

SCHEME OF EXAMINATION & SYLLABUS OF BACHELOR OF OCCUPATIONAL THERAPY :

4½ Years Degree Course (FIRST THROUGH FOURTH YEAR) + (INTERNSHIP OF SIX MONTHS)



MADHYAPRADESH MEDICAL SCIENCES UNIVERSITY, JABALPUR
ACADEMIC SESSION 2015-16 ONWARDS

Common ordinance for M P Universities for the PARAMEDICAL COURSES
Prepared by BARKATULLAH UNIVERSITY BHOPAL in consultation with the
Registrar M. P. Paramedical Council, Bhopal (M.P.)

ORDINANCE No. - 219

Ordinance for various Degree courses (3 years and above) in paramedical subjects

Objective of the courses -

1. The training of the candidate registering for various degree 3 years and above courses are aimed to develop skill in all diagnostics/ therapeutics tests and their interpretation on the modern hospital laboratory.

The degrees in various courses are of three years or above.

2. Eligibility for admission

(A) B. P. T. and B. O. T. course

The candidate must have passed 10 +2 and should obtain 50% marks in aggregate of Physics, Chemistry and Biology (P. C. B.).

(B) All Paramedical degree courses (other than B. P. T. & B. O. T.)

The candidate must have passed 10 + 2 with at least 45% marks in aggregate of Physics, Chemistry and Biology (P.C. B.).

(C) B. M. L. T.

3. The candidate must have passed 10+2 with at least 45% marks in aggregate of Physics, Chemistry and Biology (P. C. B.) or 10 + 2 vocational (M. L. T.) course with at least 45% marks will also be eligible.
4. In case of S. C. / S. T. / O. B. C. candidate 5% marks relaxation will be given for the admission in above said course.
5. Weightage will be given as per University rules.
6. Number of seats will be 50 in each course.
7. The minimum age for admission shall be 17 years On 31 December of academic year of admission.
8. Selection of candidate will be on the basis of the entrance examination or in the absence of entrance examination purely on merit on the basis of marks obtained in qualifying examination.

9. For degree examination, candidates who have attended 75% in all theory classes and 85% in practical can only appear in university examination.
10. Revaluation & re totaling both shall be allowed as per university rules.
11. In order to pass the examination it is mandatory to obtain 50% marks in theory and practical examination separately. The viva and the sessional marks are to be added to the theory marks.
12. Other rules regarding conduct of examination will be as per Ordinance no. 06.
13. Permission will be given to start the courses after the permission from M P Paramedical Council (Department of Medical Education, Government of M. P.).
14. Syllabus and scheme of the examination shall be decided by the board of studies and Academic council of the university from time to time as per guidelines from M P Paramedical Council.
15. The medium of examination shall be English.
16. The examination pattern.

(A) B. P. T. & B. O. T. (4 years and six months internship)

- (1) The pattern for B. P. T. & B. O. T. shall be like M. B. B. S. There will be two exams in each year. Main exam to be held in April/May and supplementary / second exam to be held in July/ August.
- (2) Students of B. P. T. & B. O. T. who have failed in first year will not be allowed to attend the classes of second year until and unless he/she has passed in all subjects of first year. But in case of second and third year, student is allowed to attend higher classes, but he/she is eligible to appear in higher class exam only when he/she has passed all the subjects of the previous year.

(B) Other Degree Courses –

There will be two examinations in each year for remaining degree courses the main & supplementary as per University rule. The main examination will be held in April / May & Supplementary examination will be held in July / August & the candidate failing in the main & subsequently in supplementary examination shall not be allowed to go in the higher classes unless clearing all the previous examination.

17. There will be two examiners including one external and internal for both theory and practical examinations.
18. The examiner who evaluates the theory copies preferably should be appointed as external for practical examination for said course.

19. The colleges must conduct sessional exams twice in an academic year (once in a six months period) and send the same marks to the university one week before the commencement of university theory examination.
20. In order to be an examiner, a faculty member should have minimum three years of teaching experience and not below the rank of the Asst. professor and /demonstrator/tutor.
21. The examination papers (Theory) will be evaluated centrally at the university.
22. Various Degree course three years and above -
 1. Physiotherapy.
 2. Occupational therapy.
 3. Speech Therapy.
 4. X-Ray Radiographer.
 5. Human Nutrition.
 6. Pathology.
 7. Medical Lab technology.

Note: FOR OTHER PROVISION WHICH ARE NOT COVERED IN THIS CURRICULUM & SYLLABUS WILL BE APPLICABLE AS PER THE UNIVERSITY ORDINANCES OF MADHYAPRADESH MEDICAL SCIENCES ,JABALPUR (M.P.)

Regulation For The Degree of Bachelor of Occupational Therapy (4½ Year Degree Course)

1. The institute is desirous of administering the course should fulfill all the essential requirements as are fixed for Bachelor of Occupational Therapy degree course [B.O.T] as given in schedule - I
2. In addition to the above the applicant institute must have a department of occupational therapy in the hospital.
3. A candidate who has attained at least the age of 17 years on the 31st December of the year of his admission to the Bachelor of Occupational Therapy Course may be admitted to the Part I Examination provided he has perused a regular course of study for not less than one academic year in a College affiliated to the University in Bachelor of Occupational Therapy Course in the prescribed subjects after passing the Higher Secondary Examination (10+2) conducted by the Board of Higher Secondary Education or an examination considered equivalent there to and recognised as such by this University with English, Physics, Chemistry and Biology with minimum 45% marks. There will be only 40 general * 5 N.R.I. Seats in any Institution running this programme.
4. A candidate who has appeared at the Part-I Examination may proceed to attend classes in the second year in a college affiliated to the University in Bachelor of Occupational therapy Course and may be admitted to the Part-II Examination provided he has perused a regular course of study in the prescribed subjects for one academic year and provided also he has passed the part-I examination in all the subjects.
5. A candidate who has appeared at the Part II Examination may proceed to attend classes in the third year in a College affiliated to the University in Bachelor of Occupational Therapy Course and may be admitted to the Part III Examination provided he has perused a regular course of study in the prescribed subjects for one academic year and provided also he has passed the Part-II Examination in all the subjects. The last year includes the part-IV. Students can be admitted to Part-IV after successful completion of part III examination.
6. a) For each part of the examination there shall be two examinations in a year, Annual and the Supplementary Examination.

b) An Examination for the Degree of Bachelor of Occupational Therapy shall be held annually followed by a Supplementary Examination to be held after six weeks or as decided by the University after the publication of results of the Annual Examination on such date as the University shall determine and duly notify.
7. In order to pass the Part I/II/III & IV Examination, a candidate must obtain 50% marks of the theoretical and practical examination separately internal Assessment marks obtained by a candidate will be counted in determining his percentage of marks in the Theoretical / Practical portion of the examination. A candidate shall be deemed to have failed in a subject if he fails to obtain pass mark either in Theoretical or in Practical of that particular subject.
8. Every candidate for admission to the Part I/II/III & IV examination shall send to the Registration of Examination an application in the prescribed form through the Principal of his college within the last date fixed for the purpose by the University together with a prescribed fee for each Part of the Examination. No admit card for the examination shall be issued in favor of a candidate unless his application is accompanied by a certificate from the Principal of his college showing his so good conducted (b)

satisfactory performance of college tests and (c) attendance & 75% of practical classes held in each of the subjects in which he intends to appear.

9. Candidate who will be successful at the Part-IV Examination shall be required immediately to undergo compulsory rotating full-time internship for a period of six months in the institution, Hospital. Only after successful completion of the compulsory Rotating Internship, a candidate shall be admitted to the degree.
10. The candidate who obtain 50% marks or more but below 60% marks in Part I, II, III & IV taken together will be declared to have passed in second division and candidate who obtain more than 60% percent marks will be declared to have passed in first division, candidates who obtain 75% or more marks in the practical and theory examination shall be granted distinction in the subject.
11. SUPPLEMENTARY EXAMINATIONS:

In addition to the Annual Examination there shall be supplementary examinations for first year, second year III Year and final year. Occupational therapy students, which shall be held in July. Candidates who fail to pass or fail to present themselves at the annual examination may be admitted to these supplementary examinations on payment of the prescribed fees. Only those candidates shall be declared to have passed the supplementary examination that obtain the requisite percentage of pass marks.

Candidate who fail to pass, or fail to present themselves at the supplementary examination of first year, second year, third year and final year in occupational therapy may be permitted to appear at the next annual examination after perusing a further course of prescribed study.

12. Scheme of Examination and syllabus and seats will be determined by the Board of Studies / Standing Committee of the academic council of the University from time to time.

Syllabus for Bachelor of Occupational Therapy PART - I

1. The Part-I Examination shall consist of the following subjects (Teaching hour approximately for lectures to be delivered and practical classes to be held in each subject indicated against each subject).

No	SUBJECT	LECTURES	PRACTICAL
1.	Human Anatomy	140	60
2.	Human Physiology including Bio chemistry	160	60
3.	Pathology & Pharmacology including Bacteriology	100	-
4.	Psychology	80	-
5.	Principles of Occupational Therapy	160	140
6	Occupational Therapy Clinicals	--	500

BOT 1st Year Scheme of Examination

The full marks for each subject and the minimum marks required for passing the same shall be as follows:

No	Subject	Written	Int. Asstt.	Min Marks (Wrt. + Int Asstt.)	Practical	Int. Asstt.	Min Marks (Pract + Int. Asstt.)	Total Marks
1	Human Anatomy	75	25	50	75	25	50	200
2	Human Physiology including Bio-chemistry	75	25	50	75	25	50	200
3	Pathology & Pharmacology	75	25	50	-	-	-	100
4	Psychology	75	25	50	-	-	-	100
5	Principles of Occupational Therapy	75	25	50	75	25	50	200

The pattern of University theory examination will be as under for 75 Max. Marks.

No. & Type of Question	Marks for each question	Total Max. Marks
08 Very Short Answer Questions (<i>Answer to be given in 50-60 words</i>)	02	16
4 Short Answer Questions (<i>Answer to be given in 250-300 words</i>)	08	32
2 Essay Type Questions (<i>Answer to be given in 450-500 words</i>)	13.5	27
		75

This will be applicable to all theory question papers of BOT 1st Year.

PAPER I

HUMAN ANATOMY

Theory - 140 hrs.

Practical / Laboratory- 60 hrs

Section – A [40 marks]

GENERAL ANATOMY

[80 hrs]

Introduction, scope of anatomy, cell as a structural and fundamental unit, Organization of tissue organs and system, Anatomical position of the body, Anatomical terms.

[10 hrs]

Skin and the appendages of the skin.

[02 hrs]

Muscles: Voluntary and Involuntary and cardiac muscles, short description of the structure of different muscles.

[03 hrs]

Muscles: Classification of voluntary muscles. Origin and Insertion of upper extremity, lower extremity, face, trunk head & neck muscles, Tendon, Aponeurosis, Isometric and Isotonic contraction of muscles.

[20 hrs]

Bones: composition and functions, classification of bones according to morphology and development, various terms and markings on the bones.

[02 hrs]

Bones: Development of bones, parts of long bones and blood supply of bones, general remarks about bones of skull, thorax, vertebral column and bones of upper & lower extremities in detail.

[20 hrs]

Joints: Definition, classification of joints structure and cartilaginous joints.

[03 hrs]

Joints: Structure of synovial joints, Movements of joints, blood supply of bones and joints and Bursa, close pack and loose pack position of the joints.

[05 hrs]

Nervous system: Nerve cell, Synapse and reflex.

[02 hrs]

Nervous system: organization of central nervous systems, Spinal Nerves and nerve endings.

[03 hrs]

Section – B [35 Marks]

Theory :- [60 hrs]

11. Cardiovascular system: Arteries, Veins, Capillaries, and Collateral circulation. [03 hrs]
12. Cardiovascular system: Blood as a connective tissue, Gross anatomy of Heart, large blood Vessels. [07 hrs]
13. Respiratory system: General outline of respiratory passages, gross anatomy of Lung, Pleura. [05 hrs]
14. Respiratory system: Broncho-pulmonary segments, Inter-costal muscles and Mechanism of respiration. [05 hrs]
15. Digestive system: General idea or outline of gastro- intestinal tract and associated glands. [03 hrs]
16. Excretory system structure and function of kidney, general outline of Ureters, Urinary bladder and Urethra. [03 hrs]
17. Reproduction system: general outline of male and female genital organs. [03 hrs]
18. Endocrines: Definition, Structure in general. [03 hrs]
19. Lymphatic system: Lymphatic circulation, Lymph nodes and Lymphoid tissue. [03 hrs]
20. Neuro-anatomy:- Gross structure of [25 hrs]
 - Sulci and Gyri and various areas of cerebral hemispheres, Thalamus, Hypothalamus, Basal Ganglia.
 - Cerebellum.
 - Pons, Medulla
 - Spinal Cord.
 - Ascending tracts & Descending tracts
 - Clinical application of Knowledge of the tracts.
 - Autonomic nervous system.
 - Nervous control of the urinary bladder and bladder dysfunction.

Demonstration [60 hrs]

1. Muscles of the whole body.
2. Demonstration of organs in thorax and abdomen.
3. Demonstration of viscera in head, face and neck.
4. Demonstration of all the glands in the body.
5. Identification of bony prominences on inspection and palpation in the body, especially of extremities.
6. Points to palpate nerves and arteries.
7. Identification of prominent muscles.
8. Extra-ocular muscles and salient points about the eye ball.
9. Demonstration on Brain.

Kinesiology

- Basic Concepts
- Muscular system
- Joints
- Machinery Musculoskeletal system
- Principles of Motion
- Principles of force and work
- Basics of the development of motor skill
- Principles of stability
- Postural principles

Regional Anatomy

Superior Extremity:

Osteology: Clavicle, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals

Soft parts: Breast, Pectoral region, Front of arm, Back of arm, Cubital fossa, front of forearm, back of forearm, nerves and vessels of forearm, palm, Dorsum of Hand, Shoulder girdle, joints of hand.

Inferior Extremity

Osteology: Hip bone, Femur, Tibia, Fibula and Patella, Tarsal, Metatarsals.

Soft parts: Front of thigh- Femoral canal and femoral hernia, Adductor canal, medial compartment of thigh, gluteal region, Back of thigh, Popliteal fossa, Anterior compartment of leg, posterior compartment of leg, sole of foot, venous drainage of leg, hip joint, ankle joint, tarsal joints.

3.Trunk:

Osteology: Cervical, Thoracic and Lumbar Vertebra, Sacrum, Coccyx and Ribs.

Soft tissue: Inter-vertebral joints, costo-vertebral joints, Inter-vertebral Disc; Ligaments and Muscles.

4. Skull as a whole and mandible.

5. Demonstration of Dissected parts.

Parts of Limbs, Trunk, Brain, Thorax and Abdominal Contents.

Books Recommended:

1. An Introduction to fundamental of anatomy by David Sinclair (Blackwell Publication).
2. Gray's Anatomy
3. Cunningham's Manual of Practical anatomy
4. Anatomy and physiology by Smout and Macdonald(Edward Arnold)
5. Kinesiology by Katherine (Saunders Co).
6. Clinical Kinesiology by Brunnstrom.
7. Kinesiology and Applied Anatomy by Resch-Bruke(Lee & Febigar)
8. Applied anatomy and Kinesiology by W. Bower & H. Stone(Lee & Febigar)
9. Caties primary anatomy by Bestmaji J.
10. Principles of anatomy and Physiology by Tortora & Grabowski (Harper Collons College Publishers)
11. Anatomy by B.D. Chourasia.

Special Note: Special emphasis should be on musculo skeletal anatomy & Neuro anatomy

Note:- For Section – A The long question should be asked form the topic 1,4,6,8 and short notes can be form any other topic.

For Section – B The long question should be asked form the topic 12,14,20 and short notes can be form any other topic.

PAPER-II

HUMAN PHYSIOLOGY INCLUDING BIOCHEMISTRY

Theory: 160 hrs

Practical: 60 hrs

Section – A [40 marks]

HUMAN PHYSIOLOGY [100hrs]

Objectives: At the end of the course, the candidate shall-

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 Musculo-skeletal, Neuro -motor, Cardio-respiratory, Female urogenital function and alteration in functions with ageing.
3. Analyze physiological response & adaptation to environmental stresses with special emphasis on physical activity and temperature.
4. Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, cardiovascular & Respiratory system, & Exercise tolerance/ Ergometry.

Note: Group discussions, seminars and tutorial will be on the topics covered in didactic lectures.

Syllabus-

- 1. GENERAL PHYSIOLOGY** [02 hrs]
 1. Structure of cell and its functions
 2. Transport across cell membrane
 3. Body fluids- Homeostasis
- 2. BLOOD** [05 hrs]
 1. Composition, function and physical properties of blood
 2. Plasma protein and their functions
 3. Erythropoiesis, leucopoiesis and thrombopoiesis in brief
 4. Hemoglobin and its functions
 5. Structure and function of leukocytes
 6. Immunity
 7. Physiology of clotting mechanism and fibrinolysis
 8. Blood group and physiological basis of transfusion
- 3. NERVE** [05 hrs]
 1. Structure, classification & properties.
 2. R.M.P.
 3. Action potential
 4. Propagation of nerve impulse.
 5. Degeneration & regeneration
 6. Reaction of degeneration [retrograde]

- 4. MUSCLE** [08 hrs]
1. Structure, properties, classification, excitation/contraction coupling
 2. Motor unit- Electromyography
 3. Neuro-muscular transmission
 4. Physiological basis of myopathies.
- 5. NERVOUS SYSTEM** [20 hrs]
1. Organization of Nervous system.
 2. Neuron and Neuralgia
 3. Synapse: Properties and Synaptic transmission.
 4. Reflex arc, its components, properties, type and neurological impairments.
 5. General sensations and their properties.
 6. Ascending tracts of the Spinal cord and effects of their lesions.
 7. Pain and physiological Analgesia.
 8. Motor neurons, Descending tracts and their applied aspects.
 9. Regulation of Muscle Tone by Spinal and Supra-spinal mechanism.
 10. Function of Brain -stem, Cerebellum, Basal Ganglia and Motor cortex.
 11. Control of Voluntary movement
 12. Regulation of posture and equilibrium, vestibular apparatus.
 13. Broad functions of Thalamus, Hypothalamus, Major lobes of Cerebral cortex and Ascending Reticular Activation System
 14. Limbic System
 15. Learning, memory, speech and conditional reflexes.
- 6. SPECIAL SENSES** [05 hrs]
1. Functional anatomy of the Eye
 2. Optics of Vision
 3. Retinal Function
 4. Visual Pathways
 5. Mechanism of Hearing.
 6. Sensation of Taste and Smell.
- 7. AUTONOMIC NERVOUS SYSTEM** [02 hrs]
1. Functioning of Autonomic Nervous System with special reference to micturition, defecation and labour
 2. Higher neural regulation of ANS.
- 8. SKIN AND BODY TEMPERATURE REGULATION** [03 hrs]
1. Functional anatomy of the Skin and its function
 2. Different mechanisms involved in body temperature regulation.
 3. Physiological basis of Pyrexia and Hypothermia.

9. CARDIOVASCULAR SYSTEM

[12 hrs]

1. General introduction of cardiovascular systems.
2. Structure and properties of Cardiac muscle.
3. Cardiac cycle and Heart sounds.
4. Interpretation of normal Electrocardiogram.
5. Cardiac output and cardiac failure.
6. Venous return,
7. Heart rate and its regulation.
8. Structure and organization of vascular tree.
9. Arterial blood pressure and pathophysiology of Hypertension.
10. Characteristic of Coronary circulation and pathophysiology of Coronary artery disease
11. Capillary circulation and physiological basis of Edema.
12. Patho-physiology of Shock.

10. RESPIRATORY SYSTEM

[10 hrs]

1. Functional anatomy of Respiratory System.
2. Mechanics of breathing: Mechanism of inspiration and Expiration, intra-pleural and intra-alveolar pressures, Compliance, Surfactant, Air-way resistance and work of breathing.
3. Respiratory membrane and diffusion of gases.
4. Composition of gases and Partial pressures.
5. Oxygen and Carbon-dioxide transport.
6. Lung Volumes, Capacities and Lung function tests.
7. Nervous and Chemical control of breathing.
8. Physio-clinical aspects of Dyspnoea, Apnoea, Asphyxia, Hypoxia, Cyanosis, Breath holding, high and Low atmospheric pressures.

11. DIGESTIVE SYSTEM.

[05 hrs]

1. Functions of (a) Saliva, (b) Gastric juice, (c) Pancreatic juice (d) Succus entericus, (e) Bile.
2. Movements of G.I.T.
3. Functions of Liver.

12. RENAL SYSTEM

[05 hrs]

1. Functions of Kidney
2. Formation of Urine.
3. Physiology of Micturition- Neurogenic bladder.

13. ENDOCRINE

[05 hrs]

1. Role of Hypothalamus as an endocrine gland.
2. Functions and hypo & hyper secretion of hormones of
 - a. Pituitary

- b. Thyroid
- c. Parathyroid
- d. Adrenal
- e. Endocrine part of pancreas.

14. REPRODUCTIVE SYSTEM

[05 hrs]

1. Spermatogenesis, Functions of Testosterone.
2. Ovarian and Menstrual Cycle and their hormonal control.
3. Hormones of Ovary and their functions.
4. Physiological basis of Fertilization, Implantation, Pregnancy, Parturition and Lactation.
5. Contraception.

15. EXERCISE PHYSIOLOGY

[08 hrs]

1. Effects of acute & chronic exercises
2. Oxygen/CO₂ transport – O₂ debt.
3. Effects of Exercises on muscle strength, power, endurance, B.M.R., R.Q.- hormonal & metabolic effects- respiratory & cardiac conditioning.
4. Aging.
5. Training, fatigue & recovery.
6. Fitness- related to age, gender, & body type.

Note:- For Section – A The long question should be asked form the topic 3,4,5, and short notes can be form any other topic.

For Section – B The long question should be asked form the topic 9,10,15 and short notes can be form any other topic.

Text Books

1. Textbook of physiology- vol. I & II – A.K. Jain.
2. Medical physiology – R.L. Bijlani.
3. Concise medical physiology – S. Choudhari.

Reference Books

1. Textbook on medical physiology – Guyton & Hall.
2. Review of medical physiology – Ganong.

Practical

1. Hematology –[Demonstration only]

2. Study of Graphs

a. Skeletal muscles-

- i. Simple muscle twitch
- ii. Effect of increasing strength on SMT.
- iii. Effect of increasing load on SMT.
- iv. Effect of pre load & after load (Starling's law).
- v. Effect of temperature.
- vi. Effect of two successive stimuli.
- vii. Effect of fatigue.
- viii. Effect of multiple stimuli & tetanus.

b. Cardiac muscles-

- i. Simple myo-cardiogram.
- ii. Effect of temperature on the myo-cardiogram.
- iii. Effect of drugs.
- iv. All or none law.
- v. Staircase phenomenon.

3. Physiology Fitness

- Breath holding
 - mercury column test,
 - cardiac efficiency test – Harvard step test – Master step test
1. Recording of arterial blood pressure – effects of change in posture & exercise on A.B.P.
 2. Stethography
 - i. Effect of deglutition.
 - ii. Effect of voluntary hyperventilation
 - iii. Effect of exercise.
 3. Spirometry
 - Lung volumes and capacities.
 4. Mosso's finger ergography and bicycle ergography
 5. Perimetry
 6. Clinical examination of
 - Respiratory system.
 - Cardiovascular system.
 - Central Nervous system.
 - Special senses.

Section - B [35marks]

BIOCHEMISTRY [60 hrs]

Course Objective

After 60 hours lecture and demonstration in Biochemistry this course shall provide the student with basic Biochemistry knowledge with special emphasis on clinical understanding of biochemistry processes. Students shall be able to relate these processes with underlying mechanism of physiotherapeutics.

I. Basic Biophysics: [06 hrs]

Concept of Acid base, buffer, Henderson- Hasselbach equation, brief knowledge of biophysical process such as Osmosis. Viscosity, Surface tension, Dialysis with special emphasis on their biomedical implication. A brief study of Radio-isotopes and their clinical applications

II. General Biochemistry with Biomedical functions

1. Carbohydrates: Definition, Classification with example and General functions. [03 hrs]
2. Lipids: Definition Classification and General Functions. Essential Fatty Acids, Cholesterol, blood lipids, Brief review of Lipoproteins. [03 hrs]
3. Proteins: Definition, Classification and Biomedical importance, Study of Hemoglobin and Immunoglobins with function, plasma and Functions. [06 hrs]
4. Nucleic Acids: Brief overview of the structure of RNA and DNA including Nucleosides and Nucleotides. Study of few biologically important nucleotides. [03 hrs]
5. Enzymes: Definition, Classification with example, Factors affecting enzyme action, brief study of enzyme inhibition, clinical importance of enzymes. [05 hrs]
6. Vitamins: Definition, Classification and function. Dietary source, Daily requirements and Deficiency Disorders. [07 hrs]

III. Bioenergetics [04 hrs]

Study of Plasma Membrane, Review of laws of thermodynamics as applicable to biological systems. Concept of free energy charge. High-energy compounds and Respiratory chain.

IV. General Metabolism

(Note: A brief outline of metabolic pathway herein is indicated. Details and Structure are to be avoided).

7. Carbohydrate metabolism: Glycolysis, TCA, Glycogen metabolism, blood sugar regulation, Diabetes and Diabetic Ketoacidosis. [06 hrs]
8. Lipids Metabolism: Beta-oxidation of Fatty acids, Fatty acid synthesis, cholesterol synthesis, Ketosis and Fatty liver. [06 hrs]

9. Protein Metabolism: General reaction of Amino acids, Formation and fate of Ammonia, Urea cycle. [04 hrs]
10. Purine and Pyrimidine: Only catabolism of Purine to be Stressed in detail with special emphasis on Gout. General breakdown of Pyrimidine and associated disorders. [03 hrs]

V. Water and Electrolyte Balance [02 hrs]

General outline of fluid compartments of the body with their water and electrolyte content and balance, Dehydration.

VI. Nutrition [02 hrs]

Basic principal of Nutrition of carbohydrates, Protein and lipids. Caloric requirement and Balance diet.

Book References

1. Textbook of Biochemistry by West and Todd.
2. Textbook of Medical Biochemistry by Chatterjee and Shinde
3. Principles of Biochemistry by A. Lehninger.
4. Textbook of Biochemistry by A.C. Deb

PAPER - III

PATHOLOGY & PHARMACOLOGY INCLUDING BACTERIOLOGY

Total hrs: 100 hrs

Section - A - [40 marks]

PATHOLOGY & BACTERIOLOGY [60hrs]

Theory: 52 Hrs.

Practical Demonstration 8 Hrs.

Theory

1. Concept of Diseases, Classification of Lesions. [01 hrs]
2. Clean & Brief concepts of inflammation and Repair, Degeneration, Necrosis and Gangrenes. [04 hrs]
3. Deficiency Diseases vitamin A, vitamin B, vitamin C, vitamin D. [04 hrs]
4. Vascular disturbances: Oedema, Thrombosis, Embolism, Hemorrhage and Shock. [04 hrs]
5. In brief: About Anemia, Leukemia, Hemorrhagic disorders. [05 hrs]
6. Clear Concepts about Tumors, Definition, Classification, Etiology and spread of tumors, Benign versus Malignant tumors. [03 hrs]
7. In brief about:
 - A. Respiratory diseases- Pneumonia, Bronchitis, Asthma, Emphysema, Tuberculosis, Lung cancers and Occupational Lung diseases. [04 hrs]
 - B. C.V.S. – Rheumatic heart disease, myocardial infarction, Atherosclerosis, congenital heart disease. [04 hrs]
 - C. Alimentary system – Peptic ulcer, Carcinoma of stomach [02 hrs]

Ulcerative lesions of Intestine.

- (d) Liver – Hepatitis, Cirrhosis and Hepatoma. [03 hrs]
- (e) Pancreas – Pancreatitis, Carcinoma of Pancreas, Diabetes. [01 hrs]

Details about:

Central nervous system – Meningitis and Encephalitis, brief outline of C.N.S. Tumours and peripheral nerve lesions. [04 hrs]

Bones and Joints – Osteo myelities, Osteoarthritis, Septic, Arthritis, Gout, Rheumatic Arthritis and Bone Tumors. [04 hrs]

Muscle – Poliomyelitis, Myopathies, Volkman’s ischemic contracture. [02 hrs]

Skin – Scleroderma, Psoriasis, Autoimmune disorders. [01 hrs]

In brief about

(a) Urinary system – Nephrotic syndrome, Nephritis, Glomerulonephritis. [03 hrs]

(b) Prostate –Prostatitis, BPH, Carcinoma of Prostate. [01 hrs]

(c) Endocrine – Thyroid, Thyroiditis, Thyroid Tumours. [01 hrs]

(d) Salivary gland – Salivary gland tumours. [01 hrs]

Note: Questions shall be from the theory part only

Practical [08 hrs]

1. Normal total and differential WBC count, Hemoglobin, RBC.

Demonstration of slides:

- Anemia
- Leukemia
- Acute inflammation – Appendix
- Chronic inflammation – Non – specific.
- Tuberculosis of lymph Node – specific inflammation.
- Leprosy – Skin and Leprabacilli.
- Squamous cell carcinoma – skin.
- Osteogenic sarcoma – Bone tumor.
- Osteoclastoma – Bone tumor.
- Ewings – Bone tumour.
- Multiple Myeloma – Bone tumor.

Section - B [40hrs][35 marks]

PHARMACOLOGY

I. General Pharmacology

1. Definition of drug, Pharmacokinetics and Pharmacodynamics. [02 hrs]
2. Broad categories of adverse drug reactions. [02 hrs]
2. Alcohols. [02 hrs]
3. Analgesics and Antipyretics, anti-inflammatory drugs. [02 hrs]
4. Sedatives. [02 hrs]
5. Stimulants. [02 hrs]
6. Drugs acting on muscles- Muscle relaxants, Muscle stimulants. [02 hrs]
7. Anti-parkinsonism agents [02 hrs]
8. Drugs modifying B.P. [02 hrs]
9. Hypolipidemia. [01 hrs]
11. Anticoagulants. [01 hrs]
12. Thyroxin and Anti thyroid drugs. [02 hrs]
13. Anti-diabetics. [02 hrs]
14. Glucocorticoids. [02 hrs]
15. Calcium, Phosphorus, Calcitonin and Parathormone. [01 hrs]
16. Narrow spectrum antibiotics. [02 hrs]
17. Broad-spectrum antibiotics. [02 hrs]
18. Anti-cancer drugs. [01 hrs]
19. Drugs acting on respiratory systems: Respiratory stimulants and respiratory depressants, Bronchodilators, Expectorants. Anti-Asthmatics, Anti-tussive. [02 hrs]
20. Vitamins. [02 hrs]
21. Ovarian hormones, Anabolic steroids, Estrogen, Progesterone, Androgen. [02 hrs]
22. Locally acting drugs: Anodynes, Local anesthetic drugs, Counter-irritants Rubefacient, Soothing agent, Anti-microbial. [02 hrs]

Book Reference.

1. Pharmacology by Satoskar
2. Clinical Pharmacology by Lawrence.
3. Textbook of Pharmacology by B.N. Ghose.
4. Essentials of medical Pharmacology by K.D. Tripathi.

PAPER-IV

PSYCHOLOGY

Theory: 80 hrs

Section - A [40hrs] [40 marks]

A. GENERAL PSYCHOLOGY:

1. Definition and concept of psychology; Field of application and methods of study of psychology. [02 hrs]
2. The respective influences of heredity and environment on the individual. [02 hrs]
3. Development and growth of behaviour in infancy and childhood. [02 hrs]
4. Motivation: Achievement, affiliation and aggression Maslow's theory. [02 hrs]
5. Emotions and emotional development. [02 hrs]
6. Learning theories, methods of learning (Pavlov, Thorndike, Hull- Tolman) [05 hrs]
7. Learning and maturation – special reference to conditioning positive and negative reinforcement interest and in learning. [03 hrs]
8. Sensation, perception. [04 hrs]
9. Memory, thinking and causes of forgetting. [04 hrs]
10. Attention and concentration [04 hrs]

B. SOCIAL PSYCHOLOGY

11. Nature and scope of social psychology. [10 hrs]
 1. Social interaction- primary and social stimulation.
 2. Psychology groups and their classification.
 3. Socialization of the individual.
 4. Morals, customs, fashions, propaganda – its technique.
 5. Leadership – Functions, Role and Qualities.
 6. Attitudes and prejudices.
 7. Crowds and Public opinion.
 8. Social changes and progress.

Section - B [35 marks]

C. CLINICAL PSYCHOLOGY [40hrs]

1. Introduction: Field of application and short history of clinical psychology. [03 hrs]
2. Concept of mind: Conscious and unconscious mind (psychological approach). [02 hrs]
3. Intelligence and intelligence testing, kinds of mental deficiency. [05 hrs]
4. Personality: Concept, influencing factors and tests. [05 hrs]
5. Major psychological disorders: Psychoneurosis [05 hrs]
 - a. Anxiety
 - b. Phobia
 - c. Obsessive-compulsive reaction.
6. Major psychological disorders: Psychosis [05 hrs]
 - a. Schizophrenia
 - b. Depression
7. Psychosomatic disorders, personality disorders [04 hrs]
8. Frustration and conflict. [03 hrs]
9. Stress: Coping mental mechanism with special reference to normal and abnormal conditions. [03 hrs]
10. Counseling: Process, approaches. [05 hrs]
 - a. Directive
 - b. Non-directives
 - c. Counseling skills.

Book Reference

1. Introduction to Psychology -N.L. Munn
2. Psychological Testing - A. Anastasi
3. Abnormal Psychology & Modern Life -J.C. Coleman
4. Social Psychology-A Practical manual –Brakewell
5. Clinical Psychology by Koleman.

PAPER-V

PRINCIPLES OF OCCUPATIONAL THERAPY

THEORY 160hrs

Practical: 140 hrs

Section A [80 hrs] [40 marks]

- I. Introduction to Occupational Therapy [20 hrs]
- History and development of Occupational Therapy in India and worldwide
- Definition, philosophy and scope of Occupational Therapy.
- Occupational performance model
- II. Definition of health rehabilitation team and role of occupational therapy as a team member. [5 hrs]
- III) Principles of Therapeutic Exercise : [20 hrs]
- a) Generalized & specific principles
 - b) Types of Movements, Muscle contraction used in exercise
 - c) Exercise classification & application to activity
 - d) Patho physiology of exercise & coordination
 - 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)
- IV) Theory of Occupation - [20 hrs]
- Forms of occupation, occupation as evolutionary trait, Biological dimensions, Social dimensions, Psychological dimensions of occupation, Application of theory to occupational Therapy
- V) Proprioceptive Neuro-muscular facilitation – Basic principles. [5 hrs]
- VI) Principles and methods of assessment [10 hrs]
- i) ROM
 - ii) Muscle Power

Section - B [80 hrs] [35 marks]

V) Activities as a basis of Occupational Therapy

- a) Therapeutic Activities – Definition, Classification, Characteristics and scope. [5 hrs]
- b) Activity Analysis: [20 hrs]
- a) Principles of activity analysis
 - b) Biomechanical & sensory motor
 - c) Adapting & grading activity
 - d) Selection of activity
- c) Activities classification. [20 hrs]

Physically and intellectually remedial activities – strengthening, joint range improvement, co-ordination, educational, memory training, perceptual motor training activities.

Prevocational and vocational activities.

Crafts and games and adaptations.

Carpentry, tailoring, book binding, leather work, driving activities

iii) Recreation activities - Group & Individual

VI) Activities of daily living –definition, classification, characteristics and evaluation.

[15 hrs]

VII. Basic human growth and development process

[10 hrs]

- a) Principles of Growth, Development and Maturation.
- b) Factors effecting growth & development
- c) Reflex Maturation
- d) Hand function development

IX. Introduction to Splinting: Definition, Classification, principles, material used in designing & fabrication

[10 hrs]

PRACTICALS

- a) Practical demonstration of Assessment and Recording of muscle testing.
- b) Practical demonstration of measurement and recording of joint measurements (Arthrometry).
- c) Practical demonstration measurement of co-ordination.
- e) Practical demonstration of activities of daily living testing.
- f) Practical demonstration of different activities leading to strength building, elasticity developing co-ordination improvement.

Book References

- 1) Muscle Testing & function by F.P. Kendall
- 2) Occupational Therapy for Physical Dysfunction by C.A. Trombly
- 3) Measurement of joint motion: a guide to goniometry by C.C. Norkin & D.J.White
- 4) Willared & 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 Therapy by Dena Gardiner
- 8) Therapeutic Exercises by J. Basmajian & Wolf
- 9) Daniel's & Worthingham's Muscle testing.

Syllabus for Bachelor of Occupational Therapy PART – II

The part-II Examination shall consist of the following subjects (Teaching hour approximately for lectures to be delivered and practical classes to be held in each subject indicated against each subject.

No	SUBJECT	LECTURES	PRACTICAL
1.	Medicine including Neurology	100	50
2.	Surgery including Orthopaedics	100	50
3.	Biomechanics & Kinesiology	100	30
4.	Occupational Therapy in Medical Condition Part-I	100	120
5.	Occupational Therapy in Surgical Condition Part-I	100	120
6.	Applied Psychology including psychiatry	100	50
7	Occupational Therapy Clinical	--	800

Scheme of Examination for BOT 2nd year

The full-marks for each subject and the minimum marks required for passing the shall be as follows.

No	Subject	Written	Int. Asstt.	Min Marks (Wrt. + Int Asstt.)	Practical	Int. Asstt.	Min Marks (Pract + Int. Asstt.)	Total Marks
1	Medicine including Neurology	75	25	50	50	-	25	150
2	Surgery including Orthopaedics	75	25	50	50	-	25	150
3	Biomechanics & Kinesiology	75	25	50	-	--	-	100
4	Occupational Therapy in Medical Condition Part-I	75	25	50	75	25	50	200
5	Occupational Therapy in Surgical Condition Part-I	75	25	50	75	25	50	200
6	Applied Psychology including psychiatry	75	25	50	-	-	-	100

The pattern of University theory examination will be as under for 75 Max. Marks.

No. & Type of Question	Marks for each question	Total Max. Marks
08 Very Short Answer Questions (<i>Answer to be given in 50-60 words</i>)	02	16
4 Short Answer Questions (<i>Answer to be given in 250-300 words</i>)	08	32
2 Essay Type Questions (<i>Answer to be given in 450-500 words</i>)	13.5	27
		75

PAPER-I

MEDICINE INCLUDING NEUROLOGY

Theory : 100 Hrs

Practical : 50 Hrs.

Section – A [50 hrs] [40 marks]

Medicine + Dermatology + Geriatrics

Under this the students should be taught various medical conditions and disease on the following headings: -

I. Definition

II. Etiology

III. Signs & Symptoms

IV. Pathology

V. Investigations

Vi. Differential Diagnosis

VII. Management.

General Medicine

A. Infections

[05 hrs]

Outline briefly the Etiology, symptoms and brief management of the following disease.

Bacterial – Tetanus, Typhoid.

Viral – Herpes simplex, Herpes Zoster, Measles, Hepatitis –B. and HIV.

Protozal – Filariasis, Malaria, Amoebiasis.

B. Diseases of blood.

[07 hrs]

Define and describe clinical aspects of Nutritional Anaemias.

Brief description of Bleeding Disorder with emphasis to Haemophilia.

Lymphadenopathy and splenomegaly.

Leukaemia – acute and chronic.

C. Diseases of Liver

[03 hrs]

Jaundice

Viral Hepatitis.

Cirrhosis of Liver

D. GIT Diseases

[02 hrs]

Brief description

1. Peptic Ulcer

2.Diarrhea and Dysentery.

E. Renal Diseases

[04 hrs]

Brief description of acute and Chronic renal Failure.

Urinary Tract Infection.

Acute Nephritis, Nephrotic Syndrome.

F. Nutritional and Metabolic Disease.

[05 hrs]

1. Balanced normal diet.

2. Protein Calorie Malnutrition

3. Avitaminosis of both water and fat-soluble vitamins.

Diabetes mellitus – Definition, Classification and complications, brief description of management of diabetes mellitus.

Obesity – Etiology and management.

Hyper and Hypo-thyroidism.

Calcium Homeostasis.

Gigantism and Acromegaly.

G. Diseases of Bones, Joints and Connective tissue

[07 hrs]

1. Brief introduction to understanding of Auto immune diseases.

2. Rheumatic fever and Rheumatoid arthritis – Aetio pathogenesis, Clinical features, complications, diagnosis and briefly outline the management.

3. Brief description of Systemic Lupus Erythematosus.

4. Polyarteritis Nodosa, Dermatomyositis, Scleroderma.

5. Osteoarthritis – Aetiopathogenesis, clinical feature, diagnosis, complication and management.

H. Genetics and Diseases

[03 hrs]

1. Common inherited disorders.

2. Prevention of genetic disorders.

I. Miscellaneous

[01 hrs]

1. Allergy & Drug reactions.

J. Dermatology

[06 hrs]

Common skin infections.

Psoriasis

Leprosy- aetio pathogenesis, clinical features and treatment.

Venereal diseases – Syphilis, HIV etc., brief description and prevention (lecture demonstration only).

K. Geriatrics

[05 hrs]

Common Geriatric Disorders and their management

L. Radiology

[02 hrs]

(Both in normal and Pathological conditions).

Radiology of Bone and joints.

Radiology of chest including Heart.

Note:- The long questions should be asked from the topic A,B,F,G, and short notes can be asked from any other topics

Practical:-

Students shall be posted for one month in general Medicine ward. They shall do clinical checking and ward work to acquaint themselves to General Medicine.

Book References:-

1. Davidson Principles and Practice of Medicine (Churchill Livingstone)
2. Medicine and Neurology by Davidson.
3. Medicine by Golwala.

Section – B [50 hrs] [35 marks]

Neurology + Pediatrics

NEUROLOGY

- 1. Motor and sensory:-** Basic Neurophysiology, functional anatomy, tracts, pyramidal and extra pyramidal/cerebellar systems of brain and spinal cord/nerves [03 hrs]
- b. Reflexes:-** Physiology of reflexes, genesis of spasticity, rigidity, postural reflex [02 hrs]
- c. Bladder and Bowel Control:-** Innervations, anatomy, physiology, pathology [01 hrs]
- d. Principle of Clinical Examination:-** Diagnosis, Differential diagnosis and Prognosis of Neurological disorders, history taking/over view from perspective of clinical examination. [02 hrs]
- e. Cerebral Palsy:-** Etiopathology, clinical features, types, management [02 hrs]
- f. Stroke:-** Etiopathology, clinical features pertaining to artery involved , types, management [04 hrs]
- g. Neuro-infections: -** Meningitis, Encephalitis, Poliomyelitis [02 hrs]
- h. Movement disorders:-** Parkinsonism, Dystonia, Chorea, Tremors And Writer's Cramps, Cerebellar Ataxia, Friedreich's Ataxia [04 hrs]
- i. Motor Neuron Disease:-** classification, clinical features, types, amyotrophic lateral sclerosis [02 hrs]
- j. Dementia** [01 hrs]
- k. Diseases of Spinal Cord -** Non-compressive myelopathies [03 hrs]
- l. Demyelinating disease:-** multiple sclerosis [01 hrs]
- m. Peripheral Neuropathies : -** Diabetic neuropathies, Entrapment neuropathies, AIDP, CIDP [04 hrs]
- n. Muscle Disorders :-** Dystrophies:- (classification clinical features. Beckers muscular dystrophy, duchennes muscular dystrophy), polymyositis, myasthenia gravis, overview of other muscle disorders like channelopathies, cramps. [04 hrs]

Explain normal process of growth and immunization schedule, importance of breastfeeding, NICU, developmental assessment, birth injuries, nutritional deficiency, genetic anomalies and their management. Describe congenital neuro-muscular, musculo-skeletal, & cardio- pulmonary conditions, infectious diseases, & genetically transmitted conditions.

Practical

Students shall be posted in Neurology units. They shall do clinical checking and ward work to acquaint themselves to neurological and pediatric conditions

Clinical assessment of neurological function to be taught through bedside or demonstration in clinics, of the following:

- Basic history taking to determine whether the brain, spinal cord or peripheral nerve is involved.
- Assessment of higher mental function such as Orientation, Memory, Attention, Speech and Language.

Assessment of Cranial nerves.

Assessment of Motor system.

Assessment of Sensory function, Touch, Pain and Position.

Assessment of Tone-Spasticity, Rigidity and Hypotonia.

Assessment of Cerebral function.

Assessment of Higher cortical function - Apraxia.

Assessment of Gait Abnormalities

Developmental assessment

Book References

Davidson's Principles and Practice of Medicine

Brains Clinical Neurology.

Medicine and Neurology by Golwala.

Surgery by Nan.

Baily & Love's - Short Practice of Surgery.

Essentials of Paediatrics by O.P. Ghai

The development of the infant and Young child by Illingworth

PAPER- II

SURGERY INCLUDING ORTHOPAEDICS

Theory : 100 Hrs

Practical : 50 Hrs.

Section A. [50hrs] [40 marks]

I. General Surgery

1.Introduction: Description of events frequently accompanying general Anesthesia, Blood transfusion and physiological response of the body. [02 hrs]

2.Wounds, scars, ulcers, boils, carbuncles. [02 hrs]

3.Principles of pre- and post –operative physical examination, investigations, postoperative complications and their management. [02 hrs]

4.Abdominal surgery: Incisions, complications and management of following: [08 hrs]
Nephrectomy, Appendectomy, Herniorrhaphy, Mastectomy, Thyroidectomy, Colostomy, Adrenalectomy, Cystectomy, Hysterectomy, Prostatectomy, Cholecystectomy, Ileostomy, Incisional hernia and its prevention.

5.Burns: Causes, Classification, Medical management and precautions in the acute stage, complications of burns and their management. [04 hrs]

II .Plastic Surgery: [07 hrs]

- a. Principles of plastic surgery, post – operative management and complications.
- b. Cineplasty.
- c. Principles of cosmetic surgery.
- d. Skin grafting.
- e. Surgery of Hand with emphasis on management of traumatic & leprosy hand.
- f. Burns and plastic surgery management.

III. Ophthalmology: [05 hrs]

Etiology, symptomatology and treatment of visual defects emphasis on Errors of Refraction, Squint, Conjunctivitis, Trachoma, Corneal ulcers, Iritis, Cataract, Retinitis, Detachment of retina and Glaucoma (lecture demonstration only)

IV. E.N.T.:-

(05 Hrs.)

Etiology, symptoms and treatment of sinusitis, Rhinitis, Acute and Chronic Otitis, Otosclerosis, Mastoidectomy and loss of hearing.

V. Cardiothoracic Surgery

[10 hrs]

Incisions for cardiothoracic surgery General pre and post operative management of cardiothoracic surgery- various surgical procedure for various chest and cardiac condition/ diseases.

VI. OBS. and GYN.

[05 hrs]

Pregnancy – stage of pregnancy- Labour – Stages of Labour- Deliver. Common gynecological problems.

Book References

1. Surgery by Nan.
2. Surgery by Baily & Love –
3. Short Practice of Surgery by Rain & Ritelife.
4. Gynaecology and Obstetrics in the Health care of a Woman by Seymoul L. Romney, Mary Jane Gray, J. A. Merrill.
5. Shaw's Textbook of Gynecology.
6. Jeffcoat's Principles of Gynecology.
7. General Surgical Operations by R.M. Kirk and R.C.N. Williamson.

Section B. [50hrs] [35 marks]

1. **Introduction to Orthopedics:** Terminology, types of common etiology, clinical examination, Common investigation, Outline of management – Operative & Non-Operative. Orthopedic conditions
2. **Principles of operative Managements:** Osteotomy, Arthrodesis, Spinal Stabilization, Tendon operations, External fixation, Arthroscopy, total joint replacements, limb re-attachments.
3. **Sprain and Strains:** Common sites of sprains and muscle strains, their clinical manifestations and treatment.
4. **Fractures and Dislocations:** Briefly mention Types of fracture and dislocations, symptoms and signs of above injuries and their Principles of management and Complications.
5. **Prevention and treatment of common complications:** Fracture disease, Volkmans ischaemic contracture, Sudeck's osteo dystrophy, Myositis ossificans, Ligament injuries, Shoulder- hand syndrome etc.
6. **Spinal column:** fractures, management and complications of Spinal injures spinal deformities like Scoliosis, Kyphosis, and Lordosis etc.
7. Injuries of upper limb and lower limb, enumerate major fracture and joint injuries, brief description of principle of management and complications.
8. **Amputations:** Classification, indications, pre-operative, operative and post-operative management.
9. **Arthritis:** Outline of Pathology, clinical features, management, complications of Rheumatoid arthritis, osteo- arthritis and Ankylosing spondylitis.
10. **Bone and Joint infections:** Etiology, clinical feature, management and complications of Septic arthritis, Osteomyelitis, Tuberculosis and leprosy.
11. **Congenital anomalies and other deformities:** C.D.H, CTEV, Scoliosis etc.(Salient features only).
12. **Bone and Joint Tumors:** Classification, clinical features and management of Osteoma, Osteosarcoma, Osteoclastoma, Ewings tumor, Multiple myeloma and Secondaries.
13. **Low backache:** Causes, management.
14. Frozen shoulder and other painful conditions of shoulder, Painful heel conditions, Tendinitis and Fasciitis.
15. Poliomyelitis: common deformities due to PPRP and their management.
16. **Miscellaneous condition:** Spondylitis, Prolapse inter-Vertbral disc, Tennis elbow. Carpal tunnel syndrome, Spondylolisthesis etc.

Practical

Students do clinical checking, ward work, hospital posting for a period of one month to acquaint themselves with traumatology and orthopedic conditions.

Book References

- Outline of fracture by Adams.
- Outline of Orthopedics by Adams.
- Orthopedics and Traumatology by Natarajan.
- Aplay's Orthopedics.

PAPER – III

BIO-MECHANICS & KINESIOLOGY

Theory: 100 Hrs.

Practical 30 Hrs.

Section –A [50 hrs] [40 marks]

- 1) General concepts of biomechanics : [05 hrs]
a) Essential terms & 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 & 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 : Types of motion – linear / translator, rotatory / angular, curvilinear, general plane motion. Application of kinematics in human body – open & close kinematics chain motion [05 hrs]
- 4) Biomechanics of upper extremity joints : [25 hrs]
Shoulder, elbow, radio-ulnar, wrist, hand with special emphasis on particular surfaces, joint capsule, type of joint, muscles and ligaments surrounding the joint, their action & functions, forces applied, movements occurring, relationship of joints to other joints.

Section –B [50 hrs] [35 marks]

5) Biomechanics of lower extremity joints [25 hrs]

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

- a) Hip – Varus & valgus of femoral neck, forces acting during single & double leg stance, factors affecting, effect of use of cane on hip joint forces.
- b) Knee & patellar-femoral – Stability & mobility with respect to locking and unlocking of joint.
- c) Ankle & sub-talar joints – Stability achieved, arches of foot, weight bearing on foot.

6) **Gait :** [10 hrs]

Normal human gait cycle (walking), its parameters, myokinetics & kinematics, stair gait, running. Common gait deviations. Types of crutch & cane, crutch & cane gaits. preparatory exercises for crutch cane walking.

7) **Posture :** [05 hrs]

Anatomical aspects of posture, factors affecting posture. Normal & abnormal curvatures of spine, exercises for spine.

8) Vicarious movements: types with examples, in various nerve injuries [05 hrs]

9) Range of motion testing: Principles in clinical conditions – indications and contraindications, visual observations [02 hrs]

10) Muscle strength – individual muscle testing: Principles in clinical conditions. [03 hrs]

PRACTICALS:

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

BOOKS RECOMMENDED

- 1. Joint Structure and Function – A Comprehensive Analysis by C.C. Northing, P.K. Levangie,
- 2. Physiology of joint & joint motion by Kapanji I. A.
- 3. Therapeutic exercise by J. Basmajian
- 4. Biomechanics of human motion by William Listner
- 5. Measurement of joint motion : a guide to goniometry by C.C. Norkin & D.J. White
- 6. Therapeutic exercise – Foundations and Techniques – C. Kisner . L. A. & Colby
- 7. Muscle testing and function by F.P. Kendall
- 8. Daniel’s & Worthingham’s Muscle testing.

PAPER – IV

OCCUPATIONAL THERAPY IN MEDICAL CONDITIONS PART – I

Theory: 100 Hrs.

Practical: 120 hrs.

Section – A [60 hrs] [40 marks]

1. Introduction: Brief review of medical conditions and treatment and role of occupational therapy in the rehabilitation of paring with various diseases. [02 hrs]
2. Therapeutic activities and techniques in Occupational Therapy. [02 hrs]
 1. Methods of evaluation in Occupational Therapy. [02 hrs]
 2. Aims and principles of Occupational Therapy. [02 hrs]
 3. Developmental aspects of childhood. [06 hrs]
 - a. Physical, emotional intellectual and social development of the child.
 - b. Guide for developmental testing
 - c. Average developmental achievement.
 - i. From birth to 5 years of age.
 - ii. From 5 – 10 years of age.
4. Various neuro physiological approaches used for the occupational therapy management of medical conditions including: [20 hrs]
Roods approach, Neuro developmental approach, Brunnstrom movement therapy, PNF approach, Motor relearning approach
5. Clinical features, Occupational therapy assessment and goal setting for various medical conditions including
 - 1) Reumatiod Arthritis: [05 hrs]
Definition, O.T. treatment in R.A., pathomechanics of hand deformities, rehabilitation of R.A. in Acute stage, rehabilitation of R.A. in subacute stage, rehabilitation of R.A. in chronic stage joint protection techniques, work simplification techniques.
 - 2) Gerontology: [06 hrs]
Theories of ageing, ageing & disease, death & dying, O.T. treatment in gerontology
 - 3) Dermatology: [04 hrs]
Leprosy, O.T. in acute & chronic dermatological conditions with psychosocial implications.

4) HIV: [03 hrs]

Stages of infection, physical psychological & environmental consideration, O.T. assessment treatment.

5) **Pulmonary conditions:** [08 hrs]

Chronic bronchitis, bronchial asthma, emphysema, empyema, COPD, ILD, T.B., lung abscess occupational lung diseases, thoracic surgeries, related postural deviations and their corrections. Assessment-auscultation or air entry and secretions. Interpretation of pulmonary function test and their application in rehabilitation.

Therapeutic intervention-Assessment of functional performance capacity to perform occupational activities including work, leisure and self-care.

Assessment of motor performance-functional mobility, strength and endurance.

Activities to improve lung capacity using diaphragmatic and pursed lip breathing patterns.

Incorporation of correct breathing patterns in day-to-day living.

Energy conservation techniques and work assessment.

Development on pulmonary endurance & physical work capacity

Section – B [40 hrs] [35 marks]

Clinical features, Occupational therapy assessment, goal setting & neuro physiological approaches used for various medical conditions including

6) Cardiac conditions [12 hrs]

Intervention in acute, convalescent and late phases of cardiac illnesses such as ischaemic heart diseases, acute myocardial infarction, hypertension, cardiac myopathies, congenital and acquired heart diseases, valvular diseases, and following interventions like CABG, angioplasties, valve replacements.

Categorisation of cardiac patients on the basis of risk factors for exercise prescription.

Indications and contra-indications for mobilization, exercise training, work prescription, activity and sports participation.

Prescription of exercise, work and activity based on METS.

Exercise dose and mode.

Cardiac conditioning using treadmill, ergo metre, step-apparatus, walking, jogging protocols.

Interpretation of signs and symptoms during exercise training and work assessment. Effects of drugs on exercise performance. Modification of exercise, work and activity programmes with respect to residual cardiac function. Assessment on work simulation. Work simplification & energy conservation techniques based on ergonomic principles, their use & application.

- | | |
|--|----------|
| 7) Cerebral Vascular Accident | [10 hrs] |
| 8) Cerebral palsy, Mental retardation, Down Syndrome | [10 hrs] |
| 9) Haematological conditons | [06 hrs] |
| O.T. in Haemophilia | |
| 10) Obesity. | [02 hrs] |

PRACTICALS

Various techniques of occupational therapy for the above mentioned conditions/diseases should be demonstrated and practiced by the students.

Book References

- 1) Occupational Therapy – Willard & Spackman's
- 2) O.T. Practice Skills for Physical Dysfunction – Pedretti
- 3) O.T. in physical Dysfunction – Tromby & Scott
- 4) Therapeutic Exercise – Kisner
- 5) Therapeutic Exercise Basmajian
- 6) Rehab Medicine – Goodgold
- 7) Pulmonary rehabilitation, guidelines to success – Hodgkin T.E.
- 8) Physical rehabilitation, assessment, treatment – O'Sullivan.

PAPER – V

OCCUPATIONAL THERAPY IN SURGICAL CONDITIONS PARTY – I

Theory : 100 Hrs.

Practical : 120 Hrs.

Section – A [50 hrs] [40 marks]

1. Introduction Brief review of surgical conditions [05 hrs]
2. Methods of evaluation, various assessment techniques in occupational therapy for surgical conditions [10 hrs]
3. Clinical features, Occupational therapy assessment, goal setting & approaches used for various surgical conditions including
 - a) Burns: Definition, classification, stages of burns, O.T. in burns, pre-graft treatment, postgraft treatment, rehabilitation of burns. [10 hrs]
 - b) Amputation : Aetiology, surgical management, special consideration & problems, psychological adjustment, levels of amputation, accessories & component part of prosthesis, upper & lower extremity prosthetic training program for upper & lower extremity. [15 hrs]
 - c) Tendon Injuries: Aetiology, surgical Treatment, O.T. Treatment [10 hrs]

Section – B [50 hrs] [35 marks]

1. Clinical features, Occupational therapy assessment, goal setting & approaches used for various medical conditions including

- a) Crush injuries of hand, tendon & nerve injuries & their reconstruction, pre & post operative management in O.T. & splinting [10 hrs]
 - b) Cancer rehabilitation: Preventive, restorative, supportive and palliative aspects of radical mastectomy, head and neck cancer [07 hrs]
 - c) Vascular Conditions: Peripheral vascular diseases and O.T. [05 hrs]
 - d) Occupational Therapy in blind: Definition and Classification, mobility techniques, communication skills, sensory re-education, emotional and psychological aspects of blindness facilities for blind, prevention of blindness. [07 hrs]
 - e) Occupational Therapy in deaf, dumb, Definition and classification, communication skills, types and uses of hearing aids, emotional and psychological aspects, facilities for deaf, prevention of deafness, vestibular affectations and re-training. [07 hrs]
- 2) Supportive and corrective appliance in the rehabilitation [07 hrs]
- 3) Adaptive devices in the rehabilitations of surgical cases [07 hrs]

PRACTICALS

Various techniques of occupational therapy for above mentioned conditions/ diseases should be demonstrated and practiced by students

BOOKS RECOMMENDED

- 1) Occupational Therapy – Wilard & Spackman
- 2) O.T. Practice Skills for Physical Dysfunction – Pedretti
- 3) O.T. in Physical Dysfunction – Scott
- 4) Therapeutic Exercise – Basmajian
- 5) Rehab Medicine – Goodgold
- 6) Rehabilitation of Hand – Wynn & Parry
- 7) Hand – Hunter
- 8) Hand splinting – Fees
- 9) Therapeutic exercise – Kissner
- 10) Physical rehabilitation, assessment & treatment – Suzan O' Sullivan.

PAPER – VI

APPLIED PSYCHOLOGY INCLUDING PSYCHIATRY

Theory: 100 Hrs.

Practical: 50 hrs

THEORY

Section – A [50 hrs] [40 marks]

APPLIED PSYCHOLOGY

A. Developmental (Child) Psychology

[10 hrs]

1. Factors influencing development: Developmental periods - Prenatal Infancy, Babyhood, Childhood, Adolescence; Physical and Motor development; Development of Speech; Emotional and motor Development; Moral Development; Emotional and Social Development, Child's family relationship; Play
2. Problems in Emotional development – Nail biting. Lonely behavior, bed wetting, thumb sucking, Aggressive and harmful behavior; relationship of child – parent- Teacher.

B. Industrial Psychology

[10 hrs]

1. Efficiency in production: work – Curve, Factors affecting the work curve; Moral and rewards; way of measuring the effectiveness of psychosocial rewards.
2. Industrial and Highway Accidents : Causes of Accidents – Personal and Environmental ; Accident Prevention.

C. Experimental Psychology

[10 hrs]

1. Quantitative methods in Psycho Physios; Methods for measuring the Absolute threshold and for measuring Differential threshold; the method of Average Error.
2. Analysis of judgments: Expression of judgment verbal reports and inference from non-verbal behavior; Stimulus scales and scales; General Principles of judgments Reliability and validity of judgments
3. Transfer of learning; Types of transfer: Experimental Analysis of transfer, specificity of transfer; cross education (Bilateral transfer)

D. Mental Health and Therapy

[10 hrs]

1. Concept of Mental Health, Guidance and learning, parental attitudes affecting guidance – over protection, Rejection, some behavior problems jealousy and sex – problems; Sex education.
2. Treatment of mal-adjustments – Directive and Non- directive therapy, Group Psychotherapy and vocational guidance, Types of Physically handicapped children. Physically handicapped child in a mentally crippled child.

E. Rehabilitation Psychology

[10 hrs]

Interpersonal Relationships, familial and social relationships, acceptance about the disability – its outcome in relation to different diagnostic categories; Psychological aspects of multiple handicapped; contribution of psychology in Total Rehabilitation

Section – B [50 hrs] [35 marks]

PSYCHIATRY

- | | |
|--|----------|
| 1) Psychiatric history, mental status examination | [03 hrs] |
| 2) Classification of mental disorders | [02 hrs] |
| 3) Definition, clinical features, investigation, brief management of psychiatric conditions | [35 hrs] |
| Schizophrenic disorders (all types) brief, psychotic disorder, delusional disorder, schizoaffective disorder, post partum psychosis | |
| Mood disorders other affective disorders. | |
| Organic mental disorders, psychiatric aspects of aids. | |
| Anxiety disorders, phobia, obsessive compulsive, dissociative, conversion disorders | |
| hypochondriasis, post traumatic stress disorders. | |
| Personality disorders. Substance related disorders. | |
| Adjustment & impulse control disorders | |
| Psycho-sexual disorders. | |
| Psychological factors affecting medical conditions (psychosomatic disorders) | |
| Psychiatric emergencies – suicide | |
| Stress management | |
| Disorders of infancy, childhood & adolescence. | |
| Disruptive behavior disorders, conduct disorder. | |
| Attention deficit & hyperactivity disorder. | |
| Eating disorders, tic disorders elimination disorders. | |
| Affective disorders, child abuse, enuresis. | |
| 4) Treatment : ECT, chemotherapy, group therapy, psychotherapy, cognitive behavioural therapy, behaviour therapy, Stress management. | [10 hrs] |

PRACTICAL (List of Experiments)

I). Learning

- a). Serial position effects under massed and distributed practice.
- b). Speed of Learning for different amounts of material
- C). A study of Learning vision- motor co-ordination (Mirror- Drawing)
- d). A study of Habit Formation and Reversal (Card Sorting)
- e). Relation of speed and Accuracy.
- f). Study of the process of committing to memory non sense material (See –Saw Figures)

II). Psycho-Physics

- a). Measuring the differential threshold (Lifted weight)
- b). Mapping Coetaneous sense spots.
- c). Determining Spatial threshold or Aesthesiometric Index on the back of hand by the method of limits.

III). Attention and Other Fields

- a). Influence of set on Attention
- b). Span of Attention
- c). Muscular work (Ergo graph)
- d). Measuring Steadiness.

IV). Intelligence And Personality

- a). Measuring Intelligence by Koh's Block Test.
- b). Pass- Along test.
- c). Performance test-Curve Construction test.
- d). Knox Test Form- Board.
- e). Personality test – Introvert – Estrovert.
- f). Significance of Social Attitudes (Chi. Square techniques).

V). Demonstration of different categories of disabilities with psychological problems and their management.

Book References

1. Experimental Psychology - Underwood
2. Psychological Testing - Anastasts
3. Abnormal Psychology and modern life - Coleman. J.
4. Readings in Social Psychology - Hartley & New Cany
5. Industrial Psychology - Blum. Naylor Hamper & Row
6. Psychology of Handicap - Rosemary Shakespear
- 7) Ahuja N. – A short textbook of psychiatry (latest edn.) Jaypee brothers, medical publishers.
- 8) Shah L.P. : handbook of psychiatry
- 9) Gandhi & Gandhi – short text book of psychiatry.

Syllabus for Bachelor of Occupational Therapy PART - III

1. The part – III Examination shall consist of the following subjects (Teaching hour approximately for lectures to be delivered and practical classes to be held in each subject indicated against each subject:

S.Nr	Subject	Lectures	Practical
1	Occupational Therapy in Medical condition Part – II	120	100
2	Occupational Therapy in Surgical condition Part – II	120	100
3	Disability Prevention and Rehabilitation including Prosthetics & Orthotics ADL	120	100
4	Bio Statistics and Research Methodology	60	--
5	Occupational Therapy Clinicals	--	800

2. The full marks for each subject and the minimum marks required for passing the part III Examination shall be as follows:

	Subject	Written	Int. Asst.	Min. Marks (Wriint. Asst.	Practical	Int. Asst.	Min. Marks. (Prac.+Inrt. Asst.	Total Marks
1	Occupational Therapy in Medical condition Part – II	75	25	50	75	25	50	200
2	Occupational Therapy in Surgical condition Part – II	75	25	50	75	25	50	200
3	Disability Prevention and Rehabilitation including Prosthetics & Orthotics ADL	75	25	50	75	25	50	200
4	Bio Statistics and Research Methodology*	--	50	25	--	--	--	50

* no university exam

PAPER – I

OCCUPATIONAL THERAPY IN MEDICAL CONDITIONS PART – II

Theory: 120 hrs

Practical: 100 hrs

THEORY

Section – A [60hrs] [40 marks]

OCCUPATIONAL THERAPY IN NEUROLOGY & PEDIATRICS

Introduction: Brief Review of nervous system; Principles of occupational therapy management in neurological conditions. Objectives and functions of Occupational Therapy: Occupational therapy assessment in neurological conditions; various frames of reference used in occupational therapy. [10hrs]

A] Clinical features, medical management, occupational therapy assessment, aims, therapeutic techniques & approaches used in the following conditions;

1. Acute infections of nervous system – Encephalitis, meningitis, transverse myelitis neuro- syphilis. [5hrs]
2. Cerebral palsy, Hydrocephalus. [8hrs]
3. Poliomyelitis. [3hrs]
4. Cerebro vascular accidents. [6hrs]
5. Epilepsy. [2hrs]
6. Common affections of peripheral, spinal and cranial nerves, Myopathy. [8hrs]
7. Lesion of Pyramidal, extra pyramidal, cerebellar systems. [5hrs]
8. Motor neuron diseases. [3hrs]
9. Degenerative Neurological conditions, parkinsonism, syringomyelia. [7hrs]
10. Multiple sclerosis. [3hrs]

Section B [60hrs] [35 marks]

OCCUPATIONAL THERAPY IN PSYCHIATRY

1. Introduction & Brief review of psychiatric conditions. [2hrs]
2. Psychiatric rehabilitation team; objectives of occupational Therapy in Psychiatry. [2hrs]
3. History development of psychiatric occupational therapy [2hrs]
4. Different methods of evaluations in psychiatry; occupational therapy assessment used in psychiatric conditions. [3hrs]
5. Role of activities in psychiatric treatment [3hrs]
6. Define and describe the following approaches & techniques in evaluation & treatment of psychiatric conditions: [25hrs]

Cognitive behaviour approach, behaviour modification approach, occupational behaviour approach [MOHO], psychoanalytical approach, sensory integrative approach, developmental group approach, Therapeutic use of self, projective techniques, group therapy, attitude therapy, music therapy, supportive groups & vocational therapy.

IV. Occupational Therapy assessment, treatment aims, plans & methods of treatment for the following conditions: [20hrs]

- i) Psychosis: Schizophrenia, Mania, Depression
- ii) Neurosis: Neurotic depression, anxiety, hysteria, obsessive compulsive neurosis, phobia
- iii) Alcoholism and drug addiction
- iv) Childhood and geriatric mental health problems

V. Occupational Therapy as an adjunct to [3hrs]

- 1. Chemo therapy
- 2. Insulin Therapy
- 3. E.C.T.
- 4. Psycho therapy

PRACTICALS

Various techniques of occupational therapy for the above mentioned conditions/ diseases should be demonstrated and practiced by students.

CLINICAL PRACTICE

Students should undergo compulsory rotatory clinical postings on neurological, medical, pediatric and psychiatric IPD & OPD throughout the year.

Evaluation, functional diagnosis and treatment planning/ future planning: documentation of minimum 10 cases from above mentioned topics.

BOOK REFERENCES

Occupational therapy in Neurology & Pediatrics

- 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
- 5. Neurological Rehabilitation- A. U. Darcy
- 6. Occupational Therapy for children : J. CaseSmith and A Pratt
- 7. Introduction to occupational therapy and occupational therapy marketing by M Karthik
- 7. Occupational Therapy in Short Term Psychiatry by M. Wilson.
- 8. Occupational Therapy in Long Term Psychiatry by M. Wilson.
- 9. Quick reference to Occupational Therapy by K. Reed.
- 10. Occupational therapy and Mental Health by J. Creek.

PAPER – II

OCCUPATIONAL THERAPY IN SURGICAL CONDITIONS PART – II

Theory: 120 hrs

Practical: 100 hrs

Theory

Section – A [60 hrs] [40 marks]

- I. Introduction: Brief Review of Orthopedic conditions, clinical evaluation and treatment. [10hrs]
- II. Methods of Evaluation in occupational therapy [10 hrs]
- IV. Occupational Therapy techniques as remedial measures. [10 hrs]
- V. Objective and functions of occupational therapy in
- a) Congenital orthopaedic conditions and O.T. Management [10 hrs]
 - b) O.T. for fractures of upper and lower limbs, management of complications, internal fixation, external fixation, excision and replacement arthroplasty. [10 hrs]
 - c) Occupational Therapy management including PNF techniques for Erb's Palsy, brachial plexus palsy and peripheral nerve injuries. [10 hrs]

Section – B [60 hrs] [35 marks]

5. Injuries and pathological conditions of vertebral column and spinal cord, spinal orthosis and O.T. Management. [10 hrs]
6. Injuries at and around joints of upper and lower extremity, arthroscopic and surgical intervention O.T. treatment. [10 hrs]
- 7 Poliomyelitis and cerebral palsy. Reconstructive surgeries including limb lengthening procedures and orthotic magement. [10 hrs]
- 8 Arthritis, Surgical and rehabilitation programme. [10 hrs]
- 9 Pain management in Occupational Therapy. [05 hrs]
- 10 Cumulative trauma disorders and application of ergonomic principles in management of such conditions [10 hrs]
- 11 Metabolic disease of bone Rickets, Osteomalacia, Osteoporosis, gout, and O.T. Management. [05 hrs]

CLINICAL:

Students should undergo compulsory rotatory clinical postings on orthopedic and burns unit IPD & OPD throughout the year.

Evaluation, functional diagnosis and treatment planning/ future planning: documentation of minimum 10 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 – Ann Turner
4. Therapeutic exercise – Foundations and Techniques – Kisner
5. Therapeutic Exercise – J. Basmajian –(Latest Ed.)
6. Willard and Spackman's Occupational Therapy –
7. Rehabilitation of the Hand by Wynnparry CB Published by Butterworths
8. Orthopaedic Physical Assessment – David Magee Published By WB Saunders
9. Introduction to Occupational Therapy and Occupational Therapy Marketing by M Karthik
10. Clinical Orthopaedic Rehabilitation – Brent Brotzman Published by Mosby

PAPER – III

DISABILITY PREVENTION AND REHABILITATION INCLUDING PROSTHETICS & ORTHOTICS ADL

Theory: 120 hrs

Practical: 100 hrs

Section - A [60 hrs] [40 marks]

1. Introduction to disability, impairment, handicap & health [01 marks]
2. Definition and phases of disability process. [01 marks]
3. Definition concerned with causes of impairment, functional limitation, and disability. [01 marks]

4. Rehabilitation and disability prevention. [02 marks]
5. Present rehabilitation services. [02 marks]
6. Reservation & Legislation for rehabilitation services for the disabled. [03 marks]
7. Community based Rehabilitation. [05 marks]
8. Basic principles of Organization, Administration, Budget, management approach, personnel and space management [15 marks]
9. Rural rehabilitation incorporated with Primary Health Centers. [02 marks]
10. Principal of Communication: Impairment [10 marks]
 - i). Speech Production.
 - ii). Communication disorders secondary to Brain Damage.
 - iii). Aphasia and its treatment.
 - iv). Evaluating language.
 - v). Non-aphasic language disorders.
 - vi) Dysarthria and its treatments

11. Ethics for the professionals. [03 marks]
12. Social rehabilitation [05 marks]
 1. Principles in management of Social Problems
 2. Social needs of the patients
 3. Social workers role in rehabilitation team
13. Vocational Rehabilitation [10 marks]
 1. Principles in Management of vocational problems.
 2. Vocational Evaluation. Job Analysis
 3. Vocational Goals for the severely disabled.

Section – B [60hrs] [35 marks]

14. Prosthetics & Orthotics

- i). Definition & Basic Principles. [03 marks]
- ii). Designing and construction of orthosis:
 - a. Upper extremity orthosis [10 marks]
 - b. Lower extremity orthosis [10 marks]
 - c. Spinal orthosis. [10 marks]
- iii). Upper extremity and lower extremity prosthesis prescription, fitting and checking. [20 marks]
- iv). Prescription and design of footwear & modifications. [04 marks]
- v). Wheel Chairs. [03 marks]

BOOK REFERENCES

1. Rehabilitation - Evans
2. Directory for disabled people -
3. Improving residential life for disabled people - Tully
4. Physical Medicine & Rehabilitation - Okawata
5. Community diagnosis and health action - Bennetch
6. Hand book of Physical Medicine & Rehabilitation – Rusk
7. Introduction to Occupational Therapy and Occupational Therapy Marketing by M Karthik

PAPER - IV
BIO STATISTICS & RESEARCH METHODOLOGY

Total hours : 60 hrs. [Internal exams only]

COURSE CONTENTS

1. Review of literature	[2 hrs]
2. Study design	[3 hrs]
3. Sample size	[1 hrs]
4. Sampling variability & significance	[2 hrs]
5. Protocol writing	[2 hrs]
6. Ethical aspects	[2 hrs]
7. Data collection & presentation	[3 hrs]
8. Common statistical terms	[2 hrs]
9. Measures of location, average & percentiles	[3 hrs]
10. Variability & its measures	[3 hrs]
11. Normal distribution & normal curve	[2 hrs]
12. Probability	[2 hrs]
13. Significance of difference in mean	[2 hrs]
14. Chi- Square test	[2 hrs]
15. Correlation & regression	[3 hrs]
16. Demography & vital statistics	[2 hrs]
17. Correlation of measures of population & vital statistics.	[2 hrs]
18. Referencing Methods	[1 hrs]
19. Type of Research	[1 hrs]
20. Application of research methodology and statistics in Occupational therapy	[20 hrs]

BOOKS RECOMMENDED

A practical approach to PG dissertation- R. Raveendran & B. Gitanjali
Research Methods for Therapist - Hicks Carolyn
Methods in Biostatistics – Mahajan
Occupational Therapy – Willard and Spacksman

Syllabus for Bachelor of Occupational Therapy Part – IV

Part – IV Examination shall consist of the following subjects (teaching hour approximately for lectures to be delivered and practical classes to be held in each subject indicated against each subject).

S.No	Subject	Lectures	Practical
1	Community Medicine	75	-
2	Rehabilitation Medicine	120	50
3	Alternative Medicine	50	50
4	Physical Diagnosis	120	50
5	Ethics & management Study	60	-
6	Seminars & Discussions	50	-
7	Occupational Therapy Clinicals	-	960

2. The full marks for each subject and the minimum marks required for passing the same shall be as follows:

No	Subject	Written	Int. Asst.	Min.Marks (Writ+ Int.Asst)	Practical	Int. Asst.	Min.Marks (Prac.+Int. Asst.)	Total Marks
1	Community Medicine	75	25	50	-	-	-	100
2	Rehabilitation Medicine	100	25	50	50	25	25	200
3	Alternative Medicine	75	25	50	75	25	50	200
4	Physical Diagnosis	100	25	50	50	25	25	200
5	Ethics and management studies	50	25	25	-	-	-	75
6	Seminars & Discussions	50	-	-	-	-	-	50
7	Clinicals	50 (Based on regular attendance and clinical performance)						50

PAPER - I

COMMUNITY MEDICINE

Theory: 60 hrs

Demonstration: 15 hrs

COURSE DESCRIPTION

This course enables the student to understand the effects of the environment and the community dynamics on the health of the individual with special emphasis on disability limitation specific protection and rehabilitation.

COURSE OBJECTIVE

The objective of this course is that after 60 hours of lectures and 15 hours of demonstrations, practical, clinics and field visits, the student will be able to demonstrate and understanding of the influence of social and environmental factors on the health of the individual and society. In addition, the student will be able to fulfill with 75% accuracy (as measured by written, oral and practical evaluation), the following objectives of the course.

COURSE OUTLINE

Each topic 1 Hrs.

Section – A [30 hrs] [40 marks]

1. Concept of Health
2. Concept of Disease
3. Natural History of disease
4. Role of Socio-economic environment in health & disease
5. General epidemiology
6. Basic concept of morbidity / mortality rates
7. Period age cause of specific death rate
8. Role of indicators in health & disease
9. Role of epidemiological investigation in public health
10. Primary health care
11. National health care delivery system
12. ARI control program
13. Diarrhea disease control program
14. National AIDS control program
15. RNTCP
16. National leprosy elimination program
17. National blindness control program
18. Universal immunization program
19. ANC/PNC
20. Perinatal mortality & maternal mortality
21. IMR/ under 5 mortality rate
22. Occupational health methods of prevention of occupational disease & hazards
23. Social security (factories act / workers compensation benefit)
24. E.S.I.S. & its benefits
25. Contraceptive methods – II
26. Contraceptive methods – II
27. Concept of family planning – objective strategy of family planning program
28. Mental health- community aspects
29. Role of occupational therapy in mental health problem
30. Accident

Section – B [30 hrs] [35 marks]

31. Malaria
32. Filaria
33. Tuberculosis – I
34. Tuberculosis – II
35. Polio
36. Leprosy
37. Tetanus
38. Meningitis
39. Viral encephalitis
40. NCD – Chronic diseases & CHD
41. Hypertension
42. Diabetes mellitus
43. Stroke
44. Cancer
45. Rheumatic heart diseases
46. Blindness
47. National NGO's
48. International health agencies
49. Concept of perception / attitude / socialization
50. Learning & theories of learning
51. Social changes & change process
52. Motivation needs & drives
53. Principles & process of communication
54. Types & barriers of communication
55. Approach to health education & contents of health education
56. Principle & practice of health education
57. Critical evaluation of theories/tool/heart education
58. Role of health personnel in health education
59. Health education national health program
60. Elements of planning in health education programs

Book Reference

1. Textbook of Preventive and Social Medicine by Dr J E Park.

PAPER - II

REHABILITATION MEDICINE

Theory: 120 hrs

Practical: 50 hrs

COURSE DESCRIPTION

Following the basic science and clinical science courses, this course will enable the students to understand their role in the management of the disability within the rehabilitation team.

COURSE OBJECTIVES

The objectives of this course is that after 170 hours of lectures and instructions, in addition to clinics, the student will be able to demonstrate an understanding of-

- A. The concept of team approach in rehabilitation will be discussed and implemented, through practical demonstration with contributions from all members of the team.
- B. Observation and identification of diagnostic features in Physical conditions will be practiced through clinical demonstration
- C. Medical and surgical aspects of disabling conditions will be explained in relation to rehabilitation.
- D. Identification of residual potentials in patients with partial or total disability (temporary or permanent)
- E. Formulation of appropriate goals (long & short term) in treatment & rehabilitation will be discussed.

COURSE OUTLINE

SECTION – A [60 hrs] [50 marks]

- A. Introduction [3hrs]
 - i) Definition of the term rehabilitation & its aims and principles.
 - ii) Scope of rehabilitation
 - iii) Concept of rehabilitation team and their responsibilities.
- B. Evaluation of Dysfunction & Rehabilitation

Demonstrate methods of evaluation for dysfunction and rehabilitation management of disabilities with particular reference to:

- i) Spinal cord injury (paraplegia and tetraplegia) [4hrs]
 - ii) Poliomyelitis [2hrs]
 - iii) Head injury [2hrs]
 - iv) Stroke [3hrs]
 - v) Cerebral palsy [4hrs]
 - vi) Arthritic conditions [3hrs]
 - vii) Muscular Dystrophy [2hrs]
 - viii) Hansen's disease [2hrs]
 - ix) Peripheral nerve lesions [3hrs]
 - x) Cardio-respiratory dysfunction [5hrs]
- C. Outline of Occupational Therapy. [4hrs]

i) Principles, philosophy, scope, various domains & horizons of functions

D. Outline of Speech Therapy and Hearing Aids. [5hrs]

i) Types of speech difficulties; Significance of Speech Training

ii) Types of hearing problems; different hearing aids

E. Outline of social and vocational counseling. [4hrs]

i) Concept of socialization, social needs of the disabled, social counseling

ii) Vocational difficulties in disabled; vocational guidance

F. Principle of Bio-engineering and applied rehabilitation.

i) Hand splints – Prescription; methods of design and fabrication [10hrs]

ii) Orthosis & Prosthesis Checkout & functional Training [4hrs]

Section – B [60 hrs] [50 marks]

Anatomy, bio mechanics, acquired and congenital conditions, special tests, dysfunctions and rehabilitation management of conditions on the following joints;

G. Rehabilitation of the shoulder [10hrs]

H. Rehabilitation of the Elbow. [10hrs]

I. Rehabilitation of the Wrist & hand [10hrs]

J. Rehabilitation of the Hip [10hrs]

K. Rehabilitation of the Knee [5hrs]

L. Rehabilitation of the ankle [5hrs]

M. Rehabilitation of the spine [10hrs]

REFERENCE BOOKS

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 – Ann Turner
4. Hand book of Physical Medicine & Rehabilitation – Rusk
5. Rehabilitation medicine by Sunder
6. Willard and Spackman's Occupational Therapy –
7. Rehabilitation of the Hand by Wynnparry CB Published by Butterworths
8. Orthopaedic Physical Assessment – David Magee Published By WB Saunders
9. Introduction to Occupational Therapy and Occupational Therapy Marketing by M Karthik
10. Clinical Orthopaedic Rehabilitation – Brent Brotzman Published by Mosby

PAPER - III

ALTERNATIVE MEDICINE

Theory – 50 hrs [75 marks]

[Only one section, paper shall be set by internal examiner only]

The objective of the course is to make the student or the occupational therapist to get aware with the various branches of the alternative medicines, which he/she may use, for efficiently rehabilitating the individual.

COURSE CONTENT

1. Yoga Therapy [15hrs]

Definition, History, Principles, Concepts, Therapeutic Effects, indication, contraindication and its related application with Occupational Therapy

2. Naturopathy [7hrs]

Definition, History, Principles, Concepts, Therapeutic Effects, indication, contraindication and its related application with Occupational Therapy

3. Holistic Approaches [8hrs]

a. Pranic healing

Definition, History, Principles, Concepts, Therapeutic Effects, indication, contraindication and its related application with Occupational Therapy

b. Rhexi Therapy

Definition, History, Principles, Concepts, Therapeutic Effects, indication, contraindication and its related application with Occupational Therapy

4. Acupressure & Acupuncture Therapy [15hrs]

Definition, History, Principles, Concepts, Therapeutic Effects, indication, contraindication and its related application with Occupational Therapy

5. Other allied therapies related to alternative medicines [5hrs]

Concept of alternative medicine, & other alternative therapies; adjunct to occupational therapy

PAPER - IV

PHYSICAL DIAGNOSIS

Theory : 120 hrs

Practical: 50 hrs

This course serves to integrate the knowledge gained by the student in basic and clinical medical science with the skills gained by Basic Occupational Subjects thus enabling them to apply these in Evaluation of functions and measurements in General and in Clinical situations of dysfunctions of different system.

COURSE OBJECTIVE

The objective of this course is that after 170 hours of lectures, Demonstrations, Practical and clinics, the student will be able to acquire concept of Evaluation of functions and measurement in general and in disorders of different systems. Thus physical abnormality can be identified and measured by the students to facilitate Occupational Therapy management program.

COURSE CONTENT

Section - A [60hrs] [50 marks]

A. Introduction [5hrs]

Process of diagnosis; Differential diagnosis; clinical decision making process

B. General Consideration [10hrs]

Clinical Reasoning; Assessment of performance areas, Performance components & performance context; standard and non standard occupational therapy assessment scales & tools

C. Physical Diagnosis of cardio respiratory system. [20hrs]

Review of cardio respiratory anatomy and physiology.

Clinical features, Investigations, differential diagnosis, standard and non-standard occupational therapy assessment scales & tools for cardio respiratory conditions including

- i) Asthma, COPD, bronchitis, emphysema, pneumonia, tuberculosis & occupational lung disease
- ii) Coronary heart disease, Cardiomyopathy, cardiovascular disease, Ishaemic heart disease, Heart failure, Hypertensive heart disease, Inflammatory heart disease, Valvular heart disease.

D. Physical Diagnosis of Nervous system [25hrs]

Review of nervous system anatomy & physiology.

Clinical features, Investigations, differential diagnosis, standard and non-standard occupational therapy assessment scales & tools for neurological conditions including

- i) Stroke, Cerebral palsy, parkinsonism, cerebellar dysfunctions, epilepsy, motor neuron disease, multiple sclerosis, neuropathies & acute infections of nervous systems

Section – B [60hrs] [50 marks]

E. Physical Diagnosis of Musculo skeletal system. [20hrs]

Review of musculo skeletal system anatomy & physiology.

Clinical features, Investigations, differential diagnosis, standard and non-standard occupational therapy assessment scales & tools for orthopedic conditions including

Fractures and dislocations of upper & lower limb; Spinal deformities; inflammatory conditions of joints; degenerative conditions; nerve injuries & low back pain;

F. Physical Diagnosis of disability [10hrs]

Disability evaluation principles, guidelines for disability certificates; guidelines for the evaluation of permanent physical & mental impairment

G. Functional Evaluation [15hrs]

i) Purpose, general consideration, various functional assessment instruments;

ii) Standard & non standard assessment scales & tools for environment assessment, assistive technology assessment, wheel chair assessment, driving evaluation, activities of daily living assessment, play & leisure assessment

H. Occupational Evaluation. [15hrs]

Job evaluation & analysis, standard work assessment tools, work hardening, work conditioning, work station & ergonomics.

PAPER - V

ETHICS AND MANAGEMENT STUDIES

Theory: 60 hours [50 marks]

[Only one section, paper shall be set by internal examiner only]

COURSE DESCRIPTION

After 60 hours of lecture, students should be able to understand the ethical principles of occupational therapy profession & need for development of the profession. To be able to understand principles of management in personal management, time management and administration including budgeting

COURSE CONTENT

1. Professional Ethics and legal issues

- i. Professional Ethics: Indian & International ethics for occupational therapist [3hrs]
- ii. Medico legal issues; consumer protection act; legal responsibilities of professionals. [4hrs]
- iii. Current social and medical policy in the provision of health care; persons with disability act; mental health act; national trust for the welfare of persons with autism, cerebral palsy, mental retardation and multiple disabilities ACT. [15hrs]
- iv. National and international occupational therapy statutory bodies & professionals association (AIOTA & WFOT): Difference between association & council. [3hrs]
- v. Professional developmental activities [3hrs]
- vi. The role of international health agencies such as WHO and WCPT. [2hrs]

2. Management studies for Occupational Therapy

- i. Definition – Branches of management – Principles health sector management - Theories management. [4hrs]
- ii. Personnel management – Policies and procedure, Basic concepts and theories. [2hrs]
- iii. Financial issues including budget and income generation. [3hrs]
- iv. Organization & administration: Principles of an organization & administration. [3hrs]
- v. Organization of a department – Planning, space, manpower materials resources management, leadership, problem solving, marketing, quality management, communications. [10hrs]
- vi. NGO: role of NGO's in health care sector. [2hrs]
- vii. Self Management – [6hrs]
 - a. Preparing for Ist Job
 - b. Time Management
 - c. Career development activities
 - d. Private practice

SEMINARS & DISCUSSIONS

Students will be made to present seminars on various topics as given by the concerned lecturers. On the basis of their performance, the students will be evaluated out of 50 marks which will be considered for their final examination as gross internal assessment.

CLINICALS (Clinical Postings)

Compulsory rotatory clinical postings will be allotted in the various departments of the hospital on daily basis. Based on attendance, performance and successful completion of assignments the internal assessment will be done and students will be evaluated out of 50 marks which will be considered for their final examination as gross internal assessment.

RECOMMENDED TEACHING STAFF

This will be full time teaches

1. Principal of Professor – Master Degree in Occupational therapy or Physiotherapy or M. Sc. Occupational therapy/Physiotherapy with 5 years experience. Or Senior Occupational therapist with equivalent BOT degree and experience of at least 20 years.
2. The teacher and student ratio will be 1:10 and minimum 5 to 7 teachers for intake of 25 students and 8 to 10 teachers for 69 students. Preferably full time; Otherwise 50% part time/contractual.
3. The teaching staff will consist of Asst. Professor – preferably with master’s Degree in Occupational Therapy with 3 years experience and Tutor in Occupational Therapy with B.O.T. Degree. Ratio between Asst. Professor and Tutor will be 4:6.
4. One Lecturer / Asst. Professor with M.D. or M.S. Degree in each Medical Subject .
5. The teachers in allied subjects like Biostatistics etc can be part time or visiting.

PHYSICAL FACILITIES

A. Building Facilities: There must be adequate arrangement for the class rooms for all the batches with good ventilation and lighting. There must be sufficient space in the classrooms, so that there is no over crowding. Each student must have a space of s2.5’ x 2. 5 for his seat i.e. to accommodate 50 students the size of the classroom should not be less than 1500 – 2000 sq. ft.

	TYPE OF FACILITY	RECOMMENDED SPACE	NO.
1	Anatomy & Physiology Museum	20’ x 40’	1
2	Demonstrator room for Occupational Therapy	20’ x 20’	1
3	Cognition Perception Therapy Unit	20’ x 20’	1
4	ADL training Unit	20’ x 20’	1
5	Vocational Training Unit	20’ x 20’	1

6	NDT, Sensory Integration therapy Unit	20' x 20'	2
7	Paediatric Unit, Adult unit and Psychiatric unit	20' x 20'	3
8	Hand Therapy & Splinting Unit	20' x 20'	2

LABORATORY FACILITY

- a. Physiology (Experimental Physiology & Hematology)
- b. Anatomy (Museum martury and desecion Hall)
- c. Pathology (Microbiology and Pathology Practical)
- d. Fully Equipped Occupational therapy department (as per list given)
- e. Pharmacology & Biochemistry (Practical)

HOSPITAL FACILITIES: The applicant institute should have

A. Hospital run by the proper institute as per paramedical council rules regulation

GENERAL RULES AND REGULATIONS FOR BACHELOR OF OCCUPATIONAL THERAPY COURSE

1. The course of Bachelor of Occupational Therapy is of four and a half years duration including 6 months of compulsory internship.
2. On successful completion of the course. the candidates will be awarded the Degree of B.O.T. (Bachelor of Occupational Therapy)
3. A candidate seeking admission to BOT course must have passed H.S.C. (10+2) or equivalent examination from a Recognized Board/ University with either of the following group of subjects.

4. SELECTION PROCEDURE

1. The application for admission shall be made in the prescribed format of the concerned college only.
2. The application must be supported by necessary documents regarding proof of having passed qualifying examination. Data of Birth / Domicile SC/ST/OBC category etc./ as per the requirements specified in the information Brochure of the concerned college.
3. The college shall make public notification of the Admission notice in the leading news- papers giving all necessary details including date from which the admission forms shall be available and the closing date for issue and receipt of admission forms, minimum qualifications etc. The concerned college shall also put a notice on the Notice board of the college shall also put a notice on the Notice board of the college regarding this.
4. The process of Admission shall be completed before the commencement of the new academic session as per paramedical common healable.
5. The admission shall be made through merit and counseling
6. Division of seats into various categories shall be subject to statutory provisions and the same shall be displayed on the notice board of the college where the counseling is taking place.
7. To qualify a candidate must have at least 50% qualifying marks in general category and 40% qualifying marks for SC/ST and OBC.
8. Explanation: Qualifying marks means the marks obtained for the purpose of preparation of merit list.
9. Age Limit : No candidate shall be admitted to this course unless he/she has completed or will complete the age of 17 years on or before 31st July of the year of admission.

10. Distribution of the seats shall be as per the statutory provision and the concerned college shall notify such distribution in the admission notice under intimation to the university.
11. Reserved seat in case remaining vacant for want of suitable and qualified candidate can be filled by general category candidate from the waiting list.
12. Students who do not join the course in time are liable to be refused admission in case of delay in joining due to any reasons. a communication must be sent to the Officer the Charge of the Institute and prior permission from him must be obtained.
13. Students are required to attend all the lectures practicals and test etc conducted during the academic session. A student is required to attend a minimum of 75% in Theory and 80% in practical of the scheduled classes for this purpose attendance in theory and practical classes will be counted separately.
 - i. The dean of the college may condone the shortage of attendances up to 5% only on a valid ground.
 - ii. The students failing to fulfill the required attendance for the full period of one academy session (Theory and practical) will not be eligible to appear in annual examination in Theory & Practical.
14. All fees and privilege shall be forfeited if a student is dismissed for based conduct or any other reason or if he/she leaves the course during the course of B.P.T. in that case the student will have to pay the fee for further remaining period of course The rights are reserved with the Dean of the College to relax in charging fee for remaining period only up to 50% of the total remaining Fees.
15. The need of the institution reserves the right to remove the roll. If he/she fails to deposit college fees in time the Students will have to deposit the in every year if the student fails to deposit the college fee in the scheduled time in the case the college will be entitled to charge late fee from the students @ Rs. 10/- per day The dean of the college reserves the rights to condon the delay only on a valid ground of delay.
16. Medical Fitness: Medical fitness certificate should be furnished at the time of admission from recognized medical practitioner approved by the state council.
17. Cancellation of Admission if it is found that a candidate has succeeded in getting admission in the institution in the basis of false or incorrect information or by hiding relevant facts or if at any time after admission it is found that the admission was given to the candidate due to some mistaken or oversight the admission granted to such candidate shall be liable for cancellation forthwith without any notice at any time during the course of his/her studies by the Head of institution. In case of disputes of doubts concerning admission etc., decision of the Head of Institution shall be final and binding .
18. Admission shall be given to resident of Madhya Pradesh only, if the seats remain vacant, then admission to the candidates of other States shall be final and binding.

(N.B. This clause is not applicable to N.R.I/ Payment / MGT Seats)

19. Any students taking part in any kind of anti social activities taking part in any kind of hooliganism either inside or outside the institute premises unauthorized absence for attending classes taking part in any unacademic activities ragging etc., will be liable for rustication/ expulsion.
20. The Head of the Institution reserves the right to refuse admission/registration at his own discretion to any students in the beginning of any academic semester for reason of his/her behaving in a manner subversive to discipline or for any grave misconduct.

21. All students should check the percentage of their attendance from time to time and parents/guardians also should keep a watch with regard to the percentage of attendance of their son/daughter/ ward and progress in studies.
22. Modification to Rules/Procedures: The institution reserve the right to amend any rule/procedure for admission to the course and any modification so made shall be binding on all candidates. Under intimation to and with the consent of the University.
23. a) Fee structure shall be fixed by the parmedical council the university and the same must be contained in the information brochure which is to be supplied with the admission form.