

# NIMS UNIVERSITY, JAIPUR



## SYLLABUS

# BACHELOR OF OCCUPATIONAL THERAPY

## SCHEME OF EXAMINATION –B.O.T.-I

S. N.	Subject	Theory	Practical	Subject Total
1.	Human Anatomy	100	100	200
2.	Human Physiology	100	100	200
3.	Biochemistry	100	-	100
4.	Fundamental of Occupational Therapy-I	100	50	150
5.	Fundamental of Occupational Therapy-II	100	50	150
	TOTAL	500	300	

# **Syllabus for the Bachelor of Occupational Therapy (B.O.T.) Degree Course of NIMS UNIVERSITY, JAIPUR**

## **Regulation:-**

1. Objective of the Bachelor in Occupational Therapy course which is Complementary to medicine shall be to allow the students:
  - (a) To acquire adequate knowledge of basic medical subject and to develop skill and technique of Occupational Therapy approaches.
  - (b) To acquire skills in management, research and teaching in Occupational Therapy as well as guidance and counseling of patients regarding Occupational Therapy.
  - (c) To acquire proper attitude for compassion and concerns for patients and welfare of physically handicapped in the community.
  - (d) To practice moral and ethical values and evidence base practice with regard to Occupational Therapy.
2. Name of the Course- Bachelor of Occupational Therapy (B.O.T.)
3. Duration of the course- the duration of the Bachelor of Occupational Therapy course (B.O.T.) shall be four Year plus six month compulsory rotary-internship.
4. Medium of Instruction: English shall be the medium of instruction for all the subjects of study and for examination of Bachelor of Occupational Therapy Degree Course.
5. Curriculum: the curriculum and syllabi for course shall be as prescribed by the academic council, NIMS University from time to time.
6. Eligibility for Admission: Candidate should have passed class 10+2 examination (12<sup>th</sup> standard or equivalent examination with science stream i.e. physics, Chemistry, Biology and English). Candidates should have completed the age of 17 years as 31<sup>st</sup> Dec. of the year of admission to B.O.T. degree course. Every candidate before admission shall furnish a certificate of medical fitness from an authorized Govt. Medical officer that the candidate is physically fit to undergo the physiotherapy course. Selection of the candidate shall be on the basis of merit entrance examination at the qualifying examination.
7. Compulsory Internship:- Every candidate after successful completion of final examination must undergo six month internship in the Institution he has studied. Internship should be rotating and shall cover clinical branches concerned with Occupational Therapy and it will run under guidance and coordination of the head of the department of Occupational Therapy (such as Orthopedic, Neurology, General Medicine, Pediatrics, General Surgery, Cardio thoracic Surgery, Psychiatry, Obstetrics & Gynecology etc.)
8. Issue of Internship completion Certificate.

# OCCUPATIONAL THERAPY SYLLABUS

## BOT- PART-I

### HUMAN ANATOMY

#### Course Objectives:

- 1) Histology – student should be able to identify describe basic tissues.
- 2) MUSCULO – SKELETAL –
  - i) The student should be able to identify & describe Anatomical aspects of muscle bones and joints & to understand and analyze movements.
  - ii) To understand the Anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to limbs and spine.
  - iii) To be able to localize various surface land-marks.
  - iv) To understand & describe the mechanism, of posture and gait the Anatomical basis of abnormal gait.
- 3) In NEURO – Anatomy-
  - i) To identify and describe various parts of C.N.S. – forebrain, Midbrain, Hind-brain Brain stem, courses of cranial nerves; functional components, course distribution. Anatomical bases of clinical lesions:
  - ii) To describe the source & course of spinal tracts;
  - iii) To describe blood circulation of C.N.S. & spine.
  - iv) Be able to identify the components of C.N.S. & spine.
- 4) THORAX – to identify and describe various components of the contents of the Thorax – with special emphasis to tracheo0-bronchial tree, & cardio – pulmonary system.
- 5) CIRCULATORY – 1) be able to identify & describe the source and course of major arterial venous & lymphatic system, with special emphasis to extremities, Spine and Thorax

#### PRACTICAL:

- i) To be able to demonstrate the movements of various joints
- ii) Distinguish cranial and peripheral nerves
- iii) Distinguish major arteries, veins and lymphatic and special emphasis to extremities and spine.

#### Course Contents:

- 1) General Anatomy Histology of Epithelial, Connecting muscular, nervous tissues -10 Hours
- 2) Musculoskeletal Anatomy - 25 Hours
  - i) Superior extremity -25 Hours
  - ii) Inferior extremity -25 Hours

- iii) Spine, head and neck -07 hours
- iv) Facial muscle & T.M. joint -08 hours
- v) Surface Anatomy -60 hours
- 3) NEURO – Anatomy
  - i) General organization of C.N.S.
  - ii) Cranial nerves
  - iii) Peripheral nervous system
  - iv) C.N.S.
- 4) Systematic Anatomy
  - i) Elementary system -08 hours
  - ii) Uro-genital system (special emphasis to female organs) -10 hours
  - iii) Micro-Anatomy (cartilage, bone, nerve, muscle) -10 hours
  - iv) Cardio-vascular (including Lymphatic) -10 hours
  - v) Respiratory system -06 hours
  - vi) Integrated neuro-muscular - 02 hours
  - vii) Axial skeletal -04 hours
  - viii) Appendicular system -10 hours
  - ix) Sensory organs -08 hours
  - x) Endocrine -02 hours
  - xi) Radiological -05 hours

**TEXT BOOKS:**

- 1) Human Anatomy – by Snell
- 2) Anatomy and Physiology by Smout and McDowell
- 3) Anatomy by Chaurasia all 3 volumes
- 4) Kinesiology by Katherine Wells
- 5) Neuro anatomy by Inderbir Singh
- 6) Human Anatomy by Kadasne
- 7) Neuro anatomy by Shell
- 8) Neuroanatomy by Visharam Singh

**REFERENCE BOOKS:**

- 1) Gray's Anatomy
- 2) Extremities by Quining Wasab
- 3) Atlas of Histology by Mariano Defiore

# HUMAN PHYSIOLOGY

## Course Objectives: At the end of the course, the candidate will –

- 1) Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior (Homeostasis)
- 2) Be able to describe physiological functions of various systems, with special reference to Musculoskeletal, Neuro-motor, Cardio-respiratory, Female uro-genital function and alterations in function with aging.
- 3) Analyze physiological response and adaptation to environmental stresses with special emphasis on physical activity, temperature.
- 4) Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, Cardiovascular and Respiratory system, and Exercise tolerance/Ergography.

## Course contents:

- 1) General Physiology Structure of cell membrane, Transport.  
Across cell membrane and Homeostasis (only short notes) - (4 hours)
- 2) BLOOD-Rh- A B O system and mismatch-transfusion WBC plasma protein Erythrocytes, Hemoglobin, Normal values of Blood.  
(Composition and function - (7 hours)
- 3) NERVE Neuron AHC - (8 hours)
  - i) Structure, classification and properties
  - ii) R.M.P.
  - iii) Action potential;
  - iv) Propagation of nerve impulse
  - v) Degeneration and regeneration
  - vi) Reaction of degeneration (retrograde)
- 4) MUSCLE
  - i) Structure – properties – classification-excitation/contraction coupling
  - ii) Motor unit- E.M.G. –factors affecting muscle transmission
  - iii) Neuro-muscular transmission
- 5) C.N.S -
  - i) Receptor physiology-classification and properties:
  - ii) Synapse-structure, properties, & transmission;
  - iii) Reflexes-classification and properties
  - iv) Sensory & Motor Tracts-effect of transaction (complete and incomplete) at various levels
  - v) Physiology of Touch, Pain, Temperature & Proprioception;
  - vi) Physiology of Muscle Tone (muscle spindle); Stretch

- vii) Vestibular Appralus mainly ottolyth organ Anatomy
  - viii) Function of Basal Ganglia, Thalamus, Hypo-Thalamus, Pre-frontal lobe, P.S.A.
  - ix) Sensory/motor cortex;
  - x) Limbic system;
  - xi) Learning, memory and condition reflex
  - xii) Physiology of Voluntary movement
- 6) EXCRETARY system--
- i) Kidneys structure and function;
  - ii) Urine formation;
  - iii) Micturition – neural control – neurogenic bladder
- 7) TEMPERATURE REGUULATION --
- 8) ENDOCRINE -- (10 hours)
- i) secretion- regulation & function of pituitary-thyroid-adrenal-  
Parathyroid-pancreas
- 9) REPRODUCTIVE system -- (05 hours)
- i) Functions of Estrogen, Progesterone & Testosterone
  - ii) Puberty & Menopause
- 10) SPECIAL senses –
- i) Eye errors of refraction-accommodation – reflexes dark & light adaptation  
Photosensitivity --  
GIT system --
- 11) RESPIRATORY system --
- i) Introduction, general organization
  - ii) Mechanics of respiration
  - iii) Pulmonary Volumes & capacities
  - iv) Anatomical & physiological Dead space-ventilation/perfusion ratio, alveolar ventilation.
  - v) Transport of respiratory gases
  - vi) Nervous & Chemical control of respiration
  - vii) Pulmonary function tests- Direct and indirect method of measurement
  - viii) Physiological changes with altitude and acclimatization
- 12) CARDIO – VASCULAR --
- i) Structure and properties of cardiac muscle;

- ii) Cardiac cycle;
- iii) Heart rate regulation-factors affecting
- iv) Blood pressure- definition – regulation-factors affecting
- v) Cardiac output-regulation and function affecting
- vi) Peripheral resistance, venous return
- vii) Regional circulation coronary-muscular, cerebral
- viii) Normal ECG.

13) EXERCISE Physiology -

- i) Effects of acute & chronic exercises:
- ii) Oxygen/CO<sub>2</sub> debt-
  - i) Effects of exercise on muscle strength, power, and endurance, B.M.R.R.Q. hormonal and metabolic effects-respiratory & cardiac conditioning.
  - ii) AGING
  - iii) Training fatigue and recovery
  - iv) Fitness related to age, gender & body type.

14) A.N.S. -

Sympathetic/parasympathetic system-adrenal medulla-functions-Neuro Transmitters-role in the function of pelvic floor (micturation, defecation labou

**PRACTICAL:**

- 1) Hematology – (demonstration only) -- (15 hours)
- 2. GRAPHS -- (14 hours)
- 3) Physical fitness -- (12 hours)
  - i) Breathe holding
  - ii) Mercury column test:
  - iii) Cardiac efficiency test- Harvard step test- Master step test
- 4) Blood pressure – effects of change in posture and exercise -- (08 hours)
- 5) Steothragraphy -- (04 hours)
- 6) Spirometry -- (04 hours)
  - i) Lung volumes ii) timed vital capacity
- 7) Bicycle ergography -- (04 hours)
- 8) Perimetry --- (04 hours)
- 9) Clinical examination -- (15 hours)

Respiratory/CVS/higher functions/memory/time/orientation/reflexes/motor and sensory system/cranial nerves.

**TEXT BOOKS:**

- 1) Course in Medical Physiology – Vol. 1 & Vol. II by Dr. Choudhari
- 2) Medical Physiology – by Dr. Bijlani
- 3) Text book on Medical Physiology – by Gyton
- 4) Text book of Physiology – A.K. Jain

**REFERENCE BOOKS:**

- 1) Review of medical physiology – Guyton
- 2) Samson & wrights applied physiology
- 3) Human Physiology – Chaudhary & Bijlani
- 4) Essentials of Medical Physiology – K. Semubulingam

# BIOCHEMISTRY

**Course Objective:** The students should be able to

- 1) Describe normal functions different components of food, enzymes, discuss in brief factors affecting enzyme activity.
- 2) Define basal metabolic rate & factors affecting the same (in brief), with special reference to obesity.
- 3) Explain nutritional aspects of carbohydrates, lipids proteins and vitamins and their metabolism.
- 4) Describe in details biochemical aspects of muscle contraction.
- 5) Understand different aspects of nucleic acid.
- 6) Acquire knowledge in brief about the Clinical biochemistry, with special reference to Liver and renal function test, blood study for lipid profile, metabolism of fat, carbohydrates, proteins, bone minerals, & electrolyte balance.

**Course contents:**

- 1) Carbohydrates -- (08 hours)
  - a) Chemistry, definition, classification with examples, functions.
  - b) Digestion and absorption, glycogenesis, glycolysis, TCA cycle, hormonal regulation of blood glucose, diabetes mellitus, glycosuria, changes in Carbohydrate, protein and lipid metabolism.
- 2) PROTEINS -- (04 hours)

Definition, importance, functional/classification, digestion and absorption, decarboxylation, deamination, transamination, transmethylolation, Urea cycle, clinical significance of serum urea, function of glycine, Phenylalanine, tryptophan, methionine tyrosine.
- 3) ENZYMES - (04 hours)

Definition, modern classification, factors affecting enzymes action, diagnostic and therapeutic uses and enzymes, iso-enzymes, competitive and non competitive inhibition.
- 4) VITAMINS - (03 Hours)

Definition, classification, fat and water soluble vitamins, functions, deficiency manifestations sources & RDA
- 5) MINERALS -- (03 hours)

Ca, P, Fe, I, Zinc, Selenium, Fluorine, Magnesium, Function sources, Deficiency manifestations.
- 6) Hormones - (01 hours)

Definition with mechanism of action, classification.
- 7) NUTRITION -- (03 hours)

Composition of food, balanced diet, kwashiorkor, marasmus, nitrogen balance, major dietary constituent and their basal metabolic rate, factors affecting BMR and their importance.
- 8) Clinical Biochemistry --(03 hours)

Liver function test, kidney function test, Lipid profile in serum.
- 9) LIPID - (04 hours)

Definition, classification with examples, biomedical importance, Phospholipids and lipoproteins functions. Digestion and absorption of lipid B- oxidation of fatty acid with energetic, Ketone bodies and their and metabolism, cholesterol, importance of cholesterol, obesity.

10) Muscle Contraction -- (02 hours)

Mechanism and Biochemical, events

11) NUCLEIC ACID - (02 hours)

Function of DNA, RNA, genetic code specialized products of amino acids phenylalminetryosine, trptophan, glycine, methionine. Transmionation deamination and urea cycle (protein)

12) Clinical significance of some importance biochemical constituents

in serum in various diseases -(03 hours)

**TEXT BOOKS:-**

Medical Biochemistry: U. Satyanarayan

Biochemistry: Dr. Vasudev

# FUNDAMENTALS OF OCCUPATIONAL THERAPY – I

## Course Objectives:

The students will be able to fulfill the following objectives of the course-

- 1) a. Describe the history and development of Occupational Therapy internationally. Describe the present development of Occupational Therapy in India including organization of All India Occupational Therapists association.  
b. Define Rehab, discuss philosophy of rehab with reference to principles of physical medicine and briefly outline the role of different team members, describe Occupational therapists contribution as a part of total rehab team.
- 2) Briefly explain theory of Occupation and various area of occupation understanding various dimensions as applied to Occupational Therapy.
- 3) Describe the occupational performance model with respect to physical dysfunction, treatment continuum based on this model and relationship of the model to treatment approaches viz. biomechanical, motor control and rehabilitation.
- 4) Describe generalized and specific principles of therapeutic exercises. Explain type of movements, muscle contraction used in exercise. Describe classification of exercises and application to activity. State application of principles to develop muscle strength, endurance, coordination, range of motion. Briefly outline principles of progressive exercises; brief repetitive isometric exercises and regressive resistive exercises.
- 5) Describe therapeutic modalities. Outline treatment objectives for purposeful activities and its characteristic. Describe principles of activity analysis in respect to biomechanical, sensory motor and socio-cultural aspects. Briefly, outline criteria for selection of activity.
- 6) Describe principles and methods of testing range of motion and muscle strength.
- 7) Define, classify and state various testing methods of sensation, perception, coordination and muscle tone.

## PRACTICALS:

- 1) Acquire the skill of assessment of range of motion of joints of U.E. & L.E. on normal subjects.
- 2) Acquire the skill of assessment of group muscle strength in U.E. & L.E. on normal subject.
- 3) Analyze activities such as shoulder wheel, bicycle fretsaw, eating, inclined sanding, medicine ball kicking.

## Course Content:

- 1) Definition and scope of Occupational Therapy - (10 hours)
  - a) History & development of O.T.
  - b) Rehabilitation Philosophy, rehab team, need of rehab. Principles of physical medicine.
- 2) Theory of Occupation- (05 hours)

Forms of occupation, occupation as evolutionary trait, biological dimensions. Social dimensions, Psychological dimensions of occupation, application of theory to occupational therapy.

- 3) Occupational performance model with respect to physical dysfunction - (05 hours)  
Treatment continuum based on this model and relationship of the model to treatment approaches viz biomechanical, motor control and rehabilitation.
- 4) Principles of Therapeutic Exercises: - (15 hours)
  - a) Generalized and specific principles
  - b) Types of movements, muscle contraction used in exercise.
  - c) Exercise classification and application to activity
  - d) Objective to develop i) Power ii) Endurance iii) coordination iv) ROM
  - e) Progressive resistive exercise (PRE), Regressive resistive exercise (RRE), brief repetitive isometric exercise (BRIME)
- 5) Therapeutic Modalities - (10 hours)  
Purposeful activity and characteristics
- 6) Activity Analysis: - (15 hours)
  - i) Principles of activity analysis
    - ii) Biomechanical and sensory motor
    - iii) Adapting and grading activity
    - iv) Selection of activity
- 7) Principles and methods of assessment - (10 hours)
  - i) Joint range of motion
  - ii) Muscle strength
- 8) Definition, classification, variation in testing methods of following- (10 hours)
  - a) Muscle tone
  - b) Coordination
  - c) Sensation
  - d) Perception

**PRACTICALS:**

- 1) Assessment of joint range of motion of U.E. & I.E. on normal subject -(80 hrs)
- 2) Assessment of group muscle strength U.E. & I.E. on normal subject -(80 hrs)
- 3) Activities to be analyzed shoulder wheel, bicycle fretsaw, eating, inclined Sanding, medicine ball kicking.

**TEXT BOOKS RECOMMENDED:**

- 1) Muscle Testing & function by F.P. Kendall
- 2) Occupational Therapy for Physical Dysfunction by C.A. Tromby
- 3) Measurement of joint motion: a guide to goniometry by C.C. Norring and D.J. White.

- 4) Willard and Spackman's Occupational Therapy
- 5) Introduction to Occupational Therapy by Ann. Turner
- 6) O.T. Practice skills for Physical Dysfunction by L.V. Pedretti
- 7) Principle of Exercise by J. Basmajian & Wolf
- 8) Therapeutic Exercises by J. Basmajian & Wolf
- 9) Daniel's & Worthingham's Muscle testing.

# FUNDAMENTALS OF OCCUPATIONAL THERAPY- II

## Course Objective:

The students should be able to fulfill the following objectives of this course.

- 1) a) Define human development and explain the importance of its knowledge in occupational therapy.
- b) Enumerate with examples the various aspects of human development such as physical, sensory, motor, cognitive, emotional, cultural and social.
- c) Specify and describe biological environmental and inherited factors influencing human growth and development and its importance related to Occupational Therapy.
- 2) a) Specify general principles of human maturation
- b) Explain following anatomic directional principles of human development.
  - i. Cephalocaudal pattern of development.
  - ii. Proximodistal pattern of development
  - iii. Mediolateral pattern of development
  - iv. Mass to specific pattern of development
  - v. Gross to fine motor pattern of development
- 3) Define and classify activities of daily living (ADL). Explain evaluation of ADL and give outline of various scales used. Outline principles and specific techniques in ADL training. Describe briefly achieving access to home, accountability and work place. Briefly explain the sociocultural – economic deviations. Outline the principles of adaptation process. Define adaptive devices.
- 4) Explain briefly occupational therapy as diagnostic and prognostic procedure
- 5) Explain in brief the following steps involved in preparing the client for return to work.
  - a) Prevocational evaluation
    - i) Evaluation of work capacity
    - ii) Evaluation of physical capacity
    - iii) Evaluation of functional capacity
- 6) Have a brief knowledge of different types of tools and equipments and their uses in Occupational Therapy. Explain therapeutic uses and maintenance of tools and equipments.
- 7) Define and classify splints with their brief description, state general principles of splinting, describe material used.
- 8) Describe hand function and evaluation methods.
  - a) Functional anatomy of hand
  - b) Prehension and grasp patterns
  - c) Grip and pinch strength

- d) Functional evaluation of hand
- e) Oedema assessment

**PRACTICALS:**

- 1) Acquire the skills of designing a paper model of hand splints viz. finger Gutter, resting pan, long opponens, radial bar cock-up, radial nerve splint using extension outrigger.
- 2) Identify tools and equipments, their parts, uses and therapeutic uses.
- 3) Analyze jobs such as tailoring, data entry on computer, wood cutting, envelop making.

**Course Content:**

- 1) Basic concepts on human development - (10 hours)
  - a) Importance of knowledge base, definitions
  - b) Aspects of human development – physical, motor, sensory, cognitive, and emotional Cultural, social.
  - c) Factors influencing human growth and development – biological, environment, inherited.
- 2) Principles of maturation:-
  - a) General principles
  - b) Anatomic directional principles
    - i. Cephalocaudal patterns of development
    - ii. Proximal distal patterns of development
    - iii. Medial lateral patterns of development
    - iv. Mass to specific patterns of development.
    - v. Gross motor to fine motor patterns of development
- 3) Activities of daily living - (10 hours)
  - a) Definition
  - b) Classification
  - c) Evaluation of ADL
  - d) Various scales used in ADL (Barthel, Katz, Kenny’s, Klein-Bell, AMP’s Indices)
  - e) Principles & specific techniques in ADL training for:
    - i) Weakness
    - ii) Low endurance
    - iii) Limited ROM
    - iv) In coordination
    - v) Loss of use of one side of body

- vi) Limited vision
- vii) Decreased sensation
- f) Achieving access to home, community and work place.
- g) Adaptation:
  - i) Adaptation process
  - ii) Introduction to adapted devices
- h) Cultural and socio-economical deviations in ADL
- 4) Occupational Therapy as diagnostic & prognostic procedure -(3 hours)
  - a) Definition of evaluation
  - b) Types of evaluation
  - c) Steps involved in evaluation
- 5) Preparing for return to work -(7 hours)
  - a) Prevocational capacity evaluation
    - i) Work capacity evaluation
    - ii) Physical capacity evaluation
    - iii) Functional capacity evaluation
- 6) Crafts: Knowledge of tools, equipment, materials, their therapeutic values & uses. (5 hours)
- 7. Hand function and evaluation methods:
  - a) Functional anatomy of hand
  - b) Prehension and grasp patterns
  - c) Grip and pinch strength
  - d) Functional evaluation of hand
  - e) Oedema assessment
- 8) Introduction to hand splints: Definition, classification, principles, material used in designing & fabrication- (10 hours)

#### **PRACTICALS:**

- 1) Design a paper model of following hand splints -(90 hours)
  - a) Finger Gutter
  - b) Resting pan
  - c) Long opponens
  - d) Radical bar cock-up
  - e) Radical nerve splint using extension outrigger
- 2) Job analysis (80 hours): Tailoring, data entry on computers, wood cutting, envelop making.
- 3) Identify tools and equipments, their parts, uses and therapeutic uses. -(10 hrs)

**TEXT BOOKS RECOMMENDED:** (Latest edition of the following books are recommended)

1. Willard and Spacksman's Occupational Therapy
2. Introduction to Occupational Therapy by Ann Turner
3. Occupational Therapy: Practice skills for Physical dysfunction by- L.V. Pedretti
4. Occupational Therapy for Physical Dysfunction by – C.A. Trombly
5. An approach to Occupational Therapy by – Mary Jones

## SCHEME OF EXAMINATION –B.O.T.-II

S. N.	Subject	Theory	I.A (Theory)	Total Theory	Practical	I.A Practical	Total Practical	Subject Total
1.	Pharmacology	40	10	50	-	-	-	50
2.	Pathology and Microbiology	80	20	100	-	-	-	100
3.	Psychology	80	20	100	-	-	-	100
4.	Ergotherapeutics-I	80	20	100	80	20	100	200
5.	Ergotherapeutics-II	80	20	100	80	20	100	200

# NIMS UNIVERSITY, JAIPUR

## Occupational Therapy Syllabus

### BOT- PART-II

Total Transcript Hours 35 hours/wk. 40 wks/year=1400 hours)

1. PHARMACOLOGY -50 hours
2. PATHOLOGY -50 hours
3. MICROBIOLOGY -30 hours
4. PSYCHOLOGY- Theory – 100 hrs + Practical – 10 hrs= 110 hours
5. Ergo-therapeutics- I Theory – 100 + Practical – 160 hrs= 260 hours
6. Ergo-therapeutics-II Theory 100 hours+ Practical-160 hrs= 260 hours
7. Supervised Clinical Practice -640 hours.

(To practice clinical skills under the supervision of clinical supervising staff and to maintain folder in which prescribed case histories and written assignment are to be documented and to obtain the signature from the respective section in charge at the end of the clinical posting)

# PHARMACOLOGY

(DIDACTIC- 50 hrs)

**Course Objectives:** At the end of the course the candidate will be able to –

- 1) Describe Pharmacological effects of commonly used drugs by patients referred for Occupational Therapy; list their adverse reactions, precautions to be taken b& contraindications, formulation and route of administration.
- 2) Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Occupational Therapy & vise-a-versa.
- 3) Indicate the use of analgesics and anti-inflammatory agents with movement disorders with consideration of cost, efficiency and safety for individual needs.
- 4) Get the awareness of other essential and commonly used drugs by patients- The bases for their use and common as well as serious adverse reactions

## Course Content:

- A) MUST KNOW-
  - i. Drugs described in topics no. 2 to 9.
  - ii. Pharmacological effects and mechanism, formulation, route of administration salient Pharmo-kinetic feature.
  - iii. Adverse reactions;
  - iv. Precautions and contra-indications.
- B) DESIRABLE
  - i. Major group of drugs described in topics no. 10, 11 & 12
  - ii. Bases of use indicated conditions.
  - iii. Common and serious adverse reactions.

## TOPICS-

- 1) General Pharmacology -- (5 hrs)  
\* Drug Pharmco-kinetics-Pharmacology-adverse reaction- factors modifying drug effect.
- 2) Drug activity of CNS -- (7 hrs)  
\* Introduction (1 hr) alcohols+ Sedatives and hypnotics (2 hrs), Anti-convulsion - (1 hr)  
Analgesics & Antipyretics – specially Gout. & R.A. (3 hrs) Psycho Therapeutics - (1 hr)  
General anesthetic + local anesthetic (1 hr)
- 3) Drugs acting on peripheral nervous system -- (2 hrs)
  - i) Adrenergic (1 hr) ii) Cholinergic (1 hr)

- 4) Drug therapy in Parkinsonism - (2 hrs)
- 5) Skeletal muscle relaxants - (2 hrs)
- 6) Drugs acting on CVs - (6 hr)
  - i) Hyper tension ii) Beta blockers, iii) Ca channel ACEI
  - iv) Blockers (prazosin) - (1 hr)
 Diuretics (1 hr) CCF- (1 hr) Angina (1 hr) Antiarrhythmia + Shock (1 hr.) Drug satisfying Homeostasis (1 hr)
- 7) Drugs acting on Respiratory system -- (4 hrs)
 

For upper respiratory tract infections sinusitis – cough, laryngitis, pharyngitis for Bronchial asthma – (1 hr) for COPD – effects of prolonged drug administration - (1 hr)
- 8) Insulin (1 hr) & oral anti-diabetic drugs (1 hr) -- (2hrs)
- 9) Cheml-therapy - (3 hrs)
  - i) General principles (1 hr.) ii) anti tuberculosis (1 hr) & iii) anti-leprosy (1hr)
- 10) Other Chemo Therapeutic drugs -- (2 hrs)
  - i) Sulfa drugs in urinary tract infection, ii) tetra/chlora
- 11) Endocrine - (4 hrs)
  - i) Introduction, Thyroid & Antithyroid (1 hr) ii) Estrogen + Progesterone - (1 hr)
  - iii) Steroids anabolic steroids (2 hrs)
- 12) Drugs in G.I. tract - (4 hrs)
  - i) Peptic ulcer + antiemetic (3hrs) ii) Diarrhoea & constipation - (1 hr)
- 13) Heamatinics, Vitamin B; Iron - (1 hr)
- 14) Dermatological -----Scabies – Psoriasis – Local antifungal – (1 hr)
- 15) Vaccines & Sera - (1 hr)
- 16) Vitamin – D. Calcium, Phosphorus, Magnesium - (1 hr)

**TEXT BOOKS:**

- 1) Pharmacology and pharmacotherapeutics – by Satoskar and Bhandarkar
- 2) Textbook of pharmacology – by K. Tripathi

## SCHEME OF EXAMINATION (THEORY ONLY)

(Theory – 40 marks + internal assessment – 10 marks)

(There shall be NO L.A. Qs in this paper)

\*Section – A – Q-1, M.C.Q. – based on single best answer in MUST KNOW area-10 marks

\* Section –B-Q-2-S.A.Q- To answer any FIVE out of six (5 x 3) -15 marks

\* Section-C-Q-3-S.A.Q.- To answer any THREE out of four (3x5) --15 marks

\* Emphasis should be given to the drugs related to Musculo-skeletal/Psycho-Neurological/Cardio-Vascular/Respiratory conditions/analgesics and anti-inflammatory conditions.

**INTERNAL ASSESSMENT** – Two exams of 40 marks each ---- Total – 80 marks

(The average of total marks obtained to be considered for Internal Assessment)

# PATHOLOGY AND MICROBIOLOGY

(DIDATIC – 50 hrs)

## (1)PATHOLOGY

### Course Objectives-

At the end of the course, the student will be able to-

- 1) Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs-; capacity of the body in healing process
- 2) Recall the Etio – pathogenesis, the pathological effects & the clinico – Pathological correlation of common infections & non-infectious diseases.
- 3) Acquire the knowledge of concepts of neoplasia with reference to the Etiology, gross & microscopic features, diagnosis, & prognosis in different tissues, & organs of the body.
- 4) Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance (with special emphasis to neuro-musculo-skeletal & cardio-respiratory systems)
- 5) Acquire knowledge of common immunological disorders & their resultant effects on the human body.
- 6) Understand in brief, about the Hematological diseases & investigations necessary to diagnose them & determine their prognosis.

### Course Contents: - (4 hrs)

- 1) a) - General Pathology- Cell injury-causes, mechanism & toxic injuries with Special reference to Physical, Chemical, & ionizing radiation
- b) Reversible injury (degeneration)- types-morphology,- swelling, hyaline, fatty Changes,
- c) Intra-cellular accumulation-hyaline mucin,
- d) Irreversible cell injury-types of necrosis- apoptosis – calcification- dystrophic & metastasis,
- e) Extra-cellular accumulation-amyloidosis, calcification-Pathogenesis- morphology
- 2) Inflammation & Repair: - (4 hrs)
- a) Acute inflammation – features, causes, vascular & cellular events,
- b) Morphologic variations,
- c) Inflammatory cells & mediators,

- d) Chronic inflammation:- causes, types, non-specific & granulomatous – with examples
  - e) Wound healing by primary & secondary union factors promoting & delaying healing process.
  - f) Healing at various sites- including-bones, nerve & muscle
  - g) - Regeneration & repair
- 3) Immuno – pathology – (Basic concepts -(2 hrs)
- a) Immune system – organization-cells-antibiotics – regulation of Immune responses.
  - b) Hyper-sensitivity
  - c) Secondary immune-deficiency including HIV
  - d) Organ transplantation
- 4) Circulatory disturbances- (4 hrs)
- a) Edema – pathogenesis – types – translates/exudates.
  - b) Chronic venous congestion- lung, lever, spleen
  - c) Thrombosis – formation – fate – effects
  - d) Embolism – types –clinical effects
  - e) Infarction – types – common sites
  - f) Gangrenes – types – An etiopathogenesis
  - g) Shock – Pathogenesis, types, morphologic changes
- 5) Deficiency disorders – Vitamins A, B, C, D-(2 hrs)
- 6) Growth Disturbance -(4 hrs)
- a) Atrophy-malformation,l agenesis, dysplasia.
  - b) Neoplasia classification, histogenesis, biologic behaviors, difference between benign & malignant tumour
  - c) Malignant neoplasms-grades-stages-local and distal spread.
  - d) Carcinogenesis – environmental carcinogens
  - e) Chemical, Occupational, heredity, viral
  - f) Precancerous lesions and ca in situ
  - g) Tumor & host interactions – systemic effects – metastatic or direct spread of tumors affecting bones, spinal cord, leading to paraplegia, etc.
- 7) Medical Genetics – (In brief) - (1 hr)
- 8) Specific Pathology: - (4 hrs)
- a) CVS



- 16) Skin- Melanin pigment disorders – Vitiligo – Tinea - (2 hrs)  
Versicolor-Psoriasis –Bacterial/fungal infections- cutaneous TB  
Scleroderma, SLE, Leprosy Alopecia
- 17) Clinical pathology – (including Demonstrations) - (4 hrs)
- a) Anemia – (Deficiency) – TC/DC/Eosinophilia, E.S.R. C.P.K
  - b) Muscle/skin/nerve biopsy
  - c) Microscopic appearance of muscle necrosis-fatty infiltration
  - d) Lab investigation in liver & renal failure

**TEXT BOOKS:**

1. Text book of Pathology - by Harsh Mohan
2. Pathologic basis of disease by Cotran, Kumar, Robbins
3. General Pathology – by Bhende

## SCHEME OF EXAMINATION (THEORY ONLY)

. \* Pathology – 50 marks + Microbiology – 30 marks = 80 marks+ I.A.-20 marks

Total -100 marks

(There shall be No L.A.Q.s in this paper)

# Emphasis to be given to topics related to Muskulo Skeletal/Neurological/Cardiovascular/Respiratory conditions and Wound/Ulcers

Section A-M.C.Q. based on Single best answer from all topics in syllabus-time -30 min

Q1. Based on Pathology (1 x 20) --20 marks

Q2. Based on Microbiology (1 x20) --10 marks

Section B.Sc. A.Q. based on Pathology

Q3. To answer any Three out of Four (3 x 5) --15 marks

Q4. To answer any Three out of Four (3x5) --15 marks

Q5. Answer any Four out of Five (4 x5) -20 marks

### INTERNAL ASSESSMENT:

Two exams in Pathology having 25 marks each and two exams in Microbiology – 25 marks each - Total 100 marks, the average of total marks obtained to be considered for IA.

## (2)MICROBIOLOGY

Didactic – 30 hrs

### Course Objectives:

At the end of the course, the candidate will have sound knowledge of the agent responsible for causing human infections, pertaining to C.N.S., C.V.S. Musculoskeletal & Respiratory system.

### Course Content:

- 1] General Microbiology i) Introduction & scope - 1 hrs
- 2] Classification of Micro-organisms & morphology of Bacteria - 1 hrs
- 3] Sterilization & disinfection [basic concepts] - 2 hrs  
Hospital acquired infection, universal safety precautions, waste disposal -2 hrs
- 4] Immunology -- 5 hrs
  - i) Antigen antibody – reaction & application for diagnosis;
  - ii) Immune response – normal / abnormal
  - iii) Innate immunity & acquired immunity [vaccination]
  - iv] Hyper – sensitivity & auto-immunity
- 5] Laboratory Diagnosis of Infection -- 3hrs
- 6] Bacteriology -7 hrs
  - i) Infection caused by gram +ve cocci; Gas gangrene – clostridium – Diphtheria
  - ii) Infection caused by gram –ve cocci, Septicemia-cholera – Shock –Typhoiddiarrhoea;
  - iii) Mycobacterial infection tuberculosis-Leprosy-Atypical Mycobacterium
  - iv) Syphilis – morphology & pathogenesis [VDRL]
- 7] Viruses -3 hrs
  - i) Introduction & general properties,
  - ii) HIV
  - iii) Hepatitis
  - iv) Polio, measles, congenital viral infections, Rubella, CMV Herpes
- 8] Mycology -1 hrs  
Mycetoma – Aspergilosis – candidiasis
- 9] Parasites affecting C.N.S. -2 hrs  
Malaria – Filaria – Toxoplasma – Cystisarcosis & echinococcus
- 10] Applied Microbiology --3 hrs

As relevant to diseases involving Bones, Joints – Nerves – Muscles-Skinbrain-cardiopulmonary system, & burns.

**TEXT BOOKS:**

Text books of Microbiology – by R. Ananthnarayan & C.K. Jayram Panikar.

## SCHEME OF EXAMINATION (THEORY ONLY)

# Pathology – 50 marks + Microbiology – 30 marks = 80 marks + I.A. – 20 marks

Total -100 marks

(There shall be NO L.A.Q.s in this paper)

#Emphasis to be given to topics related to Muskulo Skeletal/Neurological/Cardiovascular/Respiratory conditions & Wound/Ulcers/

Section A-M-C.Q. based on Single best answer from all topics in syllabus time 30 min

Q1. Based on Pathology (1 x 20) --20 marks

Q2. Based on Microbiology (1 x 10) --10 marks

Section B-S.A.Q. based on Pathology

Q3. To answer Any Five out of Six (5 x 3) --15 marks

Q4. To answer any THREE out of Four (3 x 5) --15 marks

Section C.S.A.Q. based on Microbiology

Q5. Answer any FOUR out of Five (4 x 5) --20 marks

### INTERNAL ASSESSMENT:

Two exams in Pathology having 25 marks each and two exams in Microbiology -25 marks each -Total 100 marks the average of total marks obtained to be considered for IA.

# PSYCHOLOGY

(General, Developmental, Abnormal, Experimental Psychology)

Total hours: 110 (Theory + Seminar – 100 Practical – 10)

Theory: 100 Marks Final exams: 80 Marks, Internal Assessment: 20 Marks)

## Course Objectives:

The student will be able to fulfill the following objectives:

1. Give outline of fields of psychology and various schools of thought.
2. Describe different aspects of attention, perception, emotion, stress, motivation, thinking, language communication.
3. Explain theories of emotion, motivation, personality, memory and intelligence.
4. Comprehend developmental theories and describe all aspects of human development from infancy to adulthood.
5. Explain the various facts of old age and issues of death and dying.
6. Describe meaning, classification and casual factors of abnormal behavior.
7. Understand mechanics of brain and carry out basic neuro-psychological experiments on sensory system, learning and retention, memory, perception, emotion, motor behavior and reaction time, motivation, rewards, attention

## Course Contents:

- A) GENERAL PSYCHOLOGY: - (60 hrs)**
1. Introduction to psychology - (4 hrs)
  2. Fields of Psychology, Schools of thoughts - (6 hrs)
  3. Attention – definition and its type - (3 hrs)
  4. Perception – form perception, depth perception, constancy, movement  
Plasticity and individual differences in perception - (5 hrs)
  5. Stress – types, stress cycles and coping with stress - (3 hrs)
  6. Feeling & emotion- Physiology and theories of emotion - (4 hrs)
  7. Motivation – theories of motivation, different types of motives and sources of conflicts and adjustment. - (5 hrs)
  8. Personality- theories of personality and types of assessments of personality- (5 hrs)
  9. Communication and language - (5 hrs)
  10. Intelligence – nature and theories of intelligence, individual differences and enumerate types of assessments of intelligence - (5 hrs)
  11. Memory & retention – theories and memory, short term and long term memory, forgetting, amnesia, methods of improving memory - (5 hrs)

- 12 Basic principles of human learning- Definition of learning & basic Principles of human learning.
- 13 Thinking – thinking process, concepts, problem solving, decision making and creative thinking.

**B) DEVELOPMENTAL PSYCHOLOGY (20 HRS) (HRS EACH SUBTOPIC)**

1. Introduction to developmental theories.
2. Individual differences in behavior
3. Influence of heredity and environment
4. Infancy
5. The early childhood
6. The middle childhood
7. Puberty – Physiological and Psychological changes
8. The adolescent state.
9. Early and middle adulthood
10. Old age

**C) ABNORMAL PSYCHOLOGY - (20hrs)**

1. Meaning of abnormal behavior - (6 hrs)
2. Classification of abnormal behavior - (6 hrs)
3. Causal factors in abnormal behavior - (8 hrs)

**D) EXPERIMENTAL PSYCHOLOGY - (10hrs)**

Mechanics of brain and neuropsychological experiments on sensory system, learning and retention, memory, perception, emotion, motor, behavior and reaction time, motivation and rewards, attention.

**BOOKS RECOMMENDED:**

Introduction to Psychology by C.T. Morgan, R.A. Kind

Development Psychology by Hurlock C

Abnormal psychology and modern life by R.C. Carson, J.N. Butcher

Experimental Psychology A Laboratory Manual by E.G. Parameshwaran & K Ravichandra.

## SCHEME OF THEORY EXAMINATION – PSYCHOLOGY

**Total Marks – 100 I.A. – 20 Marks, University Exams – 80**

University exam – Duration of paper 3 hours

Distribution of maximum marks out of 80 marks

Section (A) M.C.Q. single best response – (1 x 20) -20 marks

Section (B) (30 marks)

- 1) SAQ- Answer any 3 out of 4 – (3 x5)--15 marks
- 2) SAQ-Answer any 5 out of 6- (5x3) -15 marks

Section (C) (30 marks)

- 1) L.A.Q – one question -15 marks (LAQ should give break up of 15 marks)

OR

L.A.Q – one question –

- 2) L.A.Q. one question - 15 marks (LAQ should give break up of 15 marks)

**Internal Assessment:** One exam at the end of each term. Average of total marks obtained to be considered for Internal Assessment.

# ERGOTHERAPEUTICS – I

Total hours: 260 (Theory-100, Practical -160)

Total marks: 200 marks

Theory: 100 marks (Final exams: 80 marks, Internal Assessment: 20 marks)

Practical: 100 marks (Final exams: 80 Marks, Internal Assessment-20 marks)

## Course Objectives:

The students will be able to fulfill the following objective of the course.

### Theory:

- 1) Describe general concepts of biomechanics. Explain essential terms and concepts in biomechanics: classification of mechanics – static, dynamic, kinematics, kinetic.
- 2) Kinetics – Define force. Describe Newton's laws of motion with examples and application in Occupation Therapy. Classify linear, parallel, concurrent and general force system. Describe composition and resolution of forces with examples. Explain moment, torque and couple. Enumerate types of forces and their examples. Explain moment torque and couple. Enumerate types of forces and their characteristics. Describe centre of gravity and its application in human body, planes of human body. Classify levers and explain physiological significance of trade- off of mechanical advantage. Describe static and dynamic equilibrium with examples. Describe friction and its practical application in the human body. Application of kinetics in occupation therapy.
- 3) Explain the concepts of kinematics and types of motion- linear/translator, rotator/angular, curvilinear, general plane motion. Application of kinematics in human body-open and close kinematic chain motion.
- 4) Describe biomechanics of upper extremity joints- Shoulder, elbow, radio-ulnar wrist, hand with special emphasis on articular surface, joint capsule, type of joint, muscles and ligaments surrounding the joint, their action and functions, forces applied, movements occurring in relationship of joints to other joints.
- 5) Describe biomechanics of lower extremity joints- Hip. Knee. Ankle and sub-talar joints with special emphasis on articular surfaces, joint capsule, type of joint, muscles and ligaments surrounding the joint, their action and functions, forces applied, movements occurring, relationship of joints to other joints. In addition explain varus and valgus of femoral neck, forces acting during single and double leg stance, factors affecting, and effect of use of cane on hip joint forces. Describe Stability and mobility with respect to locking and unlocking of knee and patella-femoral joint. Explain stability achieved at ankle and sub-talar joints, arches of foot, weight bearing on foot.
- 6) Briefly explain the normal human gait cycle, its parameters, myokinetics and kinematics, stair gait, running, common gait deviations, types of crutch and cane, crutch and cane gaits.
- 7) Explain the anatomical aspects of posture, factors affecting posture, Normal and abnormal curvatures of spine, exercises for spine.

- 8) Define vicarious movements, explain types with examples and describe the same in various nerve injuries.
- 9) Explain principles of individual muscle testing in clinical conditions.
- 10) Explain principles of individual muscle testing in clinical conditions.

**PRATICALS:**

- 1) Acquire the skill of assessment of range of motion of joints of U.E.L.E. and spine on patients.
- 2) Acquire the skill of assessment of isolated muscle strength in U.E. & L.E. testing spinal muscle groups on patients.
- 3) Demonstrate types of crutch gait identify and analyze pathological gaits.

**Course Contents:**

- 1) General concepts of biomechanics: - (5 hrs)
  - a) Essential terms and concepts in biomechanics: classification of mechanics static, dynamic, kinematics, kinetic.
- 2) Kinetics: - (15 hrs)
  - a) Force: Definition
  - b) Newton's laws of motion with examples and application in O.T.
  - c) Classification of force system – linear, parallel, concurrent, general, composition and resolution of forces with examples. Moment, torque and couple.
  - d) Types of forces – internal, external, gravity- centre of gravity and its application in human body, planes of human body.
  - e) Levers – classification, physiological significance of trade – off of mechanical advantage.
  - f) Static and dynamic equilibrium with examples.
  - g) Friction and its practical application in the human body
  - h) Application in occupational therapy
- 3) Kinematics: - (5 hrs)
 

Types of motion – linear/translator, rotator/angular, curvilinear, general plane motion, Application of kinematics in human body – open and close kinematics chain motion.
- 4) Biomechanics of upper extremity joints: - (25 hours)
 

Shoulder, elbow, radio-ulnar, wrist, han with special emphasis on particular surfaces, joint capsule, type of joint, muscles and ligaments surrounding the joint, their action and function,s forces applied, movements occurring, relationship of joints to other joints.
- 5) Biomechanics of lower extremity joints - (25 hours)
 

With special emphasis on articular surfaces, joint capsule, type of joint, muscles and ligaments surrounding the joint, their action and functions, forces applied, movements occurring, relationship of joints to other joints. In addition to following.

- a. Hip – Varus and valgus of femoral neck, forces acting during single and double leg stance, factors affecting, effect of use of cane on hip joint forces.
  - b. Knee and patella-femoral – Stability and mobility with respect to locking and unlocking of joint.
  - c. Ankle and sub-talar joints- Stability achieved, arches of foot, weight bearing on foot.
- 6) Gait: - (10 hrs)  
Normal human gait cycle (walking), its parameters, myokinetics and kinematics, stair gait, running. Common gait deviations. Types of crutch and cane, crutch and cane gaits, preparatory exercises for crutch cane walking.
  - 7) Posture:-( 5hrs)  
Anatomical aspects of posture, factors affecting posture. Normal and abnormal curvatures of spine, exercises for spine.
  - 8) Vicarious movements: types with example, in various nerve injuries
  - 9) Range of motion testing; Principles in clinical conditions – indications and contraindications, visual observations.
  - 10) Muscles strength- individual muscle testing: Principles in clinical conditions.

#### **PRACTICALS:**

1. Assessment of joint range of motion of U.E., L.E. & spine on patients -(60 hrs)
2. Assessment of individual muscle testing in U.E. & L.E. testing spinal muscles (groups) on patients -(70 hrs)
3. Demonstration of types of crutch gaits, identification and analysis of Pathological gaits. - (30 hrs)

#### **BOOK RECOMMENDED:**

Occupational Therapy: Practice skills for Physical Dysfunction by L.V. Pedretti  
 Occupational Therapy for Physical Dysfunction by C.A. Trombly.  
 Joint Structure and Function- A comprehensive analysis by C.C. Norkin, P.K. Levangie.  
 Physiology of joint and joint motion by Kapanji I.A.  
 Therapeutic exercise by J. Basmajian  
 Biomechanics of human motion by William Listner  
 Measurement of joint motion: a guide to goniometry by C.C. Norkin and D.J. White  
 Therapeutic exercise- Foundations and Techniques by C. Kisner & L.A. Colby  
 Occupational Therapy & Physical dysfunction by A. Turner  
 Muscle testing and function by F.P. Kendall  
 Daniel's and Worthingham's Muscle testing.

## SCHEME OF EXAMINATION – ERGOTHERAPEUTIC –I

### Theory – Total 100 I.A. – 20 University Exams – 80

University Exam – Duration of paper 3 hours

Distribution of maximum marks out of 80 marks

Section (A) M.C.Q: Single best response (1 x 20) -20 marks

Section (B) (30 marks)

- 1) SAQ – Answer any 3 out of 4 (3 x 5) -15 marks
- 2) SAQ-Answer any 5 out of 6 (5 x 3) -15 marks

Section (C) (30 marks)

- 1) LAQ- one question – 15 marks (LAQ should give break up of 15 marks)
- 2) LAQ-one question-15 marks (LAQ should give break upto 15 marks)

(1 out of 2)

Internal Assessment – One exam at the end of each term. Average of total marks obtained to be considered for internal assessment.

Practical Examination

Total marks 100 (I.A. -20 University Exam – 80)

The distribution of marks for University exam shall be as follows:

Topic	Marks
a. R.O.M. assessment	20
b. Individual muscle testing	20
c. Gait Analysis	20
d. Viva Voce	20
<b>Total</b> -	<b>80</b>

**Internal Assessment** – One exam at the end of term. Average of total marks obtained to be considered for Internal Assessment

## ERGOTHERAPEUTICS – II

Total Hours – 260- (Theory – 100 Practical – 160)

Total Marks – 200 Marks

Theory: 100 Marks (Final exams: 80 Marks, Internal Assessment: 20 marks)

Practicals: 100 Marks (Final exams: 80 Marks, Internal Assessment 20marks)

### Course Objectives:

The students will be able to fulfill the following objective of the course:

#### Theory:

- 1) Describe the theory of spatiotemporal adaptation and explain in brief the assumption on which the theory is based. Illustrate and explain the SMS integrative process. In brief differentiate between reflexes and reactions. Explain the different phases of reflex and reaction development. Explain the importance of stability and mobility in human development.
- 2) Describe theoretical foundation of human development and explain learning, maturational, psychoanalytical, cognitive, ethologic and humanistic self theories.
- 3) Explain principles of various sensory- motor approaches based on neuro-physiological principles.
- 4) Describe tests for functional evaluation of hand. Enumerate the subtests of hand function tests and its relevance to Occupational Therapy.
- 5) Define functional bracing; explain the objectives and scientific basis of functional bracing, its importance in healing of fractures, its advantages over conventional bracing. Enumerate different materials used, indications and contraindications of functional bracing.
- 6) Explain the play behavior; different functions, content and structure of play, theories of play. Briefly outline the role of play in Occupational Therapy treatment process.
- 7) Explain general principles of splinting applied while designing and fabricating common hand splints. Briefly explain uses of the same
- 8) Explain design and fabrication of common adaptive devices with knowledge of material and equipment used for the same. Briefly explain application of the same in occupational therapy.

**PRACTICALS:**

- 1) Acquire the skills of designing and fabricating common hand splints viz. resting pan, radial barcock-up, long opponens, Radical nerve splint using extension outrigger, finger gutter.
- 2) Design and fabricate common adaptive devices viz. universal cuff, writing device, long handled scrubber, enlarged handle spoon, tap opener
- 3) Demonstrate specific and standardized procedure for hand function test viz. Jenson Taylor, Crawford small part Dexterity test, Purdue Peg board, Complete Minnesota Dexterity Test.

**Course Content:**

- 1) Theory of spatiotemporal adaptation: Posture and movement, Sensory-motor-sensory Integration, Reflex and reaction maturation, stability and mobility development. - (10 hrs)
- 2) Theoretical foundation of Human development: Learning Theories – Behaviour Theory, Social learning theory: Maturation theory of Arnold, Gesell, Psychoanalytic theory of Sigmund Freud, Erik Erikson, Cognitive Theory of Jean Piaget; Humanistic self theory, Ethologic - (20 hrs)
- 3) Overview of Sensory- motor approaches: Rood's approaches, Bobath approach, Brunnstrom's approaches, Sensory integrative approach, motor relearning program - (30 hrs)
- 4) Hand Function Tests- Jenson Taylor, Crawford small part dexterity test, Purdue peg board, complete Minnesota dexterity test. - (15 hrs)
- 5) Functional bracing: Definition, concept of functional bracing, objectives and scientific basis of functional bracing, importance in healing of fractures, advantages over conventional bracing, material used, indication and contraindication of functional bracing. (10 hrs)
- 6) Play in child development: play behavior; Functions of Play- social, physical, sensory, emotional, perceptual, cognitive. Content and structure of play. Theories of play – E.Erikson. A. Freud, J.Piaget, Reilly, Role of play in Occupational therapy treatment process. - (5 hrs)

**PRACTICALS:**

- 1) Design & fabricate hand splints viz. resting pan, radial bar cock-up, long opponens, Radial nerve splint using extension outrigger, finger gutter (70 rs)
- 2) Design and fabricate adaptive devices viz. universal cuff, writing device, long handled scrubber, enlarged handle spoon, tap opener.
- 3) Demonstration of standardized procedure of Hand function test viz. Jenson Taylor, Crawford small part Dexterity test, Purdue Peg board, Complete Minnesota Dexterity Test.

**BOOKS RECOMMENDED:**

Williard and Spackman's Occupational Therapy

An Introduction to Occupational Therapy by A. Turner

Occupational Therapy: Practice skills for Physical Dysfunction by L.V. Pedretti

Occupational Therapy for Physical Dysfunction by C.A. Trombly.

Closed functional treatment of fractures by a Sarmiento, L.Latta

Hand and upper extremity splinting: Principles and methods by E.E. Fess, C.A. Phillips, Gettle K.S. and JANSON J.

## SCHEME OF EXAMINATION – ERGOTHERAPETUTIC –II

### Theory – Total 100 I.A. 20, University Exam – 80

Distribution of maximum marks out of 80 marks

Section A-M.C.Q. Single best response (1 x 20) --20 marks

Section B (30 marks)

- 1) SAQ – Answer any 3 out of 4 ( 3x5) --15 marks
- 2) SAQ- Answer any 5 out of 6 (5 x 3) -15 marks

Section C (30 marks)

- 1) LAQ one question – 15 marks (LAQ should give breakup 15 marks)  
OR  
LAQ one question
- 2) LAW one question –15 marks (LAQ should give break up 15marks)

Internal assessment: One exam at the end of each term. Average of total mark obtained to be considered for Internal Assessment.

### PRACTICAL EXAMINATIONS

Total marks 100, I.A. 20 University Exams – 80

The distribution of marks for university exam shall be as follows:

Topic	Marks
a. Splints Fabrication	20
b. Adaptive devices Fabrication	20
c. Hand function tests	20
d. Viva Voce	20
<b>Total</b>	<b>80</b>

**Internal Assessment:** One exam at the end of each item. Average of total marks obtained to be considered for Internal Assessment

### SCHEME OF EXAMINATION –B.O.T.-III

S. N.	Subject	Theory	I.A (Theory)	Total Theory	Clinical	I.A Practical	Total	Subject Total
1.	Medicine	80	20	100	-	-	-	100
2.	Surgery and Orthopedics	80	20	100	-	-	-	100
3.	Psychiatry	40	10	50	-	-	-	50
4.	Work Physiology & Ergonomics	40	10	50	-	-	-	50
5.	OT in Medical Conditions	80	20	100	80	20	100	200
6.	OT in Surgical Conditions	80	20	100	80	20	100	200

**NIMS UNIVERSITY, JAIPUR**  
**OCCUPATIONAL THERAPY SYLLABUS**  
**BOT- PART-III**

<b>SUBJECTS</b>	<b>TRANSCRIPT HOURS</b>
<b>1. Medicine</b>	
a) General Medicine	160 hrs
b) Neurology	
<b>2. Surgery &amp; Orthopedics</b>	
a) General Surgery	
b) Orthopedics	160 hrs
<b>3. Psychiatry</b>	85 hrs
<b>4. Work physiology &amp; ergonomics</b>	75 hrs
<b>5. O.T. in Medical Conditions</b>	120 hrs
<b>6. O.T. in Surgical Conditions</b>	120 hrs
<b>7. Supervised Clinical Practice</b>	680 hrs
<b>Total</b>	<b>1400 hrs</b>

- Total practice clinical skills under the supervision of clinical supervisor and to maintain folder in which prescribed cases histories and written assignments are to be documented and to obtain signature from the respective section In-charge at the end of clinical assignment/posting.

# MEDICINE

## SECTION-I GENERAL MEDICINE

A- General Medicine	-	(Theory & Clinical 50 + 30 hrs)
B- Neurology	-	(Theory & Clinical 50 + 30 hrs)
Total hours	-	160
Total marks	-	100 (Theory – 80, Internal Assessment – 20)

### Course Objectives:

The students will be able to fulfill the following objectives measured by written evaluation. They should also be able to evaluate common medical condition that is routinely seen by occupational therapist.

1) Diseases of cardiovascular system:

Describe ischemic heart diseases their clinical features investigation and management. Explain management of hypertension. Describe rheumatic heart diseases with their clinical features investigation and management. Enumerate the case of peripheral vascular disease and discuss its management. Describe etiology classification investigation and management of congenital heart diseases. Describe basics in ECT as applicable to ischemic heart diseases.

2) Diseases of endocrine system:

Explain clinical features, investigations management and complication of diabetes. Explain in brief hyperthyroidism, hypothyroidism and hypopituitarism, hypoadrenalism, hyperadrenalism, calcium metabolism.

3) Diseases of respiratory system:

Describe the investigation and management of the following respiratory condition bronchial asthma, bronchiectasis, pulmonary embolism, tuberculosis, lung abscess, emphysema, lobar pneumonia, pleurisy, emphysema and corpulmonale.

4) Rheumatological diseases:

Describe the pathogenesis, clinical features, investigations, complications, and brief outline of management of the following diseases: RA, seronegative spondylosing arthritis S.L.E. gout, still disease and polymyositis.

5) Diseases of digestive system:

Discuss the management of gastric and duodenal ulcer, haematemesis, hepatitis and malabsorption syndrome.

6) Deficiency diseases – Describe the clinical features, investigation and management of rickets, protein deficiency, beri beri and subacute combined degeneration.

7) Obesity: Describe the aetiology and management and complications in brief of obesity

- 8) Paediatrics: Explain normal process of growth and immunization schedule, importance of breastfeeding, birth injuries, nutritional deficiency, genetic anomalies and their management. Describe neuro-muscular, musculo-skeletal and cardio-pulmonary conditions related to immunological conditions, nutritional deficiencies, infectious diseases and genetically transmitted conditions;  
Describe the management principles of intensive neonatological and paediatrics care.
- 9) Geriatrics: Describe the age-related problems in elderly and their management in health care and wellness clinics.
- 10) Dermatology: Describe the clinical features, investigation and management of leprosy and HIV infections in brief common skin infections: psoriasis and venereal diseases.
- 11) Nephrology: Describe the clinical features and management of acute and chronic renal failure, glomerular nephritis, and urinary tract infection.
- 12) Haematology: Describe the clinical features, and management of anaemias, haemophilia, thalassaemia, leukaemia, and Hodgkin's diseases.
- 13) Intensive medical care
- 14) Common Infectious Diseases- Describe the causes, symptoms, and management of malaria, rabies, leptospirosis, and dengue.

#### **Course Contents:**

- 1) Diseases of Cardio-vascular system: Ischemic Heart Diseases, Hypertensive Heart Disease, Rheumatic Heart Disease, Thyrotoxic Heart Disease, arrhythmias vascular Disease, Thrombosis, Embolism and ECG reading.
- 2) Disease of Endocrine system:  
Emphasis on Diabetes mellitus – Definition, Diagnosis, classification and complications and management, outline of Hypopituitarism, Goitre, Hyperthyroidism and Hypothyroidism, hypoadrenalism and hyperadrenalism and calcium metabolism.
- 3) Diseases of Respiratory system: - (6 hours)  
Diseases of lungs, Bronchi, Bronchial Asthama, Bronchiectasis, Pulmonary embolism, pulmonary tuberculosis, lung abscess, emphysema, lobar, pneumonia, bronchopneumonia, corpulmonale, fibroid lung.
- 4) Rheumatic Disease. -(4 hours)  
Rheumatic fever. Rheumatoid Arthritis, Still's disease, SLE polymyositis, seronegative arthritis gout ---- aetiopathogenesis, clinical features, complications, diagnosis and brief outline of the management.
- 5) Diseases of Digestive System: Gastric and Duodenal ulcers, haematemesis, hepatitis, malabsorption syndrome. - (1 hours)
- 6) Deficiency diseases: Rickets, protein deficiency, beri beri, subacute combined degeneration. (1 hours)
- 7) Obesity:- (2 hours)  
Aetiology and management
- 8) Paediatrics: Normal growth and development, immunization, breast feeding, birth injuries, C.N.S. involvement, nutritional deficiencies and associated systemic conditions, genetic anomalies, intensive neonatological and paediatric care.- (12 hours)

- 9) Geriatrics: Age related changes in human body & response, health care for elderly patients, wellness clinic. - (3 hours)
- 10) Dermatology: Common skin infections, Psoriasis, Leprosy, Venereal disease and infections diseases HIV infections - (6 hrs)
- 11) Nephrology: Acute and chronic renal failure, glomerular nephritis, urinary tract infection (2 hours)
- 12) Haematology: Anaemia, haemophilia, thalassaemia, leukaemia, Hodgkin's disease. -(2 hours)
- 13) Intensive medical care- (2 hours)
- 14) Common Infectious Diseases: malaria, rabies, leptospirosis, dengue - (1 hour)
- 15) Clinical - (30 hours)
  - a) Evaluation, interpretation, presentation and recording of one case each in:
    - 1) Respiratory 2) Craniological 3) Rheumatological condition
    - 2) Evaluation of neonatal/abnormal reflexes and examination of nervous system in paediatric cases.

**BOOK RECOMMENDED:**

- 1) API – Text book of Medicine 5<sup>th</sup> edition
- 2) Golwalla's medicine for students
- 3) Davidson Principles and Practice of medicine
- 4) Essentials of Paediatrics – by O.P. Ghai- Inter Print publications
- 5) D.K. series in Paediatrics
- 6) Handbook of practical medicine – P.J. Mehta

## SECTION-II NEUROLOGY

### Course Objectives:

Describe the clinical features, investigation and management of the following neurology conditions.

1. Disorders of cerebral circulation (CVA)
2. Disorders of cerebellar function: infections, tumors and hereditary condition of cerebellum.
3. Hereditary and degenerative disorders, cerebral atrophy, multiple sclerosis, motor neuron diseases, syringomyelia and spina-bifida.
4. Disorders of higher cortical function with respect to lobes and hemisphere (neuropsychological evaluation and treatment)
5. Diseases of cranial nerves due to infections and entrapments and neuralgias.
6. Disorders of nerve roots and peripheral nerves – polyneuropathies, Guillian Barre Syndrome.
7. Disorders of muscles – types of dystrophies, and myasthenia gravis.
8. Disorders of extrapyramidal system – parkinsonism, chorea, dystonia, athetosis, Hemiballismus
9. Disorders of spinal cord and cauda equine, myelopathies, tumors and infections.
10. Infections of nervous system: meningitis, encephalitis, poliomyelitis, syphilis, tetanus etc.
11. Epilepsy
12. Alzheimer's diseases.

**Course Contents:**

1. Disorders of cerebral circulation - (6 hrs)
2. Disorders of cerebellar function - (5 hrs)
3. Hereditary and degenerative disorders - (5 hrs)
4. Disorders of Higher Cerebral cortical function and behavioural neurology  
Sp. Areas of cerebral cortex, neuro psychological syndromes, perceptions - (3 hrs)
5. The Cranial Nerves & Special senses -(5 hrs)
6. Disorders of nerve roots and peripheral nerves -(5 hrs)
7. Disorders of muscle -(6 hrs)
8. Movement disorders (Extra pyramidal syndrome) -(3 hrs)
9. Disorders of spinal cord and cauda equine -(3 hrs)
10. Infections of Nervous system -(4 hrs)
11. Epilepsy -(2 hrs)
12. Clinical -(30 hrs)

Evaluation, interpretation, presentation and recording of one case each in:

- 1) U.M.N. Lesions
- 2) L.M.N. Lesion

**BOOK RECOMMENDED:**

- 1) Disease of nervous system Walton
- 2) Clinical neurology – Roger Bannister
- 3) Clinical examination in neurology – Bickerstaff

Scheme of Examination –Theory -University Exam -80 marks

--Internal assessment -20 marks

(Internal assessment – one exam at the end of each term)

(Average of total marks obtained to be considered for Internal Assessment)

## **Distribution of marks in University -- 80 marks**

Section A – MCQ single best response - (1 x 20) -20 marks

General Medicine      10 MCQs

Neurology              10 MCQs

Section B- Medicine Q2 SAQ 3 out of 4 - (3 x 5) -15 marks

(Based on cardiovascular and thoracic conditions)

Q3 SAQ 5 out of 6 - 15 marks

(Based on general medical and neurological conditions except cardio-thoracic)

Section C- Compulsory Q 4 LAQ --- 15 marks (LAQ should give break up of 15 marks)

(Based on central nervous system condition)

Q5 LAW 1 out 2—15 marks (LAQ should give break up of 15 marks)

(Based on central nervous system condition, rheumatology, dermatology and pediatrics)

# SURGERY AND ORTHOPEDICS

Total hours 160 (Gen. Surgery 80 hrs (40 theory + 40 clinical)

(Orthopedics 80 (50 theory + 30 clinical)

Total Marks 100 (Theory 80, Internal Assessment – 20)

## **Course Objectives:**

Student should be able to fulfill the following objectives. They should be able to evaluate common surgical conditions that are routinely seen by occupational therapist.

## **Section – I - SURGERY**

### **A. General Surgery**

- 1) Describe classification of wound, stages of healing and their treatment
- 2) Describe importance of water –electrolyte balance in shock and hemorrhage and describe classification of shock in brief.
- 3) Describe acute & chronic infections of wound, ulcers, cysts & abscesses, their clinical features and complications with brief knowledge of their management.
- 4) Explain in brief pre & post operative management & its importance.
- 5) Describe in brief various surgeries of head & neck their indications, and complications.
- 6) Also explain indications for various surgeries of alimentary system and their post operative management.
- 7) Explain cause of burns, various classifications, their medical & surgical management with role of burns rehab team.
- 8) Describe indications & causes of amputation, criteria for section of site of amputation and their pre and post operative management.
- 9) Explain in brief classification of tumors, clinical features and their pre and post operative management. Post operative management of mastectomy.
- 10) Describe the etiological & anatomical classification of head injuries, their clinical features and management.

### **B. Plastic Surgery**

- 1) Describe various hand injuries, their surgical and post operative management with complications, (including tendon injuries and nerve injuries, tendon transfers)

- 2) Explain various skin grafts & flaps, their classification, criteria for selection and post operative management.
- 3) Explain in brief various indications for cosmetic surgery, keloid and hypertrophic scar, their pre & post operative management.
- 4) Describe in brief new techs in micro vascular surgeries their advantages and management

### **C. Neuro Surgery**

- 1) Describe common congenital and childhood disorders such as hydrocephalous, spina bifida, their clinical features, complications and their surgical management with post operative care.
- 2) Describe first aid management of spinal cord injury and its importance and implications.
- 3) Classify and describe signs and symptoms of spinal & intra-cranial tumors.

D) Cardiovascular and Thoracic Surgery: Describe brief pathology, clinical features, and indications, various operative procedures of surgery of cardiac and respiratory conditions and explain pre & post surgical management.

E. Describe problems of ear, nose, throat and their management in brief URT infections, tracheotomy, 7<sup>th</sup> & 8<sup>th</sup> cranial nerves palsy, vertigo & dysphasia.

F. Describe common ophthalmological conditions in brief and their management (diseases of conjunctiva, cataract, optic tumor, and keratoplasty & eye donation).

G. Describe common obstetrical and gynecological conditions and their management in brief.

## Course Contents:

### Section- I

#### A) General Surgery:

- 1) Wounds classification, healing process and principles of treatment.
- 2) Hemorrhage, shock, water and electrolyte imbalance, effect of anesthesia and surgical trauma.
- 3) Infections: acute & chronic, signs, symptoms and complications.
- 4) Pre and post operative management – general principles.
- 5) Head & neck alimentary system surgeries.
- 6) Burns: causes, classifications and management.
- 7) Amputations: classifications & management.
- 8) Tumors: classifications and management, radical mastectomy and management.
- 9) Head injuries: types, clinical features and management.

#### B) Plastic Surgery: - (9 hrs)

Hand injuries and tendon transfers, skin grafts and flaps, classification, criteria for selection indications for management of cosmetic surgery, keloid and scar management, microvascular surgery.

#### C) Neuro Surgery: - (4 hrs)

- 1) Head injury.
- 2) Congenital and child hood disorders: Hydrocephalus, Spinabifida
- 3) First aid management of spinal cord injury.
- 4) Intracranial tumours: classification, signs and symptoms

#### D) Cardio Vascular & Troracic Surgery:

Pathology, clinical features, and criteria for surgical intervention of cardio-respiratory disorders. Post operative complications and management in theoracotomy, thoracoplasty lobectomy, pneumonectomy, decortications, CABG, valvular surgery, congenital heart disease surgeries, surgery for peripheral vascular disease.,

#### E) Common problems of ear, nose and throat and their management. - (3 hrs)

#### F) Common Ophthalmological conditions and their management – surgeries for 3<sup>rd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> cranial nerve palsies.

- G) Common obstetrical and gynecological conditions- urogenital dysfunctions, neoplasm's of female reproductive organs, surgical management, pre, peri and post menopause-physiology complications and management.

**CLINICAL:**

Students will have to undergo outdoor and indoor clinical teaching for surgical case. They have to evaluate present and record one case in each of following and obtain signature teacher from time to time.

- a) Burns, head injury, amputation, post-thoracic surgery, post-tendon transfers, post-hand injury cases.
- b) Auscultation and its interpretation with special emphasis to pulmonary function, reading and interpretation of X-ray chest, P.F.T. Blood – gas analysis.
- c) Observation of one abdominal, one thoracic surgery, one surgery of skin graft/flap

**BOOKS RECOMMENDED:**

- 1. Nan: Undergraduate Surgery
- 2. Bailey and Love's Short practice of surgery

## Section II

### ORTHOPEDICS

#### Course Objectives:

- 1) Describe the pathology, clinical manifestation and the management of trauma of bones, joints, and soft tissues of upper and lower extremities including spine. Describe the classification of fracture, stages of fracture healing, various types of management and their complications of upper and lower limbs bones.
- 2) Explain various types of peripheral nerve injuries, their clinical signs and surgical, conservative management in detail including brachial plexus and lumbosacral plexus injuries.
- 3) Describe various deformities of spine and extremities, their clinical features, investigations and conservative, surgical management with postoperative care.
- 4) Describe congenital conditions such as congenital dislocation of hip, CTEV and Perthes disease and describe its conservative and surgical management.
- 5) Explain reconstructive surgeries carried out in neuromuscular involvement for successful rehabilitation and their postoperative. Management (CP and Post polio deformities including limb lengthening surgeries).
- 6) Enumerate infections and tumors of musculoskeletal system and explain their etiology clinical features surgical procedures and postoperative management.
- 7) Explain various etiological factors of backache, its clinical features, and conservative and surgical management.
- 8) Enumerate common sports injuries; explain biomechanics, causes of these injuries and their management.
- 9) Explain classification of Arthritis, **rheumatological** conditions affecting musculoskeletal system Metabolic Bone disorders like osteoporosis, osteomalacia, Rickets, osteoarthritis with their clinical features, conservative and surgical management including replacement arthroplasties.
- 10) To comprehend radiological examination, various techniques used in radiological examination and its use in diagnosis.

#### Course contents:

1. Pathology, clinical manifestations, management of trauma of the bones - (10 hrs)  
& soft tissue involving musculoskeletal system (limb and spinal trauma)  
Fractures – Classification, management complications of upper and lower limb Bones.
2. Peripheral nerve injuries, BPI and management - (4 hrs)

3. Deformities of spine, extremities and management - (4 hrs)
4. Congenital malformation and management - (4 hrs)
5. Reconstructive surgeries for the rehabilitation of neuromuscular affection - (5 hrs)  
Including limb lengthening.
6. Infections and tumors of the musculoskeletal system and management - (5 hrs)
7. Backache – Surgical management - (4 hrs)
8. Sports, injuries, biomechanics and management - (4 hrs)
9. Arthritis, rheumatic disease and Metabolic bone disease and their management - (6 hrs)
10. Radiological evaluation and diagnosis- (4 hrs)

**CLINICAL: - (30 hrs)**

Students will have to undergo outdoor and indoor clinical teaching for surgical cases:

- a) Students have to evaluate present and record one case in each of following and obtain signature of teacher from time to time.
  - i. Acute soft tissue lesions (including nerve injury)
  - ii. Osteoarthritis and rheumatoid arthritis
  - iii. Osteoarthritis and rheumatoid arthritis
  - iv. Backache
  - v. Post-operative fracture of extremities
  - vi. Traumatic paraplegia/quadriplegia
- b) Observation of surgeries – Internal fixation, knee/hip replacement and reconstructive surgery of tendons one each.

**BOOK RECOMMENDED:**

- 1) Outline of Orthopedics by Adams
- 2) Orthopedics by Dr. Maheshwari
- 3) Orthopaedics by Dr. L.N. Vora
- 4) Outline of fractures by Adams.

**SCHEME OF EXAMINATION -- Theory --University Exam -80 marks**

**---- Internal assessment -20 marks**

**(Internal assessment – one exam at the end of each term)**

**Average of total marks obtained to be considered for Internal Assessment.**

Distribution of marks in university - 80 marks

Section A – MCO Single best response - (1 x 20) - 20 marks

Surgery            10 MCQs

Orthopedic        10 MCQs

Section B- General Surgery

Q2-     SAQ (3 out of 4) 3 x 5 -- 15 marks

(Based on burns, amputations and head injury)

Q3-     SAQ (5 out of 6) 5 x 3 -15 marks

(Based on plastic surgery, CVTS, topics of General Surgery other than those mentioned in Q2)

Section C: Orthopedics-

Q4     SAQ (3 out of 4) - 3 x 4 -15 marks

Q5     SAQ (5 out of 6) - 5 x 3 -15 marks

# PSYCHIATRY

Total hours = 85 (Theory 50, Clinical – 35)

Total Marks – 50

Theory Exams – 40, internal assessment: 10

## Course Objectives:

The student will be able to fulfill the following objective. They should be able to evaluate common psychiatric that are routinely seen by occupational therapist.

1. Explain purpose and types of classification of mental disorders.
2. Demonstrate techniques of psychiatric assessment viz. Interview and mental status examination.
3. Describe the etiological factors, symptoms, management of psychiatric conditions such as schizophrenic disorder (all types), brief psychotic disorder, delusional disorder, mood disorders, conversion anxiety disorder, phobia, obsessive compulsive disorders conversion dissociate reaction, substance related disorders, adjustment disorder, personality disorder, psychosomatic disorders, hypochondria's psychosexual disorders, disorders of infancy, childhood and adolescence, eating elimination disorders, mental disorders of infancy, childhood and adolescence, eating elimination disorders, retardation, psychiatric emergencies, suicide, Organic Brain Syndromes psychiatric aspects of AIDS, pervasive mental disorders.
4. Explain various treatment modalities and their indication viz. ECT, chemotherapy, group therapy, behavioral therapy, psychotherapy, cognitive behavioral therapy.

## Course Contents:

1. Psychiatric history, mental status examination - (5 hours)
2. Classification of mental disorders - (5 hours)
3. Management of psychiatric conditions - (35 hours)
  - a) Schizophrenic disorders (all types) brief, psychotic disorder, delusional disorder, schizoaffective disorder, post partum psychosis.
  - b) Mood disorders other affective disorders.
  - c) Organic mental disorders, psychiatric aspects of aids.
  - d) Anxiety disorders, phobia, obsessive compulsive, dissociative, conversion disorders hypochondrias, post traumatic stress disorders.
  - e) Personality disorders. Substance related disorders.
  - f) Adjustment and impulse control disorders.
  - g) Psycho-sexual disorders.

- h) Psychological factors affecting medical condition (psychosomatic disorders)
  - i) Psychiatric emergencies – suicide.
  - j) Stress management
  - k) Disorders of infancy, childhood and adolescence.
  - l) Disruptive behavior disorders, conduct disorder.
  - m) Attention deficit and hyperactivity disorder.
  - n) Eating disorders, tic disorders elimination disorders.
  - o) Affective disorders, child abuse, enuresis.
- 4) Treatment ECT, chemotherapy, group therapy, psychotherapy, cognitive behavior therapy (5hrs).

**CLINICAL : - (35 hrs)**

Students will have to undergo outdoor and indoor clinical teaching for psychiatric cases. They have to evaluate, present and prepare clinical record of minimum of three cases and obtain signature of teacher from time to time.

Clinics: Schizophrenia, Mood disorders, Anxiety disorders, Conversion, Obsessive compulsive disorders, Dementia, Substance abuse.

**BOOK RECOMMENDED:**

1. Ahuja N. – A short textbook of psychiatry (latest edn.) Jaypee brothers, medical publishers.
2. Shah L.P. handbook of psychiatry.
3. Gandhi and Gandhi – short text book of psychiatry.

**Scheme of Examination -Theory - University Exam -40 marks**

-Internal assessment -10 marks

(Internal assessment – one exam at the end of each term)

(Average of total marks obtained to be considered for Internal Assessment)

Distribution of marks in University - 40 marks

Section A – MAQ Single best response - (1 x 10) -10 marks

Section B – SAQ 3 out of 4 -15 marks

Section C – LAQ 1 out of 2 - (3 x 5) 15 marks (LAQ breakup should give of 15 marks)

# WORK PHYSIOLOGY & ERGONOMICS

**Total hours: 75**

**Total Marks: 50 (Theory 40 Marks, Int. Assessment 10 marks)**

## **Course Objective:**

The student will be able to fulfill the following objectives:

### **WORK PHYSIOLOGY**

1. Explain the nature of aerobic and anaerobic processes. Describe physiology of anaerobic exercises.
2. Explain evaluation of physical performance by using various tests of maximum aerobic power and anaerobic power.
3. Describe principles & methods of physical training.
4. Explain the concepts of energy expenditure at work, rest, leisure and fatigue.
5. Outline the effects of nutrition in physical performance capacity.
6. Explain the mechanism of temperature regulation.
7. Describe factors, which affect physical performance.

### **ERGONOMIC:**

- 1) Define and describe various areas of ergonomics
- 2) Define Anthropometry, enumerate facets – static & dynamic  
Overview static anthropometry- differences in respect of gender, ethnicity, age, occupation persons with disability, measurements, concept of 5<sup>th</sup>%, 50<sup>th</sup>% and 95<sup>th</sup>% limitations, uses of data, principles in its application.
- 3) Environmental physiology –Understand the types of environment. Briefly outline the effects environmental factors such as temperature, humidity, noise vibration, visual, environmental pollution on human body.
- 4) Skill psychology – Explain skill learning, stages involved, characteristics of well learnt task.
- 5) Man-machine oriented topics- Describe functioning of man-machine system, information processing theory.
- 6) Explain the design of work, space and work equipment.
- 7) Explain layout of equipment, design of seating and displays, characteristics of controls and the compatibility.
- 8) Explain the safety factors, accidents and their prevention.
- 9) Describe concept of cognitive workload and organization of mental space.

- 10) Define and underline the assumptions of fundamental philosophy of time and motion study. Explain the cycle of managerial control and its application.  
Outline the steps involved in scientific methods of solving problem.  
Enumerate methods of man-product analysis.
- 11) Enumerate steps in work-site job analysis and design considerations.
- 12) Explain scope of ergonomics in modern industrial society.
- 13) Apply the principles of ergonomics in occupational therapy.

### **Course Contents:**

#### **WORK PHYSIOLOGY: (35 hours)**

- 1) Physical performance: Aerobic and anaerobic processes, physiology of - (4hrs)
  - a. Aerobic and anaerobic exercises.
- 2) Evaluation of physical performance, test of maximum aerobic power and - (6hrs)
  - a. Aerobic power, master step test, treads mill, bicycle, and ergometry.
- 3) Principles and methods of physical training. -(4 hrs)
- 4) Nutrition and physiology: energy expenditure at work, rest, leisure and fatigue -(6 hrs)
- 5) Nutrition and physiology performance -(5 hrs)
- 6) Temperature regulation -(5 hrs)
- 7) Factors affecting performance -(5 hrs)

#### **ERGONOMICS:**

1. Definition & areas of ergonomics - (2 hrs)
2. Anthropometry – definition, facets viz. static and dynamic - (2 hrs)  
Static anthropometry – differences in respect to gender, ethnicity, age  
Occupation, person with disability, measurements, concept of 5<sup>th</sup> %, 50%, and 95<sup>th</sup>%,  
Limitation, and uses data, principles in its application.
3. Environmental physiology – types of environment, effects of environmental, factors such as temperature, humidity, noise vibration, visual environment, pollution on human body.
4. Skills psychology – skill learning, stages involved, characteristic of well learnt task (2 hrs)
5. Man-machine oriented topics – functioning of man-machine system, information  
Procession theory - (2 hrs)
6. Design of work space and work equipment. - (5 hrs)
7. Layout of equipment, design of seating, characteristics of display and control - (5 hrs)  
Their compatibility.
8. Safety factors – accidents and their prevention - (2 hrs)

9. Cognitive workload and organization of mental space. - (4 hrs)
10. Time and motion study – definition, assumptions of fundamental philosophy of time and motion study, cycle of managerial control and its application, steps involved in scientific methods solving problem. Outline of methods of man product analysis. (4 hrs)
11. Work-site job analysis and design considerations. - (2 hrs)
- 12) Scope of ergonomics in modern industrial society.
- 13) Application of ergonomics in OT.

**BOOKS RECOMMENDED:**

- 1) Exercise physiology- Mc Aradle W.D
- 2) Text book of work physiology – Astrand P. & Radahi K.
- 3) Human performance – Fitts P.M & Posner m.I
- 4) Man in his working environment – Mural K.F
- 5) Motions & time study: Principles & practice- Mundel M.e
- 6) Ergonomics for therapists- Karen Jacobs
- 7) Introduction to Ergonomics – W.T Singleton.

## PATTERN OF EXAMINATION

Theory -University exam- 40 marks

IA- 10 marks

(Internal assessment – one exam at the end of each term)

Average of total marks obtained to be considered for internal assessment.

Distribution of marks in University – 40 marks

Section A – MCQ      single best response – (1×10) -10 marks

Work Physiology -5 MCQs

Ergonomics - 5 MCQs

Section B – SAQ      3 out of 4 - 15 marks

(Based on work physiology and ergonomics)

Section C – LAQ      1 out of 2 - (3× 5) - 15 marks

(Based on work physiology & or ergonomics)

## O.T. IN MEDICAL CONDITIONS

Total hours: 460 (Theory- 60 hrs, Clinics-60 hrs and Clinical Practice-340 hrs)

Total marks: 200, Theory: 100, Clinical 100

Theory – University exam: 80, Internal assessment: 20

Clinical – University exam: 80: Internal Assessment: 20

### **Course Objective:**

The student will be able to fulfill the following objectives:

#### 1) **Rheumatoid Arthritis**

Define R.A., describe role of O.T. in treatment of R.A. and Collagen disorders with assessment. Explain in detail pathomechanics of hand deformities their prevention and splintage, describe rehabilitation in acute, sub acute and chronic state of R.A. explain joint protection technique their implication in R.A. patients with work simplification and energy conservation techniques.

#### 2) **Gerontology**

Describe biological & psychological theories of aging, explain the interrelation of aging and disease and concepts of death and dying.

Describe & understand O.T. assessment in geriatrics.

#### 3) **Dermatology**

Define leprosy

Explain the psychosocial implication of leprosy & need for intervention by O.T.

Describe O.T. treatment in acute and chronic dermatological conditions.

#### 4) **HIV**

Describe the stage of infection

Define physical psychological environmental needs of patient with HIV infection

Explain assessment processes and develop appropriate treatment planning.

#### 5) **Pulmonary Conditions**

Assess air entry and secretions by auscultation

Interpretation of pulmonary function tests and their application in rehabilitation.

State general approach of O.T. in Pulmonary conditions such as chronic bronchitis, bronchitic asthma, emphysema, emphysemas, COPD, ILD, T.B., Lung abscess, occupational lung diseases. Explain postural deviations after thoracic surgery and O.T. management.

Assess functional performance – capacity to perform occupational activities including leisure and self-care.

Assess motor performance-functional mobility, strength and endurance.

Prescribe activities to improve lung capacity using diaphragmatic and pursed lip breathing patterns and incorporate correct breathing patterns in day to day living.

Energy conservation techniques and work assessment.

Development of pulmonary endurance and work capacity.

#### 6) **Cardiac Conditions**

Describe clinical applications of O.T. with respect to common cardiac conditions such as ischaemic heart disease, acute myocardial infarction, hypertension, cardiac myopathies, congenital and acquired heart diseases, valvular diseases, and following interventions like CABG, angioplasties, valve replacements.

Understand the clinical presentations with respect to physical findings, pathophysiology and investigative reports.

Administer exercise protocol using modalities like treadmills, ergometers, step-equipments, walking, brisk walking, spot jogging exercises.

State application of exercise with respect to risk stratification, indications, dose, mode, and methods.

Understanding application of exercise training effect for work, activity and sports prescription. Interpret from exercise performance based on parametric evaluation-ECG and haemodynamic responses.

Define METS and state its classification in brief.

Define METS and state its classification in brief.

Explain work simplification and energy conservation techniques based on ergonomic principles, state use and application.

Assess and prescribe work simulation techniques in cardiac dysfunctions.

Understand and apply different components of work assessment in cardiac conditions.

Application of O.T. in controlling risk factor like obesity, smoking, hyperlipidemia, sedentary style, HT, diabetes and family history.

#### 7) **Hematological conditions**

Explain the term hemophilia.

#### 8) **Obesity**

#### **BOOKS RECOMMENDED:**

- 1) Willard & Spackman's Occupational Therapy
- 2) O.T Practice Skills for Physical dysfunction- Pedretti L.V

- 3) O.T in Physical Dysfunction – Trobley & Scott
- 4) Therapeutic Exercise – Kisner & Colby
- 5) Therapeutic Exercise – Basmajian J
- 6) Rehab Medicine – Goodgold
- 7) Rehab of Hand – Wynn & Parry
- 8) Rehab of Hand and Upper extremity – Hunter
- 9) Hand splinting – Fees, Gettle & Strickland
- 10) Pulmonary rehab, guidelines to success – Hodgkins T.E
- 11) Physical Rehab, assessment, treatment – Suzan O' Suliivan

## SCHEME OF EXAMINATION

### SCHEME OF THEORY EXAMINATION FOR O.T. MEDICAL CONDITIONS

a) Distribution of maximum marks for the subject having 100 marks shall be as follow:

University exam – 80 marks, Internal Assessment – 20 marks

Be considered for internal assessment.

Distribution of marks in university - 80 marks

Section Q-1A- MCQ Single best response (1 x 20) -20 marks

Section Q-2B- SAQ 3 out of 4 (3x5) -15 marks

Q-3 SAQ 5 out of 6 (5x3) -15 marks

Section Q-4C- LAQ compulsory -15 marks

Q5-LAQ 1 out of 2 -15 marks

(LAQ break up should be given of 15 marks)

Explain O.T. management of obesity related medical conditions.

Occupational Therapy in Medical condition: - Total marks – 100 (University exam-80, Internal Assessment – 20)

**Internal Assessment:** Internal assessment during clinical/ward exam and

Attitude: assessment on on-going clinical performance – i.e. initiative, case reports, regularity etc.

University Examination - 80 marks

One long case of -40 marks

One short case/simulated case of -20 marks

Viva Voce/Spots: -20 marks

Long case to include evaluation treatment and future planning of a single patient. Short case/simulated case, Spots- 4 spots, identification, description and uses.

## O.T IN SURGICAL CONDITIONS

Total hrs: 460 hrs (Theory- 60 hrs, clinical – 60 hrs & supervised clinical practice – 340 hrs)

Total marks: 200, Theory – 100 marks, Clinical – 100 marks

Theory: University Exam- 80 marks, IA – 20 marks

Clinical: University exam – 80 marks, IA – 20 marks

### Course Objectives:

The students will be able to fulfill the following objectives:

- 1) Burns: Define the terms Burns. Classify burns depending on various aspects, describe stage of burns. Explain role of OT in burns pts including assessment. Describe OT treatment in pre graft, post graft and rehab phase.
- 2) Amputation:  
Define amputation & state an etiology in brief, briefly state surgical management, explain specific considerations & problems encountered after amputation, advise various ways of psychological adjustment in this problem, describe various levels of amputation and suggest functional prosthesis components or accessories – foot assembly & terminal devices, describe pre & post prosthesis training program of upper & lower extremity amputations.
- 3) Tendon Injuries :  
Flexor & extensor tendon injury, state etiology in brief, explain various surgical procedures in brief, describe OT treatment & splintage.
- 4) Crush Injuries of Hand:  
Assess using various tests for evaluation of hand function, grip, pinch, oedema, sensory examination. Enumerate causes & describe various types of splints made. Describe various types of splint made with their uses in different conditions.
- 5) Cancer Rehabilitation:  
Describe preventive, restorative, supportive, and palliative aspects in radical mastectomy and head and neck cancer. Explain the concept of hospice, family systems and the need for treatment of the family as the unit care.
- 6) Vascular Conditions:  
Explain peripheral vascular disease, their complications and role of OT in their management.
- 7) OT in Blind:

Describe the role that the senses play in person's life & in the process of rehab. Describe the term blindness, refute common misconception about blindness, describe the emotional, physical & psychological needs of blind person, and explain preventive measures.

8) Occupational Therapy in Deaf & Dumb:

Explain development of auditory perception, define and classify deafness, enumerate causes of deafness, types of hearing aid, communication skills, and facilities for the deaf, mute, functional and vocational rehab, explain preventive measures, describe vestibular affections and re-training.

**Course Contents:**

- 1) Burns – definition, classification, stages of burns, OT in burns, Pre-graft, treatment, post graft treatment rehabilitation of burns.
- 2) Amputation – etiology, surgical management, special consideration and problems, psychological adjustment, levels of amputation, accessories and component of prosthesis, upper and lower extremity prosthetic training program for upper and lower extremity.
- 3) Tendon injuries – etiology, surgical treatment, OT treatment.
- 4) Crush injuries of hand, tendon and nerve injuries and their re construction, pre and post operative management in OT and splinting.
- 5) Cancer rehabilitation – preventive, restorative, supportive and palliative aspects of radical mastectomy, head and neck cancer.
- 6) Vascular condition – peripheral vascular diseases and OT
- 7) Occupational therapy in blind – definition and classification , mobility technique , communication skills , sensory re-education , emotional and physiological aspects of blindness , facilities for blind , prevention of blindness.
- 8) Occupational therapy in deaf – dumb definition and classification communication skills, types and uses of hearing aids , emotional and physiological aspects , facilities of deaf ,prevention of deafness , vestibular affectations and re-training.

**BOOK RECOMMENDED:**

- 1) Willard and Spackman's Occupational therapy
- 2) OT practice skills for Physical Dysfunction – Pedittri
- 3) OT in Physical Dysfunction – Scott
- 4) Therapeutic Exercise – Basmajian

- 5) Rehab Medicine – Goodgold
- 6) Rehab of Hand – Wynn & Parry
- 7) Rehab of Hand & upper extremity – Hunter & Mackin
- 8) Hand splinting – Phyllips, Gettle & Jonson
- 9) Therapeutic exercise – Kisner & Colby
- 10) Physical Rehab, assessment & treatment – O Sullavan

## SCHEME OF EXAMINATION

Scheme of theory examination for the subjects – OT in surgical conditions:

A) Distribution of max marks for the having 100 marks shall be as follows:

University exam – 80 marks, IA – 20 marks

IA (one exam at the end of each term)

Average of total marks obtained be considered for internal assessment.

Scheme of University Exam to be conducted out of 80 marks

Section – A: 1) MCQ single best response- (1×20) - 20 marks

Section – B: 2) SAQ – short notes 3 out of 4 -( 3×5)-15 marks

3) SAQ – short notes- 5 out of 6 -( 3×5) -15 marks

Section C:

4) LAQ – one question compulsory -15 marks

(LAQ should give break up of 15 marks)

5) \_ LAQ one question -15 marks (LAQ should give break up of 15 marks)

OR

LAQ one question - 15 marks (LAQ should give break up of 15 marks)

Scheme of clinical examination

OT in surgical condition: Total 100 marks

(University exam 80 marks, IA 20 marks)

IA (IA during clinical / ward exam & attitude assessment of ongoing clinical performance – i.e initiative, case report regularity etc)

University exam-80 marks

One long case of -40 marks

One short case / simulated case of -20 marks

Viva voce/spots - 20 marks

Long case to include evaluation, treatment and future planning of a single patient.

Short case/ simulated case spots – 4 spots identification, description and uses.

### **SCHEME OF EXAMINATION –B.O.T.-IV**

S. N.	Subject	Theory	I.A (Theory)	Total Theory	Clinical	I.A Practical	Total	Subject Total
1.	Advance in Occupational Therapy and Rehabilitation Medicine	80	20	100	-	-	-	100
2.	Occupational Therapy in Orthopedic Conditions	80	20	100	80	20	100	200
3.	Occupational Therapy in Neurological and Developmental Conditions	80	20	100	80	20	100	200
4.	Occupational Therapy in Psychiatric Conditions	80	20	100	80	20	100	200
5.	Community Based Occupational Therapy & Rehabilitation	80	20	100	-	-	-	100

6.	Biostatics and Research Methodology	40	10	50	-	-	-	50
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**NIMS UNIVERSITY, JAIPUR**  
**OCCUPATIONAL THERAPY SYLLABUS**  
**BOT- PART-IV**

**Total Transcript Hours: 1400**

1.     ADVANCES IN OCCUPATIONAL THERAPY -- (80 hrs)
2.     OCCUPATIONAL THERAPY IN ORTHOPEDIC CONDITIONS: THEORY -- (120hrs)
3.     OCCUPATIONAL THERAPY IN NEUROLOGICAL AND DEVELOPMENTAL CONDITIONS  
Theory -- (120 hrs)
4.     OCCUPATIONAL THERAPY N PSYCHIATRIC CONDITINS; Theory -- (120 hrs)
5.     COMMUNITY BASED OCCUPATIONAL THERAPY AND REHABILIATION: Theory --  
(80 hrs)
6.     BIOSTATISTICS AND RESEARCH METHODOLOGY -- (40 hrs)
7.     SUPERVISED CLINICAL PRACTICE -- (840 hrs)

During each clinical assignment, the student shall functionally diagnose, plan and practice clinical skills on patients under the supervision of clinical supervisor, and shall maintain folder in which prescribed case

histories and written assignment shall be documented. For each clinical posting student shall obtained signature from respective section in charge at the end of clinical posting.

Submission of duly signed assignment card is prerequisite for examination.

# ADVANCES IN OCCUPATIONAL THERAPY AND REHABILITATION MEDICINE

Total hours: Theory-80

Theory: 100 Marks (University exams: 80 Marks, Internal Assessment: 20 Marks)

## Course Objectives:

At the end of 4<sup>th</sup> years student will be able to fulfill the following objectives:

Understand and apply various theoretical skills mentioned below in their clinical practice.

1. Understand and use ethics in O.T.
2. Identify Management functions and strategies, documentation, quality assurance, fiscal management and marketing.
3. Define environment, identify components of human and non-human environments, understand the science of psychology and apply these concepts to the practice of occupational therapy.
4. List potential sources and product lines of referral for an industrial rehabilitation program, classify work levels, and explain industrial rehabilitation service, vocational evaluation and rehabilitation.
5. Explain hospice & family systems and the need for treatment of the family as the unit of care.
6. Describe home care delivery model and its implementation, parameters of home care delivery service- the patient, environment and caregiver, skill required for effective practice, constraints, influence of various issues that shape home care practice, role of practitioner in private practice.
7. Define health, health promotion, wellness; describe the ways in which occupational therapist can contribute to these.
8. Identify common strands of computer application in occupational therapy evaluation. Identify domains of treatment in occupational therapy where computer applications can be implemented. Explain the criteria for selection of software.
9. Explain the stress factors, stress response, techniques of stress management.
10. Have knowledge of common sports injuries, prescribe assistive, adaptive equipment and adaptation of methods explain role of occupational therapist in return to sports and athletic activities.

11. Define sexuality, list sexuality development milestones and response cycle. Explain role of nervous system in sexual function, how nervous, cardiac and pulmonary dysfunctions affect sexual functioning, levels and formats provided to patient regarding sexual counseling appropriate to occupational therapy.
12. Define adjunctive therapies: describe biofeedback, physical agent modalities and yoga therapy.

### **Course Content:**

1. Ethics in Occupational Therapy – key terms in ethical issues, ethical jurisdiction of the standards and code of ethics of All India O.T. Association, current ethical dilemmas in occupational therapy, issues and conflicts involved and solutions to the dilemmas- (4 hrs)
2. Service Management: management functions and strategies, Documentation, Quality Assurance, Fiscal Management and Marketing. - (6 hrs)
3. The human and non-human environments and the occupational therapy process- Definition of environment, components of human and non-human environments, science of environmental psychology & application to practice of occupational therapy.- (8 hrs)
4. Industrial Rehabilitation potential sources and product lines of referral for an industrial rehabilitation program, classification of work levels, industrial rehabilitation service, vocational evaluation & rehabilitation.
5. Environments of care-hospice - (4 hrs)
6. Home Care and Private practice- Home care delivery model, its implementation, parameters of home care, delivery service, skills required for effective practice, constraints, influence of various issues that shape home care practice, role of practitioner in private practice. - (8 hrs)
7. Wellness programs & Preventive Therapy- Definition of health, health promotion, wellness; role of occupational therapist.
8. Technology: assistive and computer technology application in occupational therapy-use of computer as a tool in clinical implementation, software selection-criteria and method, strategies and methods of clinical implementation in motor sensory, cognitive, ADL, effective domain.
9. Stress management stress factors, stress response, techniques in stress management- (5 hrs)
10. Introduction to sports medicine – common sports injuries, assistive, adaptive equipment, splints and adaptation methods, and role of occupational therapist in return to sports and athletic activities.
11. Introduction to human sexuality in relation to disability management in O.T. – Definition of sexuality, sexuality developmental milestones and response cycle, role of nervous system in sexual functions, effect of nervous, cardiac and pulmonary dysfunctions on sexual functioning, levels and formats provided to patients regarding sexual counseling appropriate to occupational therapy. -(8 hrs)



### **BOOKS RECOMMENDED:**

1. Occupational Therapy practice skills for Physical Dysfunction – L. Pedreti, Barbara Zoltan
2. Occupational Therapy for Physical Dysfunctions – C.A. Trombly
3. Willard and Spackman's Occupational Therapy
4. Biofeedback by J. Basmajian
5. Krusen's handbook of physical medicine and rehabilitation

### **SCHEME OF THEORY EXAMINATION:**

Distribution of maximum marks for the subject having 100 marks shall be as follows:

University Exam – 80 marks, internal assessment – 20 marks

Duration of papers – 3 hours

Scheme of exam to be conducted out of 80 marks i.e.

Section –A: M.C.Q.: Single best response -(1 x 20) -20 marks

Section-B: S.A.Q. Short notes -3 out of 4-(3 x 5) -15 marks

S.A.Q. Short notes- 5 out of 6- (5 x 3) --15 marks

Section-C 1) L.A.Q. – one question --15 marks (LAQ should give breakup of 15 marks)

2) L.A.Q. - one question --15 marks (LAQ should give breakup of 15 marks)

OR

L.A.Q. - one question --15 marks (LAQ should give breakup of 15 marks)

**Internal Assessment**– One exam at the end of each term. Average of total marks obtained to be considered for Internal Assessment.

# OCCUPATIONAL THERAPY IN ORTHOPAEDIC CONDITIONS

**Total hours: 400**

**(Theory-60, Clinical-60, Clinical Practice-280)**

Total marks 200, Theory: 100, Clinical: 100

Theory-University exam: 80, Internal assessment: 20

Clinical-University exam: 80, Internal Assessment: 20

The student will be able to fulfill the following objectives:

## **Course Objectives:**

1. Demonstrate appropriate evaluation procedure and principles of treatment for orthopedic patient.
2. Outline various congenital orthopedic conditions. Explain in brief O.T. Management.
3. Describe and demonstrate practices used in assessment and treatment planning of fracture of upper and lower extremity in complications and surgical management.
4. The principles and goals of treatment including use of PNF techniques in Erb's Palsy, Brachial plexus injuries and peripheral nerve injuries.
5. Enumerate injuries of vertebral column and spinal cord and describe its O.T. Management and various spinal orthosis.
6. Explain in brief O.T. Management for injuries around the joint and surgical intervention.
7. Briefly outline the reconstructive surgeries done in Polio and Cerebral Palsy. Outline the Role of Occupational Therapist in the same.
8. Explain in details rehabilitation program for Arthritis (Osteo, Pyogenic, TB, and Hemophilic) Ankylosing Spondylitis and Cervical Spondylosis.
9. Describe pain management in Occupational Therapy with special reference to joint protection and energy conservation techniques.
10. Analyze and apply ergonomic principles in management of Cumulative Trauma disorders.
11. Explain OT management for metabolic diseases of bones.

## **Course Contents:**

1. Orthopaedic clinical evaluation and treatment. -(2 hrs)
2. Congenital orthopaedic conditions and O.T. Management -(4 hrs)
3. O.T. for fractures of upper and lower limbs, management of complications -(8 hrs)  
Internal fixation, external fixation, excision and replacement arthroplasty.
4. Occupational Therapy management including PNF techniques for Erb's Palsy, Brachial plexus palsy and peripheral nerve injuries. - (9 hrs)
5. Injuries and pathological conditions of vertebral column and spinal cord, spinal orthosis and O.T. management. - (7 hrs)
6. Injuries at and around joints of upper and lower extremity, arthroscopic and surgical intervention O.T. treatment - (8 hrs)
7. Poliomyelitis and cerebral palsy. Reconstructive surgeries including lamb

- Lengthening procedures and orthotic management - (7 hrs)
8. Arthritis, Surgical and rehabilitation program. - (5 hrs)
  9. Pain management in Occupational Therapy. -(5 hrs)
  10. Cumulative trauma disorders and application of ergonomic principles in Management of such conditions.-(3hrs)
  11. Metabolic disease of bone Rickets, Osteomalacia, Osteoporsis, gout and O.T. Management. - (2hrs).

#### **CLINICAL:**

Evaluation, functional diagnosis and treatment planning/future planning: documentation of minimum 7 cases from above mentioned topics.

#### **BOOKS RECOMMENDED:**

1. Occupational Therapy practice skills for physical dysfunction- L. Pedretti, B Zoltan.
2. Occupational Therapy for Physical Dysfunctions – C. Trombly.
3. Occupational Therapy and Physical Dysfunctions – Principles, Skills and Practice –Anne Turner
4. Therapeutic exercise – Foundations and Techniques – Kisner C & L.A. Colby
5. Therapeutic Exercise – J. Basmajian – (Latest Ed.)
6. Willard and Spackman’s Occupational Therapy –
7. Treatment and Rehabilitation of Fractures – S. Hoppenfield and V. L. Murthy
8. Rehabilitation of the Hand by Wynnparry CB
9. Orthopaedic Physical Assessment – David Magee
10. Clinical Orthopaedic Rehabilitation – Brent Brotzman

#### **SCHEME OF THEORY EXAMIANTION:**

Distribution of maximum marks for the subject having 100 marks shall be as follows:

University exam – 80 marks, internal assessment- 20 marks

Duration papers: 3 hrs.

Scheme of exam to be conducted out of 80 marks – i.e.

Section-A: M.C.Q. Single best response --(1 x 20) -- 20 marks

Section-B: SA.Q. - Short notes-3 out of 4-(3x5) --15 marks

And

S.A.Q. - Short notes-5 out of 6-(5x3) - 15 marks

Section-C 1) L.A.Q. – one question -15 marks – (LAQ should give break marks)

2) L.A.Q. - one question -15 marks – (LAQ should give break up of 15 marks)

OR

L.A.Q. - one question -15 marks- (LAQ should give breakup of 15 marks)

**Internal Assessment** – one exam at the end of each term. Average of total marks obtained to be considered for Internal Assessment.

**SHCEME OF CLINICAL EXAMINATION:**

**Occupational Therapy in Orthopedic Conditions: - Total 100 marks**

**(University Exam. 80, Internal Assessment 20)**

Internal Assessment: 20, Marks (Internal Assessment during clinical/ward exams, Attitude: assessment of on-going clinical performance i.e. initiative, case reports, regularity, case presentation, seminars etc.)

University Examination : 80 marks

One long case : 40 marks

One short case/simulated case ; 20 marks

Viva voce/Spots : 20 marks

Long case to include evaluation, treatment and future planning of a single patient

Short case to include evaluation of a single patient.

# OCCUPATIONAL THERAPY IN NEUROLOGICAL AND DEVELOPMENTAL CONDITIONS

**Total Hours: 400**

**(Theory-60, Clinics-60, Clinical Practice- 280)**

Total marks-200, Theory: 100, Clinical: 100

Theory-University exam: 80, Internal assessment: 20

Clinical: University exam: 80, Internal Assessment: 20

## **Course Objectives:**

The student will be able to fulfill with the following objectives:

1. Demonstrate appropriate evaluation procedure and neurophysiological technique for patients with conditions commonly referred from neurology. Analyse and apply therapeutic activities using neuro-developmental, sensory integrative and neuro-physiological approaches appropriately.
2. Define Cognitive rehabilitation and discuss various evaluation skills and models of cognitive rehabilitation.
3. Occupational therapy management of neurovascular, neoplastic, inflammatory, infective and congenital affectations of brain (pyramidal, extrapyramidal, cerebellar, lower motor neurone) and spinal cord.
4. Understand normal physiology of swallowing; describe disease process resulting into dysphagia, state guidelines for assessment and treatment of patients with dysphagia.
5. Identify areas of abnormal and delayed development in children from birth to 5 years. Outline the principles and goals in therapeutic approaches and techniques in the treatment plan appropriate to a child's condition and state of development with designing, indications and fitting of hand splints, prostheses, calipers, other orthoses and braces.
6. Occupational Therapy management of infectious affectations of the brain.
7. Occupational Therapy management of cranial nerve dysfunction.

## **Course Contents:**

1. Neurophysiological principles applied to therapeutic procedures in the treatment of pyramidal, extrapyramidal, cerebellar and lower motor neuron lesions. Current neurophysiological theories and their application in O.T. in the various neurological problems in children, adolescents and adults including defects and injuries to the brain and spinal cord. - (10 hrs)
2. Cognitomotor perceptual skills: Evaluation, Scales used training and models of cognitive rehabilitation. - (3 hrs)
3. Preventive, curative and rehabilitative Occupational Therapy for common neurological conditions, such as stroke, traumatic head injury, brain tumors, cortical lesions, Vestibular Dysfunctions, Parkinson's disease, chorea, Athetosis, Cerebellar Dysfunctions, Multiple Sclerosis, Motor Neurone Disease, Human Immunodeficiency virus. Syringomyelia, Transverse myelitis, Tabes dorsalis, spinal cord tumours, Peripheral neuropathies, Myopathy, Myasthenia gravis. (15 hrs)
4. Management of dysphagia normal physiology of swallowing, describe disease process resulting into dysphagia, state guidelines for assessment and treatment of patients with dysphagia. (2 hrs)

5. Occupational Therapy for Development Disabilities: - (20 hrs)
  - i. Occupational Therapy with neonates and infants.
  - ii. Cerebral Palsy: Classification, aetiology and O.T. approaches including neurodevelopmental therapy, preschool training, O.T. in the school system, Home care programme/
  - iii. Common Genetic Disorders; Neural Tube Defects.
  - iv. Sensory Integrative therapy.
6. Infective affectations of the brain: meningitis, encephalitis, cerebral malaria -(5 hrs)
7. O.T. for cranial Nerve dysfunction - (5 hrs)

**CLINICAL:**

Evaluation, functional diagnosis and treatment planning/future planning: documentation of minimum 7 cases from above mentioned topics.

**BOOKS RECOMMENDED:**

1. Occupational Therapy practice skills for physical dysfunction by L. Pedretti, B. Zoltan
2. Occupational Therapy for Physical Dysfunction by C.A. Trombly
3. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by A. Turner
4. Willard and Spackman's Occupational Therapy

**For Reference:**

1. A manual for evaluation and treatment of perceptual and cognitive deficits – B. Zoltan, E. Siev, B. Freishtat.
2. Neurological Rehabilitation- A.U. Darcy
3. Occupational Therapy for children: J. Case smith and A Pratt.

**SCHEME OF THEORY EXAMINATION:**

Distribution of maximum marks for the subject having 100 marks shall be as follows:

University exam – 80 marks, internal assessment- 20 marks.

Duration of papers 3 Hrs/

Scheme of exam to be conducted out of 80 marks – i.e.

Section-A: M.C.Q. Single best response - (1 x 20) -20 marks

Section-B: S.A.Q – Short notes-3 out of 4-(3 x 5) -15 marks

And

S.A.Q. – Short notes – 5 out of 6-(5x 3) - 15 marks

Section-C: 1) L.A.Q.-one question -15 marks (LAQ should give breakup of 15 marks)

2) L.A.Q. one question --15 marks (LAQ should give breakup of 15 marks)

OR

LAQ- one question --15 marks (LAQ should give breakup of 15 marks)

**Internal Assessment** – One exam at the end of term. Average of total obtained to be considered for Internal Assessment.

# OCCUPATIONAL THERAPY IN PSYCHIATRIC CONDITIONS

**Total hours: 400 (Theory-60, Clinics-60, Clinical Practice-280)**

**Total marks: 200, Theory: 100, Clinical: 100**

Theory – University exam: 80, Internal assessment: 20

Clinical- University exam: 80, Term work: 20

## **Course Objectives:**

The student will be able to fulfill the following objectives:

1. Describe frames of references used in mental health with reference to Occupational Therapy: Model of Human Occupation, Behavior, Developmental, Sensory Integrative, Cognitive Disability and Psychoanalytical.
2. Explain and formulate the general and specific objectives of Occupational Therapy.
3. Enumerate and select appropriate assessment tools from variety of instruments available for evaluation of psychiatric patients. In addition the student will be able to evaluate the patients commonly referred from psychiatry.
4. Analyse jobs and activities and prescribe activities for psychiatric patients.
5. Describe various types of therapeutic media and their application in psychiatric occupational therapy such as behavior therapy, projective techniques, industrial activities, social skills training, group therapy, arts and creative activities, sensory integrative therapy, recent advances.
6. Describe and demonstrate current practices used in assessment: treatment planning and implementation, in acute care and long term management of schizophrenic disorders, mood disorders, dementia, generalized anxiety disorders, phobias, conversion and dissociative reactions, obsessive compulsive disorders, substance related disorders, Psychiatric aspects of AIDS, seizure disorders, psychosomatic and personality disorders, eating disorders, learning disorders mental retardation and autism.
7. Outline the role of occupational therapy as a team member in various psychiatric setups such as community-care, half way homes, day care centre's, sheltered workshops, long term care, psychiatric units of acute care hospitals, child guidance clinics.

## **Course Content:**

1. Theoretic basis of occupational therapy: Frames of references used in psychiatric occupational Therapy, Model of Human Occupation, Behavior, Developmental, Sensory Integrative, Cognitive disability and Psychoanalytical. - (6 hours)
2. General and Specific objectives and prescription of psychiatric occupational therapy. - (2 hrs)
3. Methods of evaluation of psychiatric patient in occupational therapy. - (4 hrs)
4. Activity and job analysis, meaning of and therapeutic utilization of activities in psychiatric Occupational therapy - (4 hrs)
5. Types of therapeutic media used in psychiatric occupational therapy, behavior therapy

- Projective techniques, industrial activities, arts and creative activities, social skills training, Group therapy, sensory integrative therapy, recent advances -(6 hrs)
6. Long term & short term OT intervention based on current practice in - (32hrs)
    - a. Schizophrenic disorders- 4 hrs
    - b. Mood disorders - 4hrs
    - c. Dementia- 2 hrs
    - d. Generalized anxiety disorders & Phobias - 2hrs
    - e. Conversion & Dissociative reactions -2hrs
    - f. OCD- 2 hrs
    - g. Substance related disorders - 2hrs
    - h. Psychiatric aspect of AIDS - 2hrs
    - i. Seizures disorders - 2hrs
    - j. Physiological factors affecting medical conditions (Psychosomatic conditions) and Personality disorders -2hrs
    - k. Eating disorders - 2 hrs
    - l. MR -2 hrs
    - m. Learning disorders - 2hrs
    - n. Autism - 2 hrs
  7. Role of OT as a team member in CBR, half way homes, day care centers. Sheltered workshops, long term care, psychiatric unit of acute care hospitals, child guidance clinic.

**CLINICAL:**

Evaluation, functional diagnosis, and treatment planning/ feature planning documentation of minimum 7 cases from above mentioned topics

**BOOKS RECOMMENDED:**

1. Willard & Spackman's
2. OT in short term Psychiatry M Wilson
3. OT long term Psychiatry – M Wilson
4. OT in Communication Process - G.S Fidler
5. Quick reference of OT BYy K Reed
6. OT & Mental Health by J Creek
7. Mental health concepts and techniques for otist assistant by M.B Early.

## SCHME OF THEORY EXAMINATION:

Distribution of maximum marks for the subject having 100 marks shall be as follows:

University exam- 80 marks, internal assessment- 20 marks

Duration of papers 3 hours

Scheme of exam to be conducted out of 80 marks – i.e.

Section-A: M.C.Q.: Single best response - (1 x 20) - 20 marks

Section-B: S.A.Q. - Short notes-3 out of 4 (3x5) -15 marks

AND

S.A.Q. Short notes – 5 out of 6 (5x3) -15 marks

Section-C: 1) LAQ – one question --15 marks

2) LAQ-one question -15 marks (LAQ should give breakup of 15 marks)

OR

LAQ-one question -15 marks (LAQ should give breakup of 15 marks)

**Internal Assessment** – one exam at the end of each term. Average total marks obtained to be considered for Internal Assessment.

## SCHEME OF CLINICAL EXAMINATION

### Occupational Therapy in Psychiatric Conditions:

#### Total 100 marks

**Internal Assessment:** 20 Marks (Internal Assessment during clinical/ward exams, Attitude: assessment of on-going clinical performance- i.e. initiative, case reports, regularity, case presentations, seminars etc.)

University Examination : 80 marks

One long case : 40 marks

One short case/Simulated case : 20 marks

Viva Voce/Spots : 20 marks

Long case to include evaluation, treatment and future planning of a single patient.

Short case to include evaluation of a single patient.

# COMMUNITY BASED OCCUPATIONAL THERAPY & REHABILITATION

**Total hours: 80 (Theory-80)**

**Total 100 Marks**

**Theory: 100 Marks (Final exams: 80 Marks, Internal Assessment: 20 Marks)**

## **Course Objective:**

The student will be able to fulfill the following objectives:

### **1. CBR:**

- \* Define CBR and explain its MODELS.
- \* know how to start a CBR program
- \* Clearly understand the role of O.T. and the contributions of other health professionals.
- \* differentiate CBR/IBR
- \* discuss the role of O.T. in disaster management.

### **2. COMMUNITY MEDICINE**

- \* Understand various concepts of health and disease
- \* define health and describe dimensions of health

### **3. SOCIAL FACTORS AND HEALTH**

- \* understand concepts in sociology and cultural factors in health & disease
- \* Explain the social problems of workers especially those disabled.
- \* Epidemiology

### **4. OCCUPATIONAL HEALTH**

\* Define occupational health and understand the role of OT in occupational disorders like occupational lung disease.

- \* Explain prevention of occupational diseases especially medical and engineering measures.

### **5. CHILD SURVIVAL AND SAFE MOTHERHOOD PROGRAM**

- \* understand the role of CSSM as a national program.
- \* emphasize the role of the following conditions in community setting
  - a) Congenital orthopedic conditions .e.g. CDH, CTEV

b) Neurological disorders in the new born e.g. CP, spina bifida and AMC

## 6. NUTRITION AND HEALTH

- \* Describe constituents of food, their functions and national nutritional program
- 7. Appreciate and use key terms such as anthropology, ethnography, skill transfer, knowledge, attitude and community education, appropriate technology and multi-purpose health workers.
- 8. Understand International classification of disability according to WHO's ICF (2001)
- 9. Describe magnitude of disability problems, its causes and future trends.
- 10. Define 'Person with disability' and highlight upon "Persons with Viability Act" by Government of India 1995. Understand basic concepts of disability evaluation and certification in India and social legislation.
- 11. Explain prevention and detection of disability and role of O.T.
- 12. Outline the principles of organization and administration, organizational chart, starting a new rehabilitation centre-procedure, survey, and interview and planning.
- 13. Outline the principles and goals in designing, prescription, fabrication, check out of orthoses and prosthesis and apply knowledge in designing the necessary alternations required as per the clinical conditions.
- 14. Understand the adaptation and appropriate teaching methods in wheelchair selection process.
- 15. Develop innovative low cost aids and appliances in respect to therapeutic equipment and adaptive devices, splints and mobility aids.
- 16. Describe the role of rehabilitation team workers such as physician, surgeon, occupational therapist, physical therapist, speech therapist, psychologist, social worker, vocation counselor, special education teacher, multipurpose health worker in rehabilitation.

### Course Content:

- 1. CBR: Definition, models, structure, process, outcome, role of O.T. and the contributions of other health professionals, differentiate CBR/IRB, Occupational Therapy for disaster management. - (6hrs)
- 2. Concepts of health and disease – definition and dimensions of health. - (4 hrs)
- 3. Social factors and health- concepts in epidemiology, sociology and cultural factors in health and disease, social problems of disabled workers. - (4 hrs)
- 4. Occupational health-definition of occupational health, role of O.T. in occupational disorders like occupational lung disease. Medical and engineering measures in prevention of occupational diseases. (3 hrs)
- 5. Child survival and safe motherhood program- role of CSSM as a national program, Role of O.T. in orthopedic and neurological conditions in new born such as CDH, CTEV, CP, spine bifida and AMC in community setting. -(6 hrs)
- 6. Nutrition and health- constituents' of food, their functions and national nutritional programs. (3 hrs)
- 7. Anthropology, ethnography, skill transfer, knowledge, attitude and community education, appropriate technology.
- 8. International classification of functioning, disability and health: WHO's ICF 2001?
- 9. Magnitude of disability problems, its causes and future trends. - (3 hrs)
- 10. Persons with disability act (1995), National Trust Act 1999, RCI Act 1992 by Government of India. (3 hrs)
- 11. Prevention and detection of disability and role of O.T. in it. - (3hrs)

12. Principles of organization and administration, organizational chart, starting a new rehabilitation centre- procedure, survey, interview and planning. - (6 hrs)
13. Assistive Technologies. - (6 hrs)
  - a) Prosthesis:
    - i. Definitions, aim, principles an amputees training and evaluation - (2hrs)
    - ii. Upper extremity prosthesis – Types of amputee, types and components of prosthetic Prescription criteria, checkout, pre-prosthetic and prosthetic training. - (3 hrs)
    - iii. Lower extension prosthesis- Biomechanical consideration, types and components prosthesis, pre and post prosthetic, training and checkout. - (3 hrs)
    - iv. Prosthetic deviation in A/K and B/K Prosthesis. - (2 hrs)
  - b) Orthoses:
    - i) Definition, classification, indication, principles, material used. - (2hrs)
    - ii) Orthotic components, terminology used in the upper, spinal and lower limb orthosis - (2hrs).
    - iii) Spinal orthosis: classification, principle and indication in brief description of each - (3 hrs)
    - iv) Cervical orthosis: Types, goals and brief description- (2 hrs)
    - v) Upper extremity orthoses: Types, goals, and brief description and fabrication of shoulder, elbow, and wrist hand orthoses. - (3 hrs)
    - vi) Lower extremity orthoses: Brief description of hip, knee and ankle orthoses and shoes modification. (3 hrs).
14. Wheelchair selection of process, adaption and appropriate teaching. - (3 hrs)
15. Develop innovative low cost aids and appliances in respect to therapeutic equipment and adaptive device, splint and mobility aids. - (3 hrs)
16. Role of each rehab team worker. - (2 hrs)

**BOOK RECOMMENDED:**

1. Text book of social and preventive medicine by Park
2. Disabled village children by David Werner
3. Occupational therapy for physical dysfunction by C.A Trombly
4. Willard and Spackman's Occupational therapy by Hokins and H Smih's
5. WHO's ICF 2001
6. Guidelines for evaluation of various disabilities and procedure for certification by Ministry of Social Justice And Empowerment Gove of India (notification 2001)
7. Objective evaluation of impairment and ability in locomotor handicapped by Dr Sabapathyvinayagam Ramar.

References:

1. Community based rehab by Malcolm Peat

### **Scheme o Theory Examination**

Distribution of max marks for the subjects having 100 marks shall be as follows

University Exam- 80 marks, IA – 20 marks

Duration of papers 3 hrs

Scheme of exam to be conducted out of 80 marks i.e.

Section- A: MCQ single best response - (1 ×20) - 20 marks

Section B: SAQ short notes – 3 out of four- (3 ×5) -15 marks

And

SAQ – short notes – 5 out of 6 - (3 ×5) -15 marks

Section C: 1) LAQ – one question-.15 marks

(LAQ should give break up of 15 marks)

2) LAQ – one question - 15 marks

(LAQ should give break up of 15 marks)

OR

LAQ – one question -15 marks

(LAQ should give break up of 15 marks)

**Internal Assessment** – one exam at the end of each term. Average of total marks obtained to be considered for IA.

# BIOSTATISTICS AND RESEARCH METHODOLOGY

**Total hours: 40**

**Theory: 50 Marks (Final exams: 40 marks, internal assessment: 10 marks)**

## **Course Objectives:**

The student should know following objectives:

1. Understand advantages of reviewing literature, sources and methods of research.
2. Distinguish types of studies; understand strategies to eliminate errors/bias selection of sample.
3. Enumerate details needed for writing protocol, know contents of research protocol.
4. Understand what are biomedical ethics, informed consent, functioning of ethical committees.
5. Describe how to collect data and present it.
6. Define and explain common statistical terms.
7. Explain the calculations of mean median, with average and percentile calculation.
8. Describe importance of finding standard deviation, Quartile derivation, variables and calculate them.
9. Describe the meaning of normal distribution and normal curves.
10. Describe various sampling methods and their application.
11. Explain various sampling variability and significance of different sampling.
12. Define term probability; explain various theorems and various methods, hypothesis in their calculation.
13. Describe significance of calculation and recording difference in mean values.
14. Explain application of Chi-square test.
15. Explain related sampling and importance in finding correlation and regression.
16. Explain various methods of frequency distribution.
17. Describe measure of central value.
18. Explain measurement of different variables.
19. Application of demography and vital statistics.
20. Explain correlation of measures of population and vital statistics. Explain importance of cumulative distribution of norms.

## **Course Content;**

1. Review of literature - (2hrs)
2. Study design - (3 hrs)
3. Sample size - (1 hrs)
4. Sampling variability and significance - (2 hrs)
5. Protocol writing - (2 hrs)
6. Ethical aspects - (2 hrs)
7. Data collection and presentation- (3 hrs)
8. Common statistical terms - (2 hrs)
9. Measures of location, average and percentiles - (3 hrs)
10. Variability and its measures. - (3 hrs)

11. Normal distribution and normal curve- (2 hrs)
12. Probability - (2 hrs)
13. Significance of difference in mean - (2 hrs)
14. Chi-Square test - (2 hrs)
15. Correlation and regression - (3 hrs)
16. Demography and vital statistics - (2 hrs)
17. Correlation of measures of population and vital statistics. - (2 hrs)
18. Referencing Methods - (1hrs)
19. Type of Research - (1 hrs)

**BOOKS RECOMMENDED:**

Practical approach to PG dissertation – R. Raveendran &. Gitanjali Research Methods for Therapist-Hicks  
Carolyn  
Methods in Biostatistics – Mahajan

## SCHEME OF THEORY EXAMINATION:

Distribution of maximum marks for each subject/section having 50 marks shall be as follows.

University exam- 40 marks, internal assessment – 10 marks

Scheme of exam to be conducted out of 40 marks – i.e.

Section –A: M.C.Q. Single best response – (1 x 10) –10 marks

Section –B: S.A.Q. - Short notes-3 out of 4-(3 x 5) -15 marks

Section-C: L.A.Q. One long question -15 marks (LAQ should give breakup of 15 marks)

(1 out of 2)

**Internal Assessment** – One exam at the end of each term. Average of total marks obtained to be considered for Internal Assessment.

## **INTERNSHIP**

**TOTAL HOURS 1014 (26 WEEKS)**

1. Occupational Therapy in Musculo- skeletal conditions - (143 hrs)
2. Occupational Therapy in Medicine and Neurosciences - (143 hrs)
3. Occupational Therapy in Mental Health - (143 hrs)
4. Community Based Occupational Therapy - (143 hrs)
5. Occupational Therapy in Surgical conditions - (74 hrs)
6. Occupational Therapy in developmental disabilities - (74 hrs)
7. Elective (any two)
  - a. Occupational Therapy in plastic surgery and hand - (74 hrs)
  - b. Pediatrics surgery and S.I. - (74 hrs)
  - c. Occupational Therapy in Cardiovascular & thoracic surgery - (74 hrs)
8. Project - (77 hrs)

## **INTERNSHIP CERTIFICATION**

- Evaluation
1. Attitude: The student shall put up not less than 95% attendance during each clinical assignment. Students performance shall be graded (1-5 grade) by the respective clinic in charge at the end of each assignment. The candidate shall repeat the assignment if he gets grade less than 3.
  2. Project: Each candidate shall submit his project duly completed and will undergo viva at the end of Internship.

The student shall be granted internship completion certificate by the principal after getting satisfactory grade in all the clinical units and successful submission of the project.

