correction						
II	Oragnisation and management of class a. Budgeting of time b. Asked questions for classification c. Class room participation						
III	Effectiveness of Seminar a. Introduction of topic b. Ability to hold students attention c. Stimulate student participation						
IV	Effectiveness of Seminar a. Questioning clear and stimulating b. Maintaining learning atmosphere c. Use of black board						
V	Personal appearance a. Neatness and Professional appearance b. Degree of self confidence c. Language (Appropriate correct, clear, tone mannerism) d. Punctuality (Starting lesson, completing lesson)						
	Total Hours out of 100						

Evaluator's Comments:

Signature of the Student

Name of the College

NURSING CARE PLAN EVALUATION

B Sc Nursing Course

Name of the Student:

Year & Batch:

Name of the Patient:

Age:

Sex:

M.R.D. No. :

Ward No.

Bed No.

Area of Study : Medical/ Surgical/ Psychiatric

Diagnosis

Name of the Surgery

Date of Surgery

Date of Nursing Care given: From

To

SN	Details	Total Marks	Marks Obtained
1	Assessment	12	
2	Nursing Diagnosis	3	
3	Goal	2	
4	Outcome Criteria / Objectives	2	
5	Nursing Intervention	15	
6	Rationale	3	
7	Evaluation	3	
8	Nurses notes/ Progress report of the patient	10	
Total		50	

Remarks:

Teacher's Sign:

Student's Sign

Teacher's Name:

Date:

References:

1. Janet Hicks Keen : Critical Care Nursing Consultant; Mosby, 1997
2. Kuruvilla Jaya: Essentials of Critical Care Nursing: Jaypee Brothers, Mumbai, 2007
3. Mervyn Singer: Oxford handbook of Critical care; 2nd ed., Oxford University Press, 2005.
4. M. S. Baird, Manual of Critical Care Nursing; 5th ed., Elsevier, 2005
5. P. G. Morton: Critical Care Nursing; 8th ed., Lippincott Williams and Wilkins, 2005
6. Sheree Comer: Delmar's Critical Care- Nursing Care plans; 2nd ed., Thomson, 2005

Journals:-

1. Critical Care Nursing : AACN
2. Critical Care Nursing Clinics