Maharashtra University of Health Science, Nashik

Occupational Therapy Syllabus

I - B.O.Th.

[Applicable to students admitted from the year 2007-08]

SUBJECTS		TRANSCRIPT HOURS
1]	HUMAN ANATOMY ----------	235 HRS
2]	HUMAN PHYSIOLOGY ----------	235 HRS
3]	BIOCHEMISTRY ----------	40 HRS
4]	FUNDAMENTALS OCCUPATIONAL THERAPY - I ----------	240 HRS
5]	FUNDAMENTALS OF OCCUPATIONAL THERAPY - II ----------	240 HRS
6]	SUPERVISED CLINICAL PRACTICE ----------	410 HRS
	TOTAL	**1400 HRS**

[To practice clinical skills under the supervision of clinical supervising staff & to maintain folder in which prescribed case histories, & written assignments are to be documented & to obtain the signature from the respective section In-charge at the end of the clinical posting]

HUMAN ANATOMY

[235 HRS]

Didactic – 160 HRS – Practical / Laboratory – 75 hrs

Goal – To provide the student with the necessary Anatomical knowledge & skills to practice as a qualified Occupational Therapist

Course Objectives:

1) Histology – student should be able to identify & describe basic tissues.

2) MUSCULO – SKELETAL –

i) The student should be able to identify & describe Anatomical aspects of muscle bones & joints, & to understand and Analyze movements.

ii) To understand the Anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to limbs & spine.

iii) To be able to localize various surface land-marks;

iv) To understand & describe the mechanism of posture & gait the Anatomical basis of abnormal gait.

3) In NEURO – Anatomy –

i) To identify & describe various parts of C.N.S. – fore – brain, Midbrain, Hind-brain Brain stem, courses of cranial nerves; functional components, course distribution. Anatomical bases of clinical lesions:

ii) To describe the source & course of spinal tracts;

iii) To describe blood circulation of C.N.S. & spine;

iv) Be able to identify the components of various Trans –sections.

4) THORAX – to identify & describe various components of the contents of the Thorax – with special emphasis to tracheo-bronchial tree, & cardio – pulmonary system.

5) CIRCULATORY – I) be able to identify & describe the source & course of major arterial venous & Lymphatic system, with special emphasis to extremities, Spine & Thora

Practical:

i) to be able to demonstrate the movements of various joints – (33 hrs)

ii) distinguish cranial & peripheral nerves (30 hrs)

iii) distinguish major arteries, veins & Lymphatics with special emphases to extremities, & spine. (12 hrs)

Course Contents:

1] GENERAL Anatomy Histology of Epithelial, Connecting muscular, nervous tissues (07 hrs)

2] MUSCULO SKELETAL Anatomy

i) Superior extremity (20 hrs)

ii) Inferior extremity (20 hrs)
iii) Spine, head & neck (10 hrs)
iv) Facial & pelvic floor muscle & T.M. joint (05 hrs)
v) Surface Anatomy (05 hrs)

3] NEURO –Anatomy (45 hrs)

i) General organization of C.N.S.

ii) Cranial nerves

iii) Peripheral nervous system

iv) C.N.S.

4] SYSTEMIC ANATOMY –

i) Elementary system (05 hrs)
ii) Uro –genital system [special emphasis to Female organs] (05 hrs)
iii) Micro – Anatomy (cartilage, bone, nerve, muscle) (05 hrs)
iv) Cardio – vascular [including Lymphatic] (06 hrs)
v) Respiratory system (05 hrs)
vi) Integrated neuro – muscular (02 hrs)
vii) Axial skeletal (03 hrs)
viii) Appendicular system (05 hrs)
ix) Sensory organs (06 hrs)
x) Endocrine (02 hrs)
xi) Radiological (04 hrs)

Practicals : by demonstrations:- (75 hrs)

TEXT BOOKS

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

REFERENCE BOOKS

1] Gray's Anatomy
2] Extremities by Quining Wasb
3] Atlas of Histology by Mariano Defiore

SCHEME OF EXAMINATION

1] THEORY – 80 MARKS + Int. assessment – 20 marks Total …..... 100 Marks

Internal Assessment – one exam of the end of each term (Average of total marks obtained to be considered for Internal Assessment)

University exam ---------- 80 marks

Section A) M.C.Q.

Q1-based on Single best response …… [20 x 1] --- 20 marks – [20 minutes]

This question should include all the topics of syllabus –

Section B) S.A.Q.

Q2- Answer any Five out of Six -…… [3 x 5] ---------- 15 marks

This question should include

i] Digestive ii] /uro-genital iii] reproductive system iv] special senses – eye /ear/skin v] circulatory system.

Q3- Answer any 3 out of 4 …… [5 x 3] ---------- 15 marks

This question should include i] Thorax ii] soft parts upper limb iii] soft part lower limb iv] soft parts Thorax /spine / neck

Section C) L.A.Q.

Q4- Compulsory – based Musculo Skeletal system [including Kinesiology]--15marks

Q5- should be based on Neuro-Anatomy [including cranial nerves with emphasis to V,VII, VIII, IX & XII nerves] ---------- 15 marks

OR

Q6- With one option ---------- 15 marks

PRACTICAL – 80 MARKS + Internal assessment – 20 marks = Total 100 marks should include

1] Spots (Division to marks distribution is as follows) ---------- 60 marks

Each spots is of 3 marks, total 20 spots

a) 5 spots on Digestive / urogenital / reproductive / special senses / circulatory system / radiology / Histology.
b) 5 spots soft parts of thorax / spine / neck / upper limb/ lower limb
c) 5 spots musculo skeletal system
d) 5 spots of neuro anatomy

2] Viva ---------- 15 marks

Journal ---------- 05 marks

Internal assessment –

One exam of the end of each term [the average of total marks obtained to be considered for Internal Assessment]

HUMAN PHYSIOLOGY

[235 HRS]

Theory – 155 Hrs, Practical / Laboratory – 80 Hrs

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

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

Course contents:

1) GENERAL Physiology Structure of cell membrane. Transport across cell membrane and Homeostasis ---- (only short notes) ---------- (4hrs)

2) BLOOD- Rh- A B O system & mismatch-transfusion WBC plasma protein Erythrocytes, Hemoglobin. Normal values of Blood (Composition & function) ---------- (7hrs)

3) NERVE Neuron AHC ---------- (8hrs)

i) Structure, classification & Properties; ii) R.M.P. iii) action potential;
ii) Propagation of nerve impulse; v) degeneration & regeneration
iii) Reaction of degeneration (retrograde)

4) MUSCLE ---------- (9hrs)

i) Structure- properties-classification-excitation/contraction coupling
ii) Motor unit- E.M.G.- factors affecting muscle transmission-
iii) Neuro-muscular transmission

5) C.N.S. ---------- (32hrs)

i) Receptor physiology-classification & properties-;
ii) Synapse-structure, properties, & transmission;
iii) Reflexes-classification & properties;
iv) Sensory & Motor Tracts-effect of transaction (complete & incomplete) at various levels
v) Physiology of Touch, Pain, Temperature & Proprioception;
vi) Physiology of Muscle Tone (muscle spindle); Stretch
vii) Vestibular Appralus mainly ottolyth organ Anatomy
viii) Connections Function of Basal Ganglia, Thalamus, Hypo-Thalamus, Pre-frontal lobe, P.A.S. and cerebellum

ix) Sensory / motor cortex;

x) Limbic system;

xi) Learning, memory & condition reflex,

xii) Physiology of Voluntary movement

6) EXCRETARY system ---------- (10hrs)

i) Kidneys- structure & function;

ii) urine formation;

iii) Micturition- neural control – neuroqenic bladder

7) TEMPERATURE REGULATION ---------- (05hrs)

i) circulation of the skin- body fluid- electrolyte balance

8) ENDOCRINE ---------- (10hrs)

i) secretion- regulation & function of Pituitary-thyroid-adrenal-parathyroid- pancreas

9) REPRODUCTIVE system ---------- (05hrs)

i) Functions of Estrogen, Progesterone & Testosterone

ii) Puberty & Menopause

10) SPECIAL senses-

i) Eye-Errors of refraction-accommodation-reflexes-dark & light adaptation-photosensitivity ---------- (05hrs)

GIT system (05 hrs)

11) RESPIRATORY system ---------- (20hrs)

i) Introduction, general organization;

ii) Mechanics of respiration;

iii) Pulmonary Volumes & capacities;

iv) Anatomical & Physiological Dead space-ventilation/perfusion ratio, alveolar ventilation

v) Transport of respiratory gases

vi) Nervous & Chemical control of respiration

vii) Pulmonary function tests-Direct & indirect method of measurement;

viii) Physiological changes with altitude & acclimatization

12) CARDIO – VASCULAR---------- (20hrs)

i) structure & properties of cardiac muscle;

ii) Cardiac cycle;

iii) Heart rate regulation-factors affecting;

iv) Blood pressure- definition-regulation-factors affecting;

v) cardiac output-regulation & function affecting;

vi) Peripheral resistance, venous return

vii) Regional circulation-coronary-muscular, cerebral

viii) normal ECG

13) EXERCISE physiology ---------- (10hrs)

i) Effects of acute & chronic exercises;
ii) oxygen / CO2 transport-O2 debt-

iii) effects of exercise on muscle strength, power, endurance, B.M.R.,

R.Q.-hormonal & metabolic effects-respiratory & cardiac conditioning

iv) AGING

v) Training-fatigue- & recovery;

vi) Fitness-related to age, gender, & body type

14) A.N.S ---------- (05hrs)

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

PRACTICAL

1) Haematology – (demonstration only) ---------- (15hrs)

2) GRAPHS ---------- (14hrs)

i) skeletal muscle-properties-pre / after load-fatigue-Starling's law

ii) Cardiac muscle-properties-effect of Ach & Adrenaline.

3) Physical fitness ---------- (12hrs)

i) breath holding
ii) mercury column test;
iii) cardiac efficiency test- Harvad step test- Master step test

4) Blood pressure- effects of change in posture & exercise ---------- (08hrs)

5) Stethography ---------- (04hrs)

i) effect of deglutination;

ii) voluntary hyperventilation

6) Spirometry ---------- (04hrs)

i) Lung volumes ii) timed vital capacity

7) Bicycle ergography ---------- (04hrs)

8) Perimetry ---------- (04hrs)

9) Clinical examination ---------- (15hrs)

respiratory / cvs / higher functions / memory / time / orientation / reflexes / motor & sensory system / Cranial nerves.

TEXT BOOKS

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

REFERENCE BOOKS

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

SCHEME OF EXAMINATION

1) **THEORY-80MARKS + INT. ASSESSMENT-20MARKS=TOTAL - 100MARKS**

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

University exam ---------- 80 marks

Section-A-MCQ.

Q-1) based on single Best answer ------ (20 x 1) ---------- 20 marks

It must include all topics of syllabus

Section-B-SAQ.

Q-2) Answer any Five out of Six ----- (5 x 3) ---------- 15 marks

Should include – i)- Blood, ii)- G.I.tract iii)- Endocrine

iv)- Uro-genital v)- Metabolism vi)- special senses (eye/ear/skin)

Q-3) Answer any Three out of four ----- (3 x 5) ---------- 15 marks

Should include i)- Cardio – vascular ii)- Respiratory iii)- Exercise Physiology iv)- Electrolyte balance

Section-C-LAQ.

Q-4) based on Musculo-skeletal system ---------- 15 marks

Q-5) based on C.N.S./ spinal cord/Electro-Neuro-Physiology ---------- 15 marks

OR

Q-6)- ---------- do---------- 15 marks

LAQ should give break up of 15 marks

2)- **PRACTICAL – 80 Marks + Internal Assessment 20 Marks**

a) Spots-based on topics 1 to 8 mentioned in practical syllabus -------- 20 marks

b) Viva-based on CNS, muscular nerve physiology

(4 spots of 5 marks each = 4 x 5) ---------- 20 marks

c) Demonstration – on Clinical Physiology of CVS, RS, CNS------ 35 marks

d) Journal ---------- 05 marks

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

BIOCHEMISTRY

[40 HRS]

Course Objective: The students should be able to

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

Course contents: **(40 hrs)**

1) CARBOHYDRATES ---------- (08 hrs)
   a) Chemistry, Definition, classification with examples, functions.
   b) Digestion and Absorption, glycogenesis, glycolysis, TCA cycle. Hormonal regulation of blood glucose, diabetes mellitus, glycosuria, changes in Carbohydrate, protein & lipid metabolism.

2) PROTEINS ----------(04 hrs)
   Definition, Importance, Functional / Classification, Digestion & Absorption, decarboxylation, deamination, transamination, transmethylation, Urea cycle, clinical significance of serum urea, function of glycine, Phenylalanine, trytophan, methionine tyrosine.

3) ENZYMES ----------(04 hrs)
   Definition, Modern Classification, Factors affecting enzymes Action, diagnostic & therapeutics uses & enzymes, iso-Enzymes, competitive & Non competitive inhibition.

4) VITAMINS ---------- (03 hrs)
   Definition, Classification, Fat & water soluble vitamins, functions, Deficiency manifestations sources & RDA

5) MINERALS ---------- (03 hrs)
   Ca, P, Fe, I, Zinc, Selenium, Fluorine, Magnesium, Function sources, Deficiency manifestations.

6) HORMONES ---------- (01 hr)
   Definition with mechanism of action, classification

7) NUTRITION ---------- (03 hrs)

Composition of food, balanced diet, kwashiorkor, marasmus, nitrogen balance, major dietary constituent & their basal metabolic rate, factors affecting, BMR & their importance.

8) Clinical Biochemistry ----------(03 hrs)

Liver function test, kidney function test, Lipid profile in serum.

9) LIPID ---------- (04 hrs)

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

10) Muscle Contraction ---------- (02 hrs)

Mechanism & Biochemical, events

11) NUCLEIC ACID ---------- (02 hrs)

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

12) Clinical Significance of some importance biochemical constituents in serum in various diseases. ---------- (03 hrs)

TEXT BOOKS :-

Medical Biochemistry : U. Satyanarayan

Biochemistry : Dr. Vasudev

REFERENCE BOOK:

Biochemistry (2nd edition) by Dr. Pankaja Naik

SCHEME OF EXAMINATION

Theory University exam --- 40 marks, I.A. ---10 marks (Total 50 marks)

(Distribution of marks for University Exam)

Section A-MCQ-

Q-1] based on Single best answer (10 x 1) ---------- 10 marks

Section B-SAQ

Q-2] Any five out of six (5x3) ---------- 15 marks

Section C-SAQ

Q-3] Any three out of four (3x5) ---------- 15 marks

INTERNAL ASSESEMENT

One exam at the end of each term (Average of total marks obtained to be considered for Internal Assessment)

FUNDAMENTALS OF OCCUPATIONAL THERAPY – I

Total Hours: 240 (theory – 80, practical – 160)

Theory: 100 marks (University examination: 80, Internal Assessment: 20)

Practical: 100 marks (University examination: 80, Internal Assessment: 20)

Course Objectives:

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

1) a) Describe the history & development of Occupational Therapy internationally. Describe the present development of Occupational Therapy in India including organization of All India Occupational Therapists association

   b) Define Rehab, discuss philosophy of rehab with reference to principles of physical medicine & briefly outline the role of different team members, describe Occupational therapist's contribution as a part to total rehab team.

2) Briefly explain theory of Occupation & various area of occupation understanding various dimensions as applied to Occupational Therapy.

3) Describe the occupational performance model with respect to physical dysfunction, treatment continuum based on this model & relationship of the model to treatment approaches viz, biomechanical, motor control & rehabilitation.

4) Describe generalized & specific principles of therapeutic exercises. Explain type of movements, muscule contraction used in exercise. Describe classification of exercises & application to activity. State application of principles to develop muscle strength, endurance, coordination, range of motion. Briefly outline principles of progressive exercises; brief repetitive isometric exercises and regressive resistive exercises.

5) Describe therapeutic modalities. Outline treatment objectives for purposeful activities & its characteristic. Describe principles of activity analysis in respect to biomechanical, sensory motor & socio-cultural aspects. Briefly, outline criteria for selection of activity.

6) Describe principles & methods of testing range of motion & muscle strength.

7) Define, classify & state various testing methods of sensation, perception, coordination and muscle tone.

PRACTICALS:

1) Acquire the skill of assessment of range of motion of joints of U.E & L.E. on normal subjects

2) Acquire the skill of assessment of group muscle strength in U.E. & L.E. on normal subject.
3) Analyze activities such as shoulder wheel, Bicycle fretsaw, eating, inclined sanding, Medicine Ball Kicking.

Course Content:

1) Definition and scope of Occupational Therapy ---------- (10 hrs)
   a) History & development of O.T.
   b) Rehabilitation Philosophy, rehab team, need of rehab. Principles of physical medicine
2) Theory of Occupation - ---------- (05 hrs)
   Forms of occupation, occupation as evolutionary trait, Biological dimensions, Social dimensions, Psychological dimensions of occupation, Application of theory to occupational Therapy
3) Occupational performance model with respect to physical dysfunction -- (05 hrs)
   Treatment continuum based on this model & relationship of the model to treatment approaches viz biomechanical, motor control & rehabilitation.
4) Principles of Therapeutic Exercise: ---------- (15 hrs)
   a) Generalized & specific principles
   b) Types of Movements, Muscle contraction used in exercise
   c) Exercise classification & application to activity
   d) Objective to develop i) Power ii) Endurance iii) Coordination iv) ROM
   e) Progressive resistive exercise (PRE), Regressive resistive exercise (RRE), brief repetitive isometiric exercise (BRIME)
5) Therapeutic Modalities: ---------- (10 hrs)
   Purposeful activity & characteristics
6) Activity Analysis: ---------- (15 hrs)
   a) Principles of activity analysis
   b) Biomechanical & sensory motor
   c) Adapting & grading activity
   d) Selection of activity
7) Principles and methods of Assessment: ---------- (10 hrs)
   a) Joint range of motion
   b) Muscle strength
8) Definition, classification, variation in testing methods of following: ------- (10 hrs)
   a) Muscle tone
   b) Coordination
   c) Sensation
   d) Perception

PRACTICALS:

1) Assessment of joint range of motion of U.E. & L.E. on normal subject (80 hrs)

2) Assessment of group muscle strength U.E. & I.E. on normal subject (80 hrs)

3) Activities to be analysed shoulder wheel, Bicycle fretsaw, eating, inclined sanding, medicine ball kicking.

TEXT BOOKS RECOMMENDED

1) Muscle Testing & function by F.P. Kendall
2) Occupational Therapy for Physical Dysfunction by C.A. Trombly
3) Measurement of joint motion : a guide to goniomentry 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.

SCHEME OF EXAMINATION – FUNDAMENTALS OF O.T – I

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

University Exam – Duration of paper 3 hrs

Distribution of maximum marks out of 80 marks –

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

Section (B) [30 marks]

1) SAQ – Answer any 3 out of 4 [3 x 5] ---15 marks

2) SAQ – Answer any 5 out of 6 [5 x 3] ---15 marks

Section (C) [30 marks]

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

OR

LAQ one question

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

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

PPACTICAL EXAMINATIONS – TOTAL MARKS 100 (I.A. 20 University Exam-80)

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

Topic	Marks
A. Goniometery	20
B. Muscle testing	20
C. Activity Analysis	20
D. Viva Voce	20
Total	**80**

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

FUNDAMENTALS OF OCCUPATIONAL THERAPY II

Total Hours : 240 (theory – 60, practical -180)

Theory : 100 marks (University examination : 80, Internal Assessment :20)

Practical : 100 marks (University examination : 80, Internal Assessment : 20)

Course Objective:

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

1) a) Define human development and explain the importance of its knowledge in occupational therapy.

b) Enumerate with examples the various aspects of human development such as physical, sensory, motor, cognitive, emotional, cultural & social.

c) Specify & describe biological environmental & inherited factors influencing human growth & development & its importance related to Occupational Therapy.

2) a) Specify general principles of human maturation

b) Explain following anatomic directional Principles of human development.

i) Cephalocaudal pattern of development

ii) Proximodistal pattern of development

iii) Mediolateral pattern of development

iv) Mass to specific pattern of development

v) Gross to fine motor pattern of development

3) Define & classify Activities of daily living (ADL). Explain evaluation of ADL & give outline of various scales used. Outline principles & specific techniques in ADL training. Describe briefly achieving access to home, community & work place. Briefly, explain the sociocultural – economic deviations. Outline the principles of adaptation process. Define adaptive devices.

4) Explain briefly occupational therapy as diagnostic & prognostic procedure.

5) Explain in brief the following steps involved in preparing the client for return to work.

a) Prevocational evaluation

i) Evaluation of work capacity

ii) Evaluation of physical capacity

iii) Evaluation of functional capacity

b) On the job or work site evaluation

c) Work samples such as TOWER, BTE, WEST

d) Work hardening & work conditioning

6) Have a brief knowledge of different types of tools & equipments & their uses in Occupational Therapy. Explain therapeutic uses & maintenance of tools & equipments.

7) Define & classify splints with their brief description, state general principles of splinting, describe material used.

8) Describe hand function & evaluation methods

a) Functional anatomy of hand
b) Prehension & grasp patterns.
c) Grip & pinch strength
d) Functional evaluation of hand
e) Oedema assessment

PRACTICALS

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

Course Content:

1) Basic concepts of human development - ---------- (10 hrs)

a) Importance of knowledge base, definitions
b) Aspects of human development – physical, motor, sensory, cognitive, emotional, cultural, social.
c) Factors influencing human growth & development – biological, environment, inherited.

2) Principles of maturation: - ---------- (10 hrs)

a) General principles
b) Anatomic directional principles
   i. Cephalocaudal patterns of development
   ii. Proximal distal patterns of development
   iii. Medial lateral patterns of development
   iv. Mass to specific patterns of development
   v. Gross motor to fine motor patterns of development

3) Activities of daily living – ---------- (10 hrs)

a) Definition
b) Classification
c) Evaluation of ADL
d) Various scales used in ADL (Barthel, Katz, Kenny's, Klein-Bell, AMP's Indices)

e) Principles & specific techniques in ADL training for:

i) Weakness

ii) Low endurance

iii) Limited ROM

iv) In co-ordination

v) Loss of use of one side of body

vi) Limited vision

vii) Decreased sensation

f) Achieving access to home, community & work place.

g) Adaptation: i) Adaptation process

ii) Introduction to adapted devices

h) Cultural & socio-economical deviations in ADL

4) Occupational Therapy as diagnostic & prognostic procedure ---------- (3 hrs)

a) Definition of evaluation

b) Types of evaluation

c) Steps involved in evaluation

5) Preparing for return to work ---------- (7 hrs)

a) Prevocational capacity evaluation

i) Work capacity evaluation

ii) Physical capacity evaluation

iii) Functional capacity evaluation

6) Crafts: Knowledge of tools, equipment, materials, their therapeutic values & uses----- (5 hrs)

7) Hand function & evaluation methods: ---------- (5 hrs)

a) Functional anatomy of hand

b) Prehension and grasp patterns.

c) Grip & pinch strength.

d) Functional evaluation of hand

e) Oedema assessment

8) Introduction to hand splints: Definition, Classification, principles, material used in designing & fabrication ---------- (10 hrs)

PRACTICALS

1) Design a paper model of following hand splints ---------- (90 hrs)

a) Finger Gutter

b) Resting pan

c) Long opponens

d) Radial bar cock-up

e) Radial nerve splint using extension outrigger

2) Job analysis Tailoring, data entry on computers, wood cutting, envelop making ---------- (80 hrs)

3) Identify tools & equipments, their parts, uses & therapeutic uses. ------- (10 hrs)

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

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

SCHEME OF EXAMINATION FUNDAMENTALS OF OT – II

THEORY – TOTAL 100, (I.A. – 20, UNIVERSITY EXAMS – 80)

University Exam – Duration of paper 3 hrs

Distribution of maximum marks out of 80 marks

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

Section (B) [30 marks]

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

(2) SAQ – Answer any 5 out of 6 [5 x3] ----- 15 marks

Section I [30 marks]

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

OR

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

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

Internal Assessment – one exam at the end of each term (Average of total marks to be considered for Internal Assessment)

PRACTICAL EXAMINATIONS – TOTAL MARKS 100 (I.A. 20, UNIVERSITY EXAM-80)

Internal Assessment: 20, Marks University Examination: 80 marks

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

Topic	Marks
A. Identification of spots	20
B. Preparation of basic splints (Paper patterns)	20
C. Job Analysis	20
D. Viva Voce	20
Total	**80**

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

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SCHEME OF EXAMINATION – I BOTH

Subject	Theory	I.A.	Total	Practical	I.A.	Total
Anatomy	80	20	100	80	20	100
Physiology	80	20	100	80	20	100
Biochemistry	40	10	50	--	--	--
Fundamentals of O.T-I	80	20	100	80	20	100
Fundamentals of O.T.-II	80	20	100	80	20	100

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HUMAN ANATOMY

[235 HRS]

Didactic – 160 HRS – Practical / Laboratory – 75 hrs

Goal – To provide the student with the necessary Anatomical knowledge & skills to practice as a qualified Occupational Therapist

Course Objectives:

1) Histology – student should be able to identify & describe basic tissues.

2) MUSCULO – SKELETAL –

i) The student should be able to identify & describe Anatomical aspects of muscle bones & joints, & to understand and Analyze movements.

ii) To understand the Anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to limbs & spine.

v) To be able to localize various surface land-marks;

vi) To understand & describe the mechanism of posture & gait the Anatomical basis of abnormal gait.

3) In NEURO – Anatomy –

i) To identify & describe various parts of C.N.S. – fore – brain, Midbrain, Hind-brain Brain stem, courses of cranial nerves; functional components, course distribution. Anatomical bases of clinical lesions:

ii) To describe the source & course of spinal tracts;

v) To describe blood circulation of C.N.S. & spine;

vi) Be able to identify the components of various Trans –sections.

4) THORAX – to identify & describe various components of the contents of the Thorax – with special emphasis to tracheo-bronchial tree, & cardio – pulmonary system.

5) CIRCULATORY – I) be able to identify & describe the source & course of major arterial venous & Lymphatic system, with special emphasis to extremities, Spine & Thora

Practical:

i) to be able to demonstrate the movements of various joints – (33 hrs)

ii) distinguish cranial & peripheral nerves (30 hrs)

iii) distinguish major arteries, veins & Lymphatics with special emphases to extremities, & spine. (12 hrs)

Course Contents:

1] GENERAL Anatomy Histology of Epithelial, Connecting muscular, nervous tissues (07 hrs)

2] MUSCULO SKELETAL Anatomy

i) Superior extremity (20 hrs)
ii) Inferior extremity (20 hrs)
iii) Spine, head & neck (10 hrs)
iv) Facial & pelvic floor muscle & T.M. joint (05 hrs)
v) Surface Anatomy (05 hrs)

3] NEURO –Anatomy (45 hrs)

i) General organization of C.N.S.

ii) Cranial nerves

iii) Peripheral nervous system

iv) C.N.S.

4] SYSTEMIC ANATOMY –

i) Elementary system (05 hrs)
ii) Uro –genital system [special emphasis to Female organs] (05 hrs)
iii) Micro – Anatomy (cartilage, bone, nerve, muscle) (05 hrs)
iv) Cardio – vascular [including Lymphatic] (06 hrs)
v) Respiratory system (05 hrs)
vi) Integrated neuro – muscular (02 hrs)
vii) Axial skeletal (03 hrs)
viii) Appendicular system (05 hrs)
ix) Sensory organs (06 hrs)
x) Endocrine (02 hrs)
xi) Radiological (04 hrs)

Practicals : by demonstrations:- (75 hrs)

TEXT BOOKS

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

REFERENCE BOOKS

1] Gray's Anatomy
2] Extremities by Quining Wasb
3] Atlas of Histology by Mariano Defiore

Maharashtra University of Health Sciences, Nashik

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