

Ordinance Governing

Bachelor of Occupational Therapy (B.O.T) Degree Course

Syllabus / Curriculum 2020-21



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VISION

To be an outstanding University of excellence ever in pursuit of newer horizons to build self-reliant global citizens through assured quality educational programs.

MISSION

- To promote sustainable development of higher education consistent with statutory and regulatory requirements.
- To plan and continuously provide necessary infrastructure, learning resources required for quality education and innovations.
- To stimulate to extend the frontiers of knowledge, through faculty development and continuing education programs.
- To make research a significant activity involving staff, students and society.
- To promote industry/organization, interaction/collaborations with regional / national / international bodies.
- To establish healthy systems for communication among all stakeholders for vision oriented growth.
- To fulfill the national obligation through rural health missions.

OBJECTIVES

The objectives are to realize the following at university and its constituent institutions:

- To implement effectively the programs through creativity and innovation in teaching, learning and evaluation.
- To make existing programs more careers oriented through effective system of review and redesign of curriculum.
- To impart spirit of enquiry and scientific temperament among students through research oriented activities.
- To enhance reading and learning capabilities among faculty and students and inculcate sense of lifelong learning.
- To promulgate process for effective, continuous, objective oriented student performance evaluation.
- To ordinate periodic performance evaluation of the faculty.
- To incorporate themes to build values, civic responsibilities & sense of national integrity.
- To ensure that the academic, career & personal counseling are in-built into the system of curriculum delivery.
- To strengthen, develop and implement staff and student welfare programs.
- To adopt and implement principles of participation, transparency and accountability in governance of academic and administrative activities.
- To constantly display sensitivity and respond to changing educational, social, and community demands.
- To promote public- private partnership.

INSIGNIA



The Emblem of the University is a Philosophical statement in Symbolic.

The Emblem...

A close look at the emblem unveils a pillar, a symbol of the “University of Excellence” built on strong values & principles.

The Palm and the Seven Stars...

The Palm is the palm of the teacher - the hand that acts, promises & guides the students to reach for the Seven Stars...

The Seven Stars signify the ‘Saptarishi Dnyanamandal’, the Great Bear- a constellation made of Seven Stars in the sky, each signifying a particular Domain. Our culture says: The true objective of human birth is to master these Knowledge Domains.

The Seven Stars also represent the Saptarishis, the founders of KLE Society whose selfless service and intense desire for “Dnyana Dasoha” laid the foundation for creating the knowledge called KLE Society.

Hence another significance of the raised palm is our tribute to these great Souls for making this University a possibility.

Empowering Professionals...

‘Empowering Professionals’, inscription at the base of the Emblem conveys that our Organization with its strength, maturity and wisdom forever strive to empower the student community to become globally competent professionals. It has been a guiding force for many student generations in the past, and will continue to inspire many forth coming generations.

NOTIFICATION

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Section-I

PREAMBLE

The disability profile has been increasing as indicated in the recent surveys by Government of India. New fields like community health centers, industrial health centers, homes for elderly, hospices, rehabilitation centers, schools for disabled, research centers, sports medicine and training centers, non-governmental organizations show an inadequate participation from qualified Occupational therapists. Hence, there is a growing need for the qualified Occupational therapists in our country.

Occupational therapy is an allied health care profession characterized by the treatment of various diseases and disorders with the help of skilled use of physiologically-based movement techniques, supplemented when necessary by activities and other physical means for the prevention and treatment of injury and disease. It is used to assist the process of rehabilitation and restoration of function, including the achievement of personal independence. The work of the Occupational therapist is therefore essential to ensure a good quality of life of individuals ranging

from children to the elderly with various disabilities like physical, neurological, psychosocial and sensory, rehabilitation needs and their integration in the community. The specific objective of the therapist is to function as an integral part of a multidisciplinary team to enable those whose abilities in productivity, self-maintenance and leisure are threatened, restricted or lost due to impairment, developmental delay, ageing or lack of opportunity, to become full and productive members of the community. Occupational therapists are therefore of paramount importance in the effective operation of the health care, social welfare and education systems. Occupational therapists play an important role in preventive medicine which includes all pathologies of musculo-skeletal, neuromuscular & cardiovascular system at all ages.

The first three years of study have been designed to equip students with all the basic training needs of a Occupational therapist for general practice, including implementation of treatment after effective Occupational therapy assessment, good communication and interpersonal skills and commitment to ethical and social responsibility. The fourth year of study leads to the award of a Bachelor of Occupational therapy and is designed to meet the research and administrative and management needs of the profession, including exposure to clinical electives. The practical and clinical education training will provide the opportunity for translation of theoretical knowledge into hands-on practice of immediate relevance and will further help students in acquiring professional competence. Graduates with this degree can either pursue higher studies like Master of Occupational therapy and post graduate diploma or seek employment locally and internationally. Occupational therapists are employable in a wide range of areas like clinics, hospitals, hospices, homes for elderly, schools, industries, sports medicine centers etc and can also choose private practice after they are awarded the Bachelor of Occupational therapy degree.

Section-II

GOALS OF OCCUPATIONAL THERAPY EDUCATION

Various Goals of education & training in occupational therapy at KLE University are as follows:

- Teach common problems of health and disease and the National Health programs.
- Take up responsibilities of occupational therapist and be capable of functioning independently in urban and rural environment.
- Provide educational experience that allows hands on experience BOT in hospital as well as in community setting.
- Make maximum efforts to encourage integrated teaching methods.
- Use learner oriented methods which encourage clarity of expression, independence of judgment, scientific habits, problem solving abilities, self-initiated and self-directed learning.
- Use of active methods of learning such as group discussions, seminars, role play, field visits, demonstrations, peer interaction, etc. which would enable to develop personality, communication skills and other qualities which are necessary.
- Shift the role of occupational therapy teachers from merely imparting knowledge to that of a facilitator and motivator of student learning.
- Establish occupational therapy education unit for faculty development, preparation of learning resource materials and for imparting evaluation methods.

Section-III

AIMS AND OBJECTIVES OF BOT COURSE

Aims: The Occupational therapy graduates during training in the Institution should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities, appropriate to general occupational therapy practice involving the prevention, diagnosis and treatment of anomalies and diseases of the human body. The graduate also should understand the concept of community occupational therapy education and be able to participate in the rural health care delivery programs existing in the country.

Objectives: The objectives are dealt under three headings such as knowledge and understanding, skills and attitudes.

Knowledge and understanding: The graduate should acquire the following during the period of training:

- Adequate knowledge of the scientific foundations on which Occupational therapy is based and good understanding of various relevant scientific methods, principles of biological functions and is able to evaluate and analyze scientifically various established facts and data.
- Adequate knowledge of the development, structure, and function of the human system in health and disease and their relationship and effect on general state of health and also bearing on physical and social wellbeing of the patient.
- Adequate knowledge of clinical disciplines and methods which provide coherent picture of anomalies, lesions, and diseases of the human body and preventive, diagnostic, and therapeutic aspects of Occupational therapy practice.
- Adequate clinical experience required for general Occupational therapy practice.
- Adequate knowledge of the constitution, biological and behavior of persons in health and sickness as well as the influence of the natural and social environment of the state of health in so far as it affects Occupational therapy.

Skills: A graduate should be able to demonstrate the following skills necessary for practice of occupational therapy:

- Able to evaluate, diagnose and manage various common Occupational therapy problems encountered in general occupational therapy practice keeping in mind the expectations and the rights of the society to receive the best possible treatment available wherever possible.
- Acquire the skill to prevent and manage complication if encountered while carrying out various surgical and other procedures.
- Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
- Promote overall health (fitness) and prevent diseases whenever possible.
- Competent in the control of pain and anxiety during Occupational therapy treatment

Attitudes: A graduate should develop during the training period the following attitudes:

- Willingness to apply the current knowledge of Occupational therapy in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Seek to improve awareness and provide possible solutions for overall health problems and needs of the community.
- Willingness to participate in the Department of Occupational therapy Education (DOTE) programs to update the knowledge and professional skills from time to time.
- To participate implementation of the national health programs.

Section-IV

REGULATIONS GOVERNING BOT DEGREE COURSE

Eligibility: A candidate seeking admission to first year BOT course should have passed Pre-University examination of Karnataka Pre-University Board with English as one of the subjects and Physics, Chemistry and Biology or should have passed any other examination conducted by Boards/Councils/ Intermediate examination established by State/Central Governments or equivalent studies within India or abroad, with English as one of the subjects and Physics, Chemistry and Biology. The candidate should have completed 17 years of age on or before 31st day of December of the year of admission. The selection of students to the occupational therapy course shall be based on:

- i) A Candidate must have passed in the qualifying examination individually in the subjects of Physics, Chemistry, Biology and English obtaining not less than 40% marks taken together and should also have scored 40% marks in English language.
- ii) The candidate must appear for KLE UGAIET competitive entrance examination and must have come in the merit list by securing not less than 40% marks in Physics, Chemistry and Biology taken together.

Duration of the Course: Every student shall undergo a period of certified study extending over 4 academic years from the date of commencement of his/her study for the subject comprising the occupational therapy curriculum to the date of completion of the examination followed by six months compulsory rotatory internship.

Intake - Intake for Bachelors of Occupational Therapy will be 40.

Academic terms: All candidates admitted beyond the last date stipulated by the University shall have to appear for first professional examination after completion of the prescribed duration.

Attendance: Every candidate should have attendance not less than 75% of total classes conducted in theory and practical in each calendar year calculated from the date of commencement of the term to the last

working day as notified by the University, in each of the subjects prescribed to be eligible to appear for the University examination. A candidate lacking in the prescribed attendance and progress in any subjects in theory or practical/clinical shall not be permitted to appear for the University examination in those subjects.

Internal assessment: It shall be based on regular evaluation of periodic tests of assignments, clinical presentations, theory & practical test. There should be a minimum of at least 3 sessional examinations and the average of all three internal marks should be sent to the University before the University examination as per notification. Proper record should be maintained for all students & should be available for scrutiny. The marks of periodical tests should be displayed on the student notice board.

Schedule of Examination: There will be two examinations in a year, i) an annual examination and ii) a supplementary examination to be conducted as per notification issued by the University from time to time. The particulars of subjects for various examinations and distribution of marks are shown separately in tables V TO VIII.

Eligibility to be appointed as an examiner for theory and practical examinations - A faculty with valid PG degree from a recognized university shall be appointed as an examiner in relevant subject. He / She shall not be over the age of 65 Years.

Paper-setter / Moderator

A faculty with valid PG degree from a recognized university shall be appointed as an examiner in relevant subject. He / She shall not be over the age of 65 Years.

Eligibility for Examination: To be eligible to appear for University examination a candidate:

- a) Should have undergone satisfactorily the approved course of study in the subject or subjects for the prescribed duration.

- b) Should have attended at least 75% of the total number of classes in theory and practical jointly to become eligible to appear for examination in those subject/subjects.
- c) Should secure at least **35%** of total marks assigned for internal assessment in particular subject in order to be eligible to appear in the University examination of that subject.
- d) Who fails in any other subject/subjects of first year BOT, has to put one academic term before he/she becomes eligible to appear for the next examination.
- e) Should secure at least 35% of total marks in college exam in subjects for which university exam not recommended
- f) Shall fulfill any other requirement that may be prescribed by the University from time to time.

Criteria for Pass: For declaration of pass in any subject in the university examination, a candidate should pass BOT in Theory & Practical examinations components separately as stipulated below:

- a) For a pass in theory a candidate shall secure not less than 50% marks in aggregate i.e., marks obtained in written examination and internal assessment (theory) added together.
- b) For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination, viva-voce examination and internal assessment (practical) added together.
- c) A candidate not securing 50% marks in theory and practical examination in a subject shall be declared to have failed in that subject and is required to appear for BOT theory and practical, again in the subsequent examination in the subject.

Declaration of class:

- a) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with distinction.
- b) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 60% of marks or more but less than 75% of grand total marks

prescribed will be declared to have passed the examination in First class.

- c) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 50% of marks or more but less than 60% of grand total marks prescribed will be declared to have passed the examination in Second class.
- d) A candidate passing the University examination in more than one attempt shall be placed in pass class irrespective of the percentage of marks secured by him/her in the examination.

[Please note fraction of marks should not be rounded off for causes (a), (b) and (c)]

Grading structure: This will be as shown below taking into account that the pass mark for all subjects is 50% grade point average (GPA) under the GPA, the following letter grades & their grade point equivalent are used

Letter Grade	Grade Point	Percentage Mark
A⁺	4.00	$90 \leq x < 100$
A		$80 \leq x < 90$
A⁻		$70 \leq x < 80$
B⁺	3.00	$65 \leq x < 70$
B		$60 \leq x < 65$
C	2.00	$50 \leq x < 60$
F	0	$x \leq 50$

Carry over: A candidate who has failed in their respective year university examination can carry over a maximum of two subjects to their next year, but will have to pass the subjects in the subsidiary examination before writing the examination of the next academic year

Internship: There shall be six months of rotatory structured Internship after the final examination for candidate declared to have passed the examination in all the subjects. Internship should be done in a teaching hospital recognized by the university. No candidate shall be awarded degree certificate without successfully completing six months internship. The internship should be rotatory and cover all clinical branches

concerned with occupational therapy. End of the posting oral evaluation will be done.

Project work: Interns has to take up a project work in the internship period. The project work shall be termed as Short Project. The protocol approval shall be obtained in the 1st month of Internship; data shall be collected in the next 3 months after the approval of the protocol and project shall be submitted at the mid of 6th month. Submission of article to the journal shall be completed by end of 6th month. The written text of the project shall be of minimum 50 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") times new Roman, 12 font and bound properly. Spiral binding should be avoided. The intern shall provide plagiarism declaration in his/her project. The guide, head of the institution shall certify the written text of the project. Three copies of project work thus prepared shall be submitted to the head of the institution. The completion certificate of internship will be issued only after completing the research project.

Section- V

SUBJECTS AND TEACHING SCHEDULE

**Table I: FIRST YEAR BACHELOR OF OCCUPATIONAL THERAPY
(I B.O.T)**

Subject code	Name of the subject	Teaching hours		
		Theory	Practical	Total
OT 1101	Human Anatomy	120	100	220
OT 1102	Human Physiology	120	100	220
OT 1103	Human Biochemistry	50	-	50
OT 1104	Fundamentals in Occupational Therapy	140	210	350
OT 1105	Occupational Therapy Diagnostics – I	140	200	340
OT 1106	Part-A Psychology Part-B Sociology	50 50	-	100
OT 1107	Language A. English* B. Kannada*	25 25		50
OT 1108	NSS *	60	40	100
OT 1109	Clinical Education and Training	-	200	200
TOTAL		780	850	1630

*No University examination

Section- VI

Table V: SCHEME OF EXAMINATION FOR I B.O.TH

Sl. No.	Subject	Theory			Practical			Grand Total
		Written		Internal Assessment	Practical	Viva Voce	Internal Assessment	
		Time	Maximum Marks	Maximum Marks	Maximum marks	Maximum marks	Maximum marks	
1	Human Anatomy	3hours	80	20	50	30	20	200
2	Human Physiology	3hours	80	20	50	30	20	200
3	Human Biochemistry	3hours	80	20	-	-	-	100
4	Fundamentals in Occupational Therapy	3hours	80	20	50	30	20	200
5	Occupational Therapy Diagnostics- I	3hours	80	20	50	30	20	200
6	Part-A Psychology Part-B Sociology	3hours	40 40	10 10	-	-	-	100
7	Language A. English* B.Kannada*	2hours	-	25 25	-	-	-	50
8	*NSS	2hours	-	50	-	-	-	50

* No University Examination

GUIDELINES FOR UNIVERSITY THEORY EXAMINATIONS

Type of Questions	Marks	
	For 80 marks Paper	For 40 marks Paper
Multiple choice question	20(twenty question of one marks)	10(ten question of one marks)
Long Essay Question	20(2questions x10)	10(1question s x10)
Short Essay Type	20 (4 questions X 5)	10 (2questions x 5)
Very short answer questions	20(10questions x2)	10(5Questions x2)
Total	80	40
Duration	3Hours	1Hours and 30 minutes

GUIDELINES FOR UNIVERSITY PRACTICAL EXAMINATIONS

Anatomy

Type of Questions	Marks
Gross anatomy Spotter (2)	20
Gross anatomy Practical (1)	15
Surface anatomy (1)	05
Histology spotter	10
Total	50
Viva Voice	30
Duration	8Hours
Students allotted	20/day

Physiology

Type of Questions	Marks
Lab Experiment 1	25
Lab Experiment 2	25
Total	50
Viva Voice	30
Duration	8 Hours
Students allotted	20/day

Fundamentals in Occupational Therapy

Type of Questions	Marks
Lab Experiment 1(Long)	20
Lab Experiment 2(Short)	15
Lab Experiment 3(Short)	15
Total	50
Viva Voice	30
Duration	8Hours
Students allotted	20/day

Occupational Therapy Diagnostics- I

Type of Questions	Marks
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Lab Experiment 1(Long)	20
Lab Experiment 2(Short)	15
Lab Experiment 3(Short)	15
Total	50
Viva Voice	30
Duration	8Hours
Students allotted	20/day

Evaluation system	Double evaluation
Examiners	1 internal and 1 external Criteria - Post graduate in relevant subject.

Maximum Duration to complete the course = Double the duration of course. If a candidate fails to complete the course in that period then he/she have to reregister.

Maximum Number of attempts = 10

INSTITUTIONAL EXAMS

These below mentioned subjects will have institutional exams only; candidate has to pass these subjects before filling up the examination form.

Subject code	Subject	Theory	
		Written	
		Time	Maximum Marks
OT 1107	Language A. English	2hours	25
	B. Kannada		25
OT 1108	NSS	2hours	50
OT 1116	Constitution of India	2hours	50
OT 1117	Environmental studies & Disaster management	2hours	50

Section-VII- A

FIRST YEAR BOT (SUBJECTS AND COURSE CONTENTS)

HUMAN ANATOMY (SUBJECT CODE: OT 1101)

Teaching Hours: 220 hours (Theory: 120 hours and Practical: 100hours)

Maximum Marks: 200 (Theory: 100 and Practical & Viva - voce 100)

Assessment: Written, Oral and Practical, Internal and University examination.

Internal Examination: 20 marks Theory and 20 mark Practical.

University Examination: 80 marks Theory, and 40 marks Practical and Viva – voce

Objectives: The objectives are to develop an understanding about various integral parts of human body, their structure, function and location with reference to the surface anatomy with an emphasis on musculoskeletal, nervous and cardio respiratory systems.

Note: Long question and MCQs should be asked only from "Must Know" and Short Essay and Short Answers from "Must Know" and "Good to Know".
80% of Questions in the university exam will be included from must know content 15% from desirable to know and 5% from nice to know

Theory Contents

1. General anatomy

- Introduction to anatomy, terms and terminology
- Regions of body, cavities and systems outline
- Cell structure and function of cell organelles (brief outline only)
- Connective tissue & its modification, tendons, membranes, special connective tissue
- Bone structure, blood supply, growth, ossification, and classification
- Muscle classification, structure and functional aspect
- Nerve – structure, classification, microscopy with examples
- Neurons, classification with examples
- Simple reflex arc
- Parts of a typical spinal nerve/dermatome
- Joints – classification, structures of joints, movements, range, limiting factors, stability, blood supply, nerve supply, dislocations and applied anatomy
- Circulatory system – major arteries and veins of the body, structure of blood vessels
- Lymphoid system – circulation, function, lymphoid organs- and their structure & functions

2. Upper extremity

- Bony architecture
- Joints – structure, range of movement
- Muscles – origin, insertion, actions, nerve supply
- Major nerves – course, branches and implications of nerve injuries

- Radiographic identification of bone and joints

3. Lower extremity

- Bony architecture
- Joints – structure, range of movement
- Muscles – origin, insertion, actions, nerve supply
- Major nerves – course, branches and implications of nerve injuries
- Radiographic identification of bone and joints

4. Spine

- Back muscles - superficial layer, deep muscles of back, their origin, insertion, action and nerve supply
- Vertebral column – structure & development, structure & joints of vertebra
- Radiographic identification of bone and joints

5. Thorax

- Thoracic cage
- Pleural cavities & pleura
- Lungs and respiratory tree
- Heart and great vessels
- Diaphragm

6. Head and neck

- Cranium
- Facial Muscles
- Central nervous system – disposition, parts and functions
- Cerebrum
- Cerebellum
- Midbrain & brain stem
- Blood supply & anatomy of brain
- Spinal cord- anatomy, blood supply, nerve pathways
- Pyramidal, extra pyramidal system
- Thalamus, hypothalamus
- Ventricles of brain, CSF circulation
- Development of nervous system & defects (brief description)
- Cranial nerves – special emphasis on V, VII, X, XI, XII (course, distribution and palsies)
- Sympathetic nervous system, its parts and components (brief description)
- Parasympathetic nervous system (brief description).

7. Miscellaneous

- Histology: cells, tissues of the various organs of the body, epithelium, connective tissues, and blood vessels and lymphoid tissue
- Embryology in brief covering Neuro-musculo-skeletal developmental aspects
- Endocrine - system – pituitary, thyroid, parathyroid (brief description)
- Special senses (brief description): nerve receptors, eye, ear, labyrinth

- Abdomen and pelvis (brief descriptions only):
- Muscles of abdominal wall, pelvic floor, innervations
- Bony pelvis
- Digestive system (liver & pancreas, alimentary canal)
- Urinary system – kidney, ureter, bladder, urethra
- Genital system – male and female

Practical Contents

1.

Topics for dissection

- Upper extremity, lower extremity, head & neck, brain and spinal cord, thorax and abdomen.
- Surface anatomy of all the above

2.

Practical demonstrations

- Histology- identifying the bone, cartilage, all connective tissues, blood vessels, nervous system cells
- Embryology- models, charts & x-rays

3.

Demonstrations (in a cadaver)

- All muscles of the whole body.
- Organs in thorax and abdomen
- All joints with periarticular structures
- Points of palpation of peripheral nerves and blood vessels of upper and lower limbs
- Brain parts and spinal cord

4.

Identification of body prominences on inspection and by palpation especially of extremities

Suggested Readings

1. Standring Susan: Gray's Anatomy – The Anatomical Basis of Clinical Practice. 39th Ed, Elsevier Churchill Livingstone, London, 2005.
2. Anne MR, Dalley AF: Grant's Anatomy. 11th Ed, Lippincott Williams, Baltimore, 2005.
3. Snell RS: Clinical Anatomy for Medical Students. 7th Ed, Little Brown Publishers, Boston, 1995.
4. Derek F: Anatomy – Palpation & Surface Markings, Butterworth Heinman, London, 1997.
5. Romanes GJ: Cunningham Manual of Practical Anatomy. Vol I, II, III, 15th Ed, Oxford Medical Publication, Oxford, 1986 (Reprinted with corrections 2002).
6. Chaurasia BD: Human Anatomy – Regional and Anatomy – Dissection & Clinical. 4th Ed, Vol I, II, III, CBS Publications & Distributors, New Delhi, 2004.
7. Faruqi NA: Handbook of Osteology. 1st Ed, CBS Publications & Distributors, New Delhi, 2007.
8. Inderbir Singh: Text Book of Human Histology. 4th Ed, Jaypee Brothers, New Delhi, 2002.

9. Inderbir Singh: Text Book of Human Embryology. 6th Ed, McMillan India Ltd, New Delhi, 1996.
10. Sinnatamby SC: Last's Anatomy – Regional & Applied. 10th Ed, Churchill Livingstone, Edinburgh, 1999.

HUMAN PHYSIOLOGY (SUBJECT CODE: OT 1102)

Teaching Hours: 220 hours (Theory: 120 hours and Practical: 100hours)

Maximum Marks: 200 (Theory: 100 and Practical and viva-voce: 100)

Assessment: Written, Oral and Practical, Internal and University examinations

Internal Examination: 20 marks Theory and 20 marks Practical

University Examination: 80 marks Theory, 80 marks Practical and Viva – voce

Objectives: The objectives are to develop thorough understanding of the Physiological functions of the various systems of human including exercise and work physiology in relation to physical therapy with major emphasis on Cardio-Respiratory, Musculo-skeletal and Nervous Systems body; and the clinical application of various physiological functions.

Note: Long question and MCQs should be asked only from "Must Know" and Short Essay and Short Answers from "Must Know" and "Good to Know".

80% of Questions in the university exam will be included from must know content 15% from desirable to know and 5% from nice to know

Theory Contents

1) GENERAL PHYSIOLOGY

03 Hours

- Structure of cell membrane
- Functional morphology of cell
- Cell organelles
- Transport across cell membrane
- Homeostasis

2) BLOOD

10 Hours

- R.B.C- Erythropoeisis and functions
- Anaemia- Definition and Classification
- WBC- types and functions
- Platelets - functions
- Haemoglobin - types & functions
- Immunity- definition, classification & mechanism of humoral & cell mediated immunity
- Haemostasis - Intrinsic & extrinsic mechanism, applied aspects (purpura & haemophilia)
- Blood groups, mismatched transfusion reactions

3) NERVE MUSCLE PHYSIOLOGY

08 Hours

- Nerve cell - Structure
- Genesis of Resting membrane potential & Action potential & its ionic basis
- Classification & properties of nerve fibers

- Concept of nerve injury & Wallerian degeneration
- Neuromuscular junction, structure, events occurring during transmission, drugs affecting neuromuscular junction. Applied: Myasthenia Gravis
- Skeletal muscle - Properties, Excitation-contraction coupling and Molecular basis of muscle contraction Electrical & mechanical properties
- Definition of isotonic & isometric contraction with examples

4) CARDIOVASCULAR SYSTEM

10 Hours

- Physiological anatomy
- Properties of cardiac muscle
- Conduction & spread of cardiac impulse
- Heart sounds – Types & causes
- Cardiac cycle – Phases & Events
- Cardiac output – Definition & regulation
- ECG – definition, normal waves
- Blood pressure – Definition & regulation
- Shock – Definition & classification
- Special features of coronary circulation

5) RESPIRATORY SYSTEM

10 Hours

- Physiological Anatomy
- Mechanism of respiration
- Surfactant- Composition and functions
- Compliance- definition, normal values and functions
- Dead space- definition, normal values and functions
- Lung volumes and capacities- Definition and normal values
- Oxygen & carbon dioxide transport
- Neural regulation of respiration- Name of centers and functions
- Chemical regulation of respiration
- Definition & Types – Hypoxia
- Definition - Asphyxia, Hypo & Hypercapnia, Cyanosis
- Acclimatization, Deep Sea diving
- Artificial respiration

6) DIGESTIVE SYSTEM

08 Hours

- Saliva- composition and functions
- Gastric secretions- composition, mechanism of secretion and its regulation, functions
- Pancreatic Secretions- composition and functions
- Intestinal secretions- composition and functions
- Functions of Liver
- Bile- composition and functions
- Jaundice- definition and types

- Deglutition & Intestinal motility (small & large intestine)

7) RENAL SYSTEM MUST KNOW 8 Hours

- Physiological Anatomy – Types of Nephron & JG apparatus
- Glomerular filtration rate: Definition, normal value, factors affecting it
- Physiology of urinary bladder, Micturition reflex
- Artificial Kidney
- Mechanism of urine formation - Steps **NICE TO KNOW**

8) NERVOUS SYSTEM MUST KNOW 14 Hours

- Organization of CNS & ANS, CSF – circulation & functions
- Synapse - Classification & Properties
- Reflexes - Reflex arc, Classification and Properties of reflexes
- Receptors - Classification
- Sensory Pathways - Dorsal & Anterolateral tracts
- Physiology of pain - Types, Pathway, Modulation, Referred pain
- Motor Pathways- Pyramidal tract, differences between UMN & LMN lesions
- Functions & Applied aspects: Cerebellum, Basal ganglia, Hypothalamus
- Tone and Posture **NICE TO KNOW**

9) EXERCISE PHYSIOLOGY 03 Hours

- Introduction to exercise physiology
- Effects of exercise on neuro-muscular system, cardio-pulmonary system, musculoskeletal system, hormonal system, blood, metabolic functions

10) REPRODUCTIVE SYSTEM 08 Hours

- Physiological anatomy of female and male reproductive organs
- Female reproductive system - Menstrual cycle, Functions of ovary, Action of estrogen and progesterone, Control of secretion of ovarian hormones, Tests for ovulation
- Male reproductive system- Spermatogenesis, Semen
- Contraceptive methods - Classification

11) ENDOCRINOLOGY 10 Hours

- Pituitary hormones- Names and their actions, Applied aspects: Signs and symptoms of Gigantism, Acromegaly and Dwarfism
- Thyroid hormones- Names and their actions, Applied aspects: Signs and symptoms of Myxedema, Cretinism and Grave's disease
- Calcium homeostasis
- Actions of Insulin, Diabetes Mellitus – Signs & Symptoms
- Adrenal hormones- Names and their actions, Applied aspects: Signs and symptoms of Cushing's syndrome and Addison's disease

12) SPECIAL SENSES

08 Hours

- Vision - Physiological Anatomy of eye, Functions of visual receptors, Visual Pathway & Errors of refraction
- Audition - Physiological Anatomy of ear, Functions of different parts of ear
- Taste & Smell - Types & receptors, Pathway

Practical Contents – 80 Hours

1. HEMATOLOGY

- Study of microscope and its uses
- Collection of Blood sample
- Determination of RBC count, WBC count, Differential count, Hemoglobin
- Determination of blood groups, bleeding time, clotting time

2. CLINICAL PRACTICALS

- Clinical examination of Radial Pulse
- Recording of Blood pressure, Effect of posture & exercise on BP
- Clinical examination of
 - Cardio vascular system
 - Respiratory system
 - CNS – Motor & sensory

3. AMPHIBIAN GRAPHS

Skeletal Muscle- Simple muscle twitch, Effect of temperature, Preload and Afterload, Two successive stimuli, Genesis of fatigue, Clonus and tetanus

4. RECOMMENDED DEMONSTRATIONS NICE TO KNOW

Calculation of blood indices, Pulmonary function tests (spirometry), Artificial respiration, Normal ECG interpretation, Ergography & work done

Suggested Readings [Latest Editions]

TEXTBOOKS

- Guyton AC, Hall JE: Textbook of Medical Physiology, W.B.Saunders, Philadelphia.
- Jain A. K: Text book of Medical Physiology, Avichal Publishing Company.
- Toratora GJ & Grabowski RS: Principles of Anatomy and Physiology, Harper Collins College Publishers, USA.
- Sembulingam K & Sembulingam P: Essentials of Medical Physiology, Jaypee Brothers, New Delhi.
- Chaudhuri: Concise Medical Physiology, New Central Book Agency, Kolkata.

PRACTICAL MANUAL

- Jain A. K: Manual of Practical Physiology, Arya Publications.

HUMAN BIOCHEMISTRY (SUBJECT CODE: OT 1103)

Teaching Hours: 100 hours (Theory: 100 hours)

Maximum Marks: 100 (Theory: 100)

Assessment: Written, Internal and University examinations

Internal Examination: 20 marks Theory

University Examination: 80 marks Theory

Objectives: The objective is to enable the student to understand biochemical basis of life sciences.

Note: Long question and MCQs should be asked only from "Must Know" and Short Essay and Short Answers from "Must Know" and "Good to Know".

80% of Questions in the university exam will be included from must know content 15% from desirable to know and 5% from nice to know

Theory Contents

MUST KNOW

1. Cell Biology [2 Hours]

- Introduction, Cell structure, Cell membrane structure and function, various types of absorption.
- Intracellular organelles and their functions

2. Nutrition [7 Hours]

- Introduction, Calorific values,
- Respiratory quotient – Definition, and its significance
- Energy requirement of a person -
- Basal metabolic rate: Definition, Normal values, factors affecting BMR
- Special dynamic action of food
- Physical activities - Energy expenditure for various activities.
- Calculation of energy requirement of a person
- Balanced diet
- Recommended dietary allowances
- Role of carbohydrates in diet: Digestible carbohydrates and dietary fibers
- Role of lipids in diet
- Role of proteins in diet: Quality of proteins - Biological value, net protein utilization, Nutritional aspects of proteins-essential and non-essential amino acids. Nitrogen balance
- Nutritional disorders

3. Carbohydrates [8 Hours]

- Carbohydrates: Definition , Classification
- Physiologically important mono, di and polysaccharides- Glycogen, starch, cellulose
- Mucopolysaccharides – hyaluronic acid, chondroitin sulphate, heparin
- Digestion and absorptions of carbohydrates.
- Glycolysis (aerobic, anaerobic, energetic regulation, kerbs cycle)

- Glycogenesis and Glycogenolysis (their regulation, role of liver and muscle glycogen),
- Gluconeogenesis, Citric acid cycle with its energetics.
- Hormonal regulation of blood sugar level
- Clinical aspects: lactose intolerance, diabetes mellitus, diabetic keto-acidosis, hypoglycemia

4. Proteins [8 Hours]

- Amino Acids Classification based on structure and nutritional importance Optical activity, isoelectric pH, physiologically active peptides
- Proteins - Definition ,Functions ,Classification and Structure ,Denaturation Plasma Proteins and their separation by electrophoresis
- Digestion and absorption of proteins.
- Clinical aspects: PEM, kwashiorkor, marasmus, common protein deficiency disorders
- Enzymes: definition, classification, co-enzymes, factors affecting enzyme activity.

5. Lipids [8 Hours]

- Definition, classifications of lipids and fatty acids, examples and functions of common lipids ,
- Essential fatty acids and their importance
- Lipoproteins: classification, sources, functions
- Digestion and absorption of lipids.
- B-oxidation and its energetics with regulation
- Cholesterol and its importance.
- Clinical aspects: ketone body formation and utilization(outline of pathways)

6. Vitamins [8 Hours]

- Definition,
- Classification
- Chemistry
- Sources
- Requirement
- Functions and Deficiency manifestations of vitamins: A, D, E, K, C
- Thiamin, Riboflavin, Niacin, Pyridoxine, Folic Acid, Cyanocobalamine

7. Minerals [6 Hours]

- Individual minerals: calcium, phosphate, iron, magnesium, fluoride
- Digestion, absorption, transport, excretion, functions, Disorders

8. Hemoglobin, porphyrins and bile pigments [5 Hours]

- Overview
- Haem catabolism
- Clinical aspects: anemias, jaundice, porphyrias and thalasseмииs

9. Immunochemistry (in brief) [1 Hour]

- Immunoglobulins, Classification and functions

10. Homeostasis mechanism [6 Hours]

- General outline of fluid compartments of the body with their water and electrolyte content and osmolality, electrolyte and water balance
- Extra and intra cellular sodium, potassium, buffers, pH, buffer systems

- Acid – base balance (role of lungs and kidneys)
- Clinical aspects: dehydration, diabetes insipidus, acidosis and alkalosis

11. Muscle biochemistry [5 Hours]

- Muscle structure
- Molecular events in muscle contraction
- Connective tissue biochemistry - Collagen, elastin - Structure and associated disorders. Glycoproteins, Proteoglycans (classification & functions)

12. Molecular biology (In brief) [6 Hours]

- Nucleotide and Nucleic acid Chemistry
- Nucleotide composition, functions of free nucleotides in body.
- Nucleic acid (DNA and RNA) chemistry: Difference between DNA and RNA
- Structure of DNA (Watson and Crick model), Functions of DNA.
- Structure and functions of tRNA, rRNA, mRNA.

13. Molecular endocrinology (In brief) [2 Hours]

- Definition, classification of Hormones (Thyroxine & Insulin)

14. Clinical biochemistry [8 Hours]

- Normal levels of blood and urine constituents, Relevance of blood and urine levels of Glucose, Urea, Uric acid, Creatinine, Calcium, Phosphates, pH and Bicarbonate.
- Diagnostic and Therapeutic uses of enzymes
- Liver and renal function Tests

GOOD TO KNOW [15 Hours]

- Glycogen storage disorders (Name of diseases, enzyme deficient and organs involved)
- Fat metabolism in adipose tissue, fatty acid biosynthesis with its regulation and energetics.
- Common hyper lipo- proteinaemias
- Gout, hyperuricemia, peptic ulcers, nutritional disorders of nervous system and cardiovascular system
- Haem biosynthesis
- Determination of immunoglobulins
- Antigens, haptens
- Mechanism of hormone action
- Hormones acting at cell surface and inside the cell, Clinical aspects

NICE TO KNOW [5 Hours]

- Gene therapy
- Hormones & neurotransmitters
- Metabolism of bile pigments
- Molecular genetics

Suggested Readings

1. Murray RK, Garnner K, Mayes PA, Rodwell VW: Harper's Biochemistry. 26th Ed, Appleton & Lange, Connecticut, 1993.
2. Montgomery, Conway, Spector, Chappell: Biochemistry - A Case Oriented Approach. 6th Ed, Mosby Publishers, Missouri, 1996.
3. Devlin TM: Textbook of Biochemistry with clinical correlation. 5th Ed, Wiley-Liss, New York, 2002.

4. Nelson DL, Cox MM: Lehinger Principles of Biochemistry. 4th Ed, W.H.Freeman, New York, 2005.
5. Apps DK, Cohen BB, Steel CM: Biochemistry – A concise textbook for medical students, 5th Ed, ELBS with Bailliere Tindall, London, 1992.
6. Deb AC: Fundamentals of Biochemistry. 8th Ed, New Central Book Agency, Kolkata, 2004.
7. Satyanarayana U, Chakrapani U: Biochemistry. 3rd Ed, Arunabhasen Books & Allied (P) Ltd, Kolkata, 2006.
8. Dandekar SP: Prep manual for Under Graduate Medical Biochemistry. 2nd Ed, Urban & Schwarzenberg P Ltd, New Delhi, 2002.
9. Vasudevan DM, Sreekumari S: Textbook of Biochemistry for Medical Students. 5th Ed, Jaypee Brothers, New Delhi, 2007.
10. Chatterjee MN & Shinde R: Textbook of Biochemistry. 2nd Ed, Jaypee Brothers, New De

FUNDAMENTALS OF OCCUPATIONAL THERAPY (SUBJECT CODE: OT 1104)

Teaching Hours: 350 hours (Theory: 140 hours and Practical: 210 hours)

Maximum Marks: 200 (Theory: 100 and Practical and viva-voce: 100)

Assessment: Written, Oral and Practical, Internal and University examinations

Internal Examination: 20 marks Theory and 20 marks Practical

University Examination: 80 marks Theory, 80 marks Practical and Viva – voce

Objectives: The course introduces the history and development of the profession; it presents theoretical constructs of occupation, purposeful activity and occupational science. It creates an understanding of definition and scope of OT practice in context of occupational science. Provides a generic outline of the domains of concern of OT, standard language and terminologies used for documenting in regards to OT evaluation, assessment, planning discharge and therapeutic applications.

Note: Long question and MCQs should be asked only from “Must Know” and Short Essay and Short Answers from “Must Know” and “Good to Know”.

80% of Questions in the university exam will be included from must know content 15% from desirable to know and 5% from nice to know

Theory

- i. A. HISTORY OF OCCUPATIONAL THERAPY (National & International Perspective)
04 Hours
 - Development of OT during world War Arts & crafts movement Moral treatment, Formation of National society for promotion of OT (NSPOT), Educational standards Publications, Organizations Models and theories
- B. Formation of All India Occupational Therapists Association (AIOTA) & Maharashtra State Council of Occupational Therapy & Physical Therapy : **04 Hours**
 - Development of Occupational Therapy in India, Functions of AIOTA & council

ii. SCOPE OF OCCUPATIONAL THERAPY:

1. Definition and scope of Occupational Therapy : 04 Hours

- Definition of Occupational Therapy and its scope in rehabilitation
- Definition of rehabilitation
- Philosophy of rehabilitation with reference to principles of physical medicine
 - Team interaction models: **04 Hours**
- Rehabilitation team and the role of different team members
- Intra disciplinary , interdisciplinary and multidisciplinary models of interaction

Practical

10 Hours

- Audio-visuals, inter- active sessions.
- Oral presentations on team roles by students, discussions

Theory

10 Hours

3.OCCUPATIONAL SCIENCE

A Theory of Occupation and Occupational Science

- Definition of Occupation
- Forms of Occupation
- Occupation as an evolutionary trait
- Biological, social, Psychological dimensions of Occupation.
- Introduction to Occupational science.
- Linkage between Occupational science and Occupational Therapy.

Practical

10 Hours

- 1 Seminar presentation on Occupational Science

Theory

10 Hours

4. PRINCIPLES AND METHODS OF ASSESSMENT

1.A. Joint Range of **Motion(R.O.M).**

- (Upper Limb, Lower Limb, Spine & TM joints).
- Principles and procedures in joint measurement.
- Definitions of terms in joint measurement.
- Methods of joint measurements. Functional ROM Total Active motion
Indications and Contraindications of recording.

Practical

60 Hours

A. Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio-visual presentations.

- Demonstration
- Patient positioning.
- Identification of surface landmarks for goniometry.
- Goniometric placements.
- Recording measurements with Goniometry. AROM/PROM.
- Assessing functional ROM in tasks. Measuring Fixed Flexion Deformity (FFD) and extension deformity.
- Identification of end feels

B. Reflective writing.

- Case writing with ROM

Theory

5 Hours

1.B Muscle Strength:

- Definition of muscle Power and strength,
- Principles of muscle testing Indications & contraindications of muscle testing. Gross muscle testing in normal and clinical conditions. (muscles of upper extremity & lower extremity) Precautions in manual muscle testing.

Practical

25 hours

1.B Demonstrations, simulated case presentations on models and clinical diagnosis

- Using audio visuals, practice on peers, models & patients under supervision.
- Learn & perform gross muscle testing on normal & patients in upper & lower extremities.
- Identify strength in functional tasks.

Theory

10 Hours

1.C Muscle Tone:

- Definition of tone. Normal Muscle tone Abnormal Muscle tone Muscle tone assessment- Modified Ashworth Scale/Pearson's rating of mild, moderate severe spasticity.

Practical

15 Hours

1.C Demonstration:

- Hands on practice on peers, models or clients under supervision,
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Seminar presentation on control system.
- Evaluation, palpation testing for normal tone and variations in tone under supervision of staff.
- Identification of types of muscle tone in normal and patients (pyramidal, extrapyramidal & lower motor neuron).

Theory

07Hours

1.D Co-ordination

- Definition Characteristics of co-ordinated movements in co-ordination Cerebellar signs Extra pyramidal signs Assessment of co-ordination.

Practical

15Hours

1.D Demonstration:

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Seminar presentation on coordination.
- Tests for cerebellar signs.
- Tests for extra pyramidal signs. Upper body and lower body tests for space, time, and rhythm.

Theory **5 Hours**

1.E Sensation

- Definition. Classification of sensations. Techniques and methods of sensory evaluation.
- Specific sensory testing

Practical **15 Hours**

1.E Demonstration:

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Seminar presentation on sensory receptors, and pathways.
- Tests for superficial sensations and deep sensations under supervision.
- Practical Introduction and procedural learning to sensory kits.

Theory **12 Hours**

1.F Perception

- Types of perceptual deficits- Body scheme, unilateral neglect, spatial relations & position in space and apraxia.
- Definition. Components and description of each. Assessment methods.

Practical **10 Hours**

Demonstration:

- Hands on practice on peers, models or clients under supervision,
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Demonstrations and practice of each component of perception as in uniform terminology.

Theory **10 Hours**

1.G Cognition

- Definition. Evaluation of cognitive Skills- Attention, Orientation, Memory (Immediate, Short term and Long term Memory), problem solving and Executive functions.

Practical **05 Hours**

Demonstration :

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Demonstration and execution of tests on –Memory -3 types. Attention. Orientation.

Theory **08 Hours**

1.H Endurance

- Definition Importance of Endurance in performance. Factors affecting endurance.
- Relation to activity tolerance.

Practical**05 Hours**

Demonstration:

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Demonstration in common tasks, exercises. Discussion with respect to endurance tasks.

Theory**10 Hours****5 HAND FUNCTIONS**

Hand Functions & Evaluation Methods

- Functional anatomy of wrist and hand.
- Types of Hand functions- Prehension Grasp patterns Grip Pinch. In hand manipulation.
- Theoretical aspects of Assessment. Total active motion.
- Functional evaluation of hand.
- Edema assessment methods.

Practical**10 Hours**

Demonstration:

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Demonstration -- Procedural
- Assessments of all above functions and edema. Assessment of in-hand manipulation in any two tasks.
- Total active motion of hand. Practice on peers, models and patients.

Theory**6 THERAPEUTIC EXERCISES**

6.1 Introduction to exercises:

04 Hours

- History
- Definition
- Principles
- Purposes
- Prerequisites
- Precautions
- General indications and contraindications of therapeutic exercises

6.2 Therapeutics of muscle contractions:**02 Hours**

- Types of movements, muscle contractions used in therapeutic exercises.

6.3 Exercise classification:**07 Hours**

- Types of therapeutic exercises
- Progressive Resistive Exercise (PRE).
- Regressive Resistive Exercise (RRE).
- Brief Repetitive Isometric Maximal Exercise (BRIME).

- Indications, Contraindications and precautions in therapeutic milieu.

6.4 Objectives of therapeutic exercises:

07 Hours

- Improve Range of Motion
- Improve Muscle Strength and Power
- Improve General & Muscle Endurance
- Improve Co-ordination
- Reset Soft tissue length.

Practical

15 Hours

Demonstration:

- Hands on practice on peers, models or clients under supervision,
- Interactive sessions following clinical and/or simulated audio-visual presentations.
- Demonstration and Identification of muscle contractions in different types of exercises, correlation of contractions in tasks.

Theory

7. THERAPEUTIC MODALITIES IN OCCUPATIONAL THERAPY

- Media, Methods, Modalities. Activity Analysis.

Definition and description:

04 Hours

Principles of activity analysis in respect to biomechanical:

05 Hours

- sensory motor & socio-cultural aspects. Criteria for selection of an activity.
Adapting & grading activity.

Activity Analysis : Shoulder Wheel Inclined Sanding Bicycle Fret Saw Eating:**08 Hours**

Practical

15 Hours

Demonstration:

- Hands on practice on peers, models or clients under supervision
- Interactive sessions following clinical and/or simulated audio-visual presentations.

Labs/practical for the following activities:

Shoulder Wheel.

Inclined Sanding.

Bicycle Fret Saw.

Eating

BOOKS RECOMMENDED:

1. Willard and Spackman's Occupational Therapy by Elizabeth Blesedel ICrepeau, Ellen S. Cohn, Barbara A. Boyt Schell.
2. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby
3. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins
4. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by Annie Turner, Marg Foster, Sybil E. Johnson. Published by Churchill Livingstone
5. Therapeutic Exercise by John V. Basmajian & Steven L. Wolf. Published by

Williams & Wilkins

6. Therapeutic Exercise, Foundation & Techniques by Carolyn Kisner& Lynn Allen Colby. Published by F. A. Davis Company
7. Muscle Testing & Function by F.P. Kendall
8. Daniel's & Worthingham's Muscle Testing.
9. Measurement of Joint Motion: A guide to goniometry by C.C. Norkin& D. J. White
10. Principle of Exercise Therapy by Dena Gardiner

OCCUPATIONAL THERAPY DIAGNOSIS – I (SUBJECT CODE: OT 1105)

Teaching Hours: 340 hours (Theory: 140 hours and Practical: 200hours)

Maximum Marks: 200 (Theory: 100 and Practical and viva-voce: 100)

Assessment: Written, Oral and Practical, Internal and University examinations

Internal Examination: 20 marks Theory and 20 marks Practical

University Examination: 80 marks Theory, 80 marks Practical and Viva – voce

Objectives: Develops theoretical and practical concepts towards understanding of Occupational Therapy methods and media as diagnostic tools to assess and intervene components of function, provides a generic outline of the domains of concern in Occupational Therapy. It educates the student about the holistic concepts of human development and maturation from birth through adult life for analysis of human performance in terms of activities of daily living, return to work, fitness for work. It develops concepts of splinting and the appropriate selection of material in relation to prescription and fabrication

Theory

1. Uniform terminology in Occupational Therapy

1.A Uniform terminology for Occupational Therapy:

09 Hours

- Guidelines for use of Uniform terminology.
- Occupational performance areas – activities of daily living, work activities and play or leisure activities.
- Occupational performance components – sensory motor component, social and self-management.
- Contextual components

1.B Occupational Performance Model (OPM).Occupational Therapy Practice framework (OTPF)

05 Hours

- Occupational Functioning Model (OFM)
- Description of OPM, OTPF and OFM
- Similarities between the Models and relation with International Classification of Function (ICF)

Practical

10 Hours

- Audio visuals, interactive sessions
- Presentation by groups on each sub component, interactive discussion.
- Identification and application of Models based on simulated and live case presentations.

Theory

2. DIANOSTIC TOOLS IN OCCUPATIONAL THERAPY

2.A Occupational Therapy: Diagnostic & Prognostic Procedures:

06 Hours

- Definition of screening, evaluation and assessment.
- Screening purpose and process

- Types of evaluation Steps in evaluation and assessment.

Practical

08 Hours

- Presentation, audio-visuals and interactive sessions
- Group presentation on each sub topic and interactive discussions.
- Demonstration, screening, evaluation
- Assessment and types of evaluation through simulated or live case presentations.

Theory

3 HUMAN DEVELOPMENT AND MATURATION

3. A Human Development and Maturation:

05 Hours

- Definition & Importance of knowledge base of human development.
- Aspects of human development: Physical, Motor, Sensory, Cognitive, Emotional,
 - Cultural and Social.
- Factors influencing human growth & development: Biological, Environmental and Inherited.

3.B Principles of Maturation:

05 Hours

General principles Anatomic directional principles:

- Cephalo-caudal patterns of development.
- Proximal distal patterns of development.
- Medial lateral patterns of development.
- Mass to specific patterns of development.
- Gross motor to fine motor patterns of development.

Practical

10 Hours

Demonstrations, simulated and live case presentations

Identification of normal and abnormal patterns in live and simulated cases as presented using audio-visuals.

Theory

4. ACTIVITIES OF DAILY LIVING

4.A Evaluation & Gradation of Activities of daily living (ADL).

10 Hours

- Definition & classification of ADL. (BADL & IADL)
- Levels of assist. [dependent to independent]

4.B Introduction and application of ADL scales.

18 Hours

- Theoretical understanding of standardized ADL scales, components and application of
- Functional Independence Measure (FIM)
- Functional Assessment Measure (FAM)
- Assessment of Motor and Process Skills (AMPS)
- Modified Barthel Index.

4.C Compensatory principles in ADL :

10 Hours

- Explaining the principles in ADL related to Weakness
- Low endurance
- Limited ROM
- Incoordination Loss of use of one side of body
- Limited vision
- Decreased sensation

Practical

32 Hours

- Seminar presentations
- Demonstrations on models, peers, patients under supervision, simulated presentations using audio-visuals
- Interactive sessions. Demonstration and use of ADL scales.
- Interpretation of performance with clinical reasoning.
- Identify and classify ADL Apply Barthel index, FIM- FAM, AMPS on normal subjects and clients with limitations in performance component
- Rate level of independence in ADL.

Theory

5. RETURN TO WORK

5.A Definition and Elements of Work:

06 Hours

- Definition of work behaviors
- Work skills
- Work aptitudes
- Physical Demands.

5.B Work assessments :

10 Hours

Functional Capacity Evaluation

- Physical Capacity
- Evaluation Work Capacity
- Evaluation Work evaluation tools
- Work site evaluations
- Situational Assessments Psychometric instruments
- Work Samples- Actual, Simulated, Single trait, Cluster Trait

5.C Product lines

10 Hours

- Work Conditioning ,Work Hardening, Vocational Training.

5.D Job Analysis

06 Hours

- Assessment needs & components in analysis.
- Analysis of- Tailoring. Data entry on computers. Carpentry. Driving.

Practical

50 Hours

- Seminar presentations
- Demonstrations on models, peers, patients under supervision
- Simulated presentations using audio-visuals, interactive sessions
- Group wise presentation of analysis of below jobs Tailoring.
- Data entry on computers. Carpentry. Driving.

Theory

6. TOOLS, EQUIPMENT AND MATERIALS USED IN SPLINT FABRICATION

6.A Files, Pliers, Saws, Chisels, Hammers.

05 Hours

- Types, components
- Therapeutic values and uses of tools Care& Handling of Tools
- Equipment and Materials.

6.B Equipment's

05 Hours

- Fret Saw Bicycle Sewing Machine
- Pronation Supination Wheel

6.C Splinting materials

10 Hours

- Thermoplastics and fabricating materials
- Padding materials
- Harnessing materials
- Securing/fixing materials
- Adhesives etc.

Practical

40 Hours

- Seminar presentations,
- Demonstrations , simulated presentations using audio-visuals, interactive sessions
- Care and handling of tools and equipment.
- Identification of material.
- Therapeutic values related to tools.

Theory

7. INTRODUCTION TO HAND SPLINTING

7.A Definition and Classification of Splints.

10 Hours

- Definition,
- Classification,
- Principles and material used in designing & fabrication of splints, check out of splint.
- Basics of prescription.

7.B Splints

10 Hours

- Finger Gutter
- Resting pan Short opponens
- Dynamic extension outrigger splint
- Radial bar cock up splint

Practical

50 Hours

- Seminar presentations
- Demonstrations on models, under supervision, simulated presentations using audio-visuals, interactive session
- Actual designing and paper pattern of splints- Finger Gutter Resting pan Short opponens
Dynamic extension outrigger splint Radial bar cock

BOOKS RECOMMENDED:

1. Willard and Spackman's Occupational Therapy by Elizabeth Blesedell Crepeau, Ellen S. Cohn, Barbara A. Boyt Schell. Published by Lippincott Williams & Wilkins
2. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby
3. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins
4. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by Annie Turner, Marg Foster, Sybil E. Johnson. Published by Churchill Livingstone
5. Therapeutic Exercise by John V. Basmajian & Steven L. Wolf. Published by Williams & Wilkins
6. Therapeutic Exercise, Foundation & Techniques by Carolyn Kisner & Lynn Allen Colby. Published by F. A. Davis Company
7. Muscle Testing & Function by F.P. Kendall
8. Daniel's & Worthingham's Muscle Testing.
9. Measurement of Joint Motion: A guide to goniometry by C.C. Norkin & D. J. White
10. Principle of Exercise Therapy by Dena Gardiner.

PSYCHOLOGY & SOCIOLOGY (SUBJECT CODE: OT 1106)

Teaching Hours: 100 hours (Theory: 100 hours)

Maximum Marks: Theory: 100

Assessment: Written, Internal and University examinations

Internal Examination: 20 marks Theory

University Examination: 80 marks Theory

Note: This course is to be taught by two teachers (Psychologist & Sociologist / Medical Sociologist).

PSYCHOLOGY (Part-A)

Teaching Hours: 50 hours (Theory: 50 hours)

Maximum Marks: 50 (Theory: 50)

Assessment: Written, Internal and University examinations

Internal Examination: 10 marks Theory

University Examination: 40 marks Theory

Objectives: The objective is to enable the student understand the specific psychological factors and their effects in physical illness thus aid them to have a holistic approach in dealings with their patients during admission, treatment, rehabilitation and discharge.

Note: Long question and MCQs should be asked only from "Must Know" and Short Essay and Short Answers from "Must Know" and "Good to Know".

80% of Questions in the university exam will be included from must know content 15% from desirable to know and 5% from nice to know

Theory Contents

1. Introduction

- What is psychology?
- Fields of application of psychology
- Scope of psychology

2. Learning

- Theories of learning
- Principles of learning
- Factors affecting learning

3. Memory

- Forgetting
- Theories of memory and forgetting
- Methods to improve memory \

4. Intelligence

- Theories of intelligence
- Influence of heredity and environment on the individual
- Tests of intelligence

5. Personality

- Theories of personality
- Factors influencing personality
- Assessments in personality
- Personality disorders

6. Behavior

- Normal and abnormal behavior
- Development and growth of behavior in infancy and childhood, adolescence, adulthood and old age

7. Thinking

- Definition
- Thinking process
- Problem solving
- Decision making
- Creative thinking

8. Motivation

- Theories
- Types of motivation

9. Emotions

- Theories of emotions
- Stress
- Conflicts
- Frustration

10. Attitudes

- Theories
- Attitudes and behavior
- Factors in attitude change

11. Emotional and behavioral disorders of childhood and adolescence (in brief)

- Disorders of under and over controlled behavior
- Eating disorders

12. Mental deficiency

- Mental retardation

- Learning disabilities
- Autistic behavior

13. Anxiety disorders

- Phobias, panic disorder
- Generalized anxiety disorder
- Obsessive compulsive disorder
- Post –traumatic stress disorder

14. Somatoform and dissociate disorders

- Conversion disorder
- Somatization disorder
- Dissociate amnesia & dissociate fugue

15. Patho-physiological disorders

- Stress and health

16. Severe psychological disorders

- Mood disorders
- Psychosis

17. Counseling

- Definition
- Aims and principles
- Quality of a good counselor

18. Psychotherapy

- Brief introduction to paradigms in psychopathology and therapy

19. Communication

- Effective and faulty
- Audiovisual aids and its effects on communication

20. Psychological need of pediatric and geriatric patients

SOCIOLOGY (Part–B)

Teaching Hours: 50 hours (Theory: 50 hours)

Maximum Marks: 50 (Theory: 50)

Assessment: Written, Internal and University examinations

Internal Examination: 10 marks Theory

University Examination: 40 marks Theory

Objectives: The objective is to enable the student understand the basic sociology concepts, principles and social process, social institutions (in relation to the individual, family and community) and the various social factors affecting the family in rural and urban communities in India will be studied.

Theory Contents

1. Introduction

- Meaning-definition and scope of sociology
- Its relation with anthropology, psychology, social psychology and ethics
- Methods of sociology-case study, social survey, questionnaire, interview and opinion poll methods
- Importance of its study with special reference to health care professionals

2. Socialization

- Meaning and nature of socialization
- Primary, secondary, and anticipatory socialization
- Agencies of socialization

3. Social groups

- Concepts of social groups
- Influence of formal and informal groups on health and sickness
- The role of primary groups and secondary groups in the hospital and rehabilitation settings

4. Community

- Rural community – meaning and features – health hazards of rural population
- Urban community – meaning and features – health hazards of urban population

5. Family

- The family - meaning and definition, functions
- Changing family patterns
- Influence of family on the individual health, family, and nutrition
- The effects of sickness on family and psychosomatic disease and their importance to occupational therapy

6. Culture and health

- Concept of culture
- Cultures and behavior

- Cultural meaning of sickness
- Culture and health disorders

7. Social change

- Meaning of social changes & factors of social change
- Human adaptation and social change
- Social change and stress
- Social and deviance
- Social change and health program
- The role of social planning in the improvement of health and in rehabilitation

8. Social security

- Social security and social legislation in relation to the disabled

9. Social worker

- Meaning of social work
- The role of a medical social worker

10. Social Factors in health and disease

- The meaning of social factors
- The role of social factors and illness

11. Social problems of disabled

- Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems
- Population explosion
- Poverty and unemployment
- Beggary
- Juvenile delinquency
- Prostitution
- Alcoholism
- Problems of women in employment

Suggested Readings

Psychology & Sociology

1. Morgan CT, King RA, Weisz JR, Schopler J: Introduction to Psychology. 7th Ed, Tata McGraw Hill, New Delhi, 1993.
2. Munn NL, Farnald LD, Farnald PS: Introduction to Psychology. 3rd Ed, Houghton Mifflin Company, Boston or Oxford & IBH Publishers, New Delhi, 1972.
3. Worchle S, Shebilske W: Principles and Applications - Psychology. 5th Ed, Prentice Hall, Englewood Cliffs, New Jersey, 1994.
4. Nolen HS: Abnormal Psychology. 2nd Ed, McGraw Hill Higher Education, New York, 2001.

5. Cushman LA, Scherer MJ: Psychological Assessment in Medical Rehabilitation. 1st Ed, American Psychological Association, USA, 1995.
6. Bond.J. & Bond.S: Sociology & Health Care – An Introduction for Nurses & other Health Professions. 2nd Ed, Churchill Livingstone, Edinburgh, 1994.
7. Taylor S & Field D: Sociology for Health & Health Care. 4th Ed, Blackwell Publishing, USA, 2007.
8. Shankar Rao CN: Sociology Primary Principles. 3rd Ed, S. Chand & Company Ltd., New Delhi, 2001 (reprint).
9. Bhusan Vidya, Sachdeva.DR: Introduction to Sociology. 3rd Ed, Kitab Mahal, Patna, 2004.
10. Dibyendunarayan B: Sociology for Physiotherapists. 1st Ed, Jaypee Brothers, New Delhi, 2006.

Language a. English b. Kannada (SUBJECT CODE: OT 1107)

(For college examination only)

Teaching Hours: 50 hours (25+25)

Maximum Marks: 50 (Theory: 25+25)

Assessment: Written examination

College Examination: 50 marks Theory

Objectives: The objective is to enable the student to effectively communicate with patient, colleague and professional. The student will also be able to understand and implement the basic communication skills required for personal, hospital, and department management and interpersonal management.

English

Objective: It is designated to help the students to acquire a good command over English language for common and medical terminology used in clinical practice.

Content

- Spoken English and written English training
- Forming Paragraph
- Letter writing
- Note taking
- Description writing
- Essay writing
- Precise writing and abstracting
- Report writing
- Resume writing
- Article writing
- Public Speech, Presentation making

Suggested Readings

1. V. R. Naryana, Sharma Strengthen your writing, New Delhi, Orient Longman
2. Wrinen and Martin Grammer and composition, Delhi, Chand & Co.
3. Shashi kumar V. D'Souza P. V. Spoken English, New Delhi, Tata Mergraw Hill
4. Dorland's pocket Medical dictionary New Delhi, Oxford & IBH Publishing Co.

Kannada

The student should gain knowledge of the local language (kannada) so as to communicate and reciprocate with people in general and patients in particular to impart proper patient care during the course of their study and future.

At the end of the 1st B.O.TH course the student is expected to know the basic of Kannada Language with patients and colleagues. Students must be able to identify and write small words and sentences, acquire communicative skills

Content

- Kannada literatures (letters, word sentences)
- Interaction
- Introducing each other
- Interaction with patients
- Spoken and written Kannada training
- Interacting at vegetable market, cloth shop, picnic and rout
- Conversation between doctor and patient
- Halebidu and Belur
- Lesson reading/newspaper reading
- Act playing in Kannada

Suggested Readings:

1. Lingadevaru Halemane, Kannada Kali 2002 Kannada University.

NSS (SUBJECT CODE: OT 1108)
(For college examination only)

Teaching Hours: 100 hours (50+50)

Maximum Marks: 50 (Theory: 25+25)

Assessment: Written examination

College Examination: 50 marks Theory

Objectives: The objective is to enable the student to effectively communicate with patient, colleague and professional. The student will also be able to understand and implement the basic communication skills required for personal, hospital, and department management and interpersonal management.

Unit 01: Introduction and basic concepts to NSS

- a. History, Philosophy, aims & objectives of NSS
- b. Emblem, flag, motto, song, badged.
- c. Organizational structure, roles and responsibilities of various NSS functionaries.

Unit 02 : NSS programs and activities

- a. Concept of regular activities, special camping, day camps
- b. Basis of adoption of village// slums, Methodology of conducting Survey
- c. Financial pattern of the scheme
- d. Other youth program/schemes of GOI
- e. Coordination with different agencies
- f. Maintenance of the Diary

Unit 03 : Understanding Youth

- a. Definition, Profile of youth, categories of youth
- b. Issues, Challenges and opportunities for youth
- c. Youth as an agent of social change

Unit 04: Community Mobilization

- a. Mapping of community stakeholders
- b. Designing the message in the context of the problem and the culture of the community
- c. Identifying methods of mobilization
- d. Youth-adult partnership

Unit 05: Volunteerism and Shramdan

- a. Indian tradition of volunteerism
- b. Needs & importance of Volunteerism
- c. Motivation and constraints of volunteerism
- d. Shramdan as a part of volunteerism

Unit 6: Importance and role of youth leadership

- a. Meaning and types of leadership
- b. qualities of good leaders traits of leadership
- c. Importance and role of youth leadership.

Unit 7: Life Competencies

- a. Definition and importance of life competencies
- b. Communication
- c. Interpersonal
- d. Problem solving and decision making

Unit 8: Social Harmony and National Integration

- a. India history and culture
- b. Role of youth in peace-building and conflict resolution
- c. Role of youth in nation building

Unit 9: Youth development Programs in India

- a. National Youth Policy
- b. Youth development programs at the National Level, State Level and Voluntary Organizations

Unit 10: Citizenship

- d. Basic features of Constitution of India
- e. Fundamental Rights and Duties
- f. Human rights
- g. Consumer awareness and the legal rights of the consumer
- h. RTI

Unit 11: Family and Society

- a. Concept of family, community,(PRIs and other community-based organization) and society
- b. Growing up in the family – dynamics and impact
- c. Human Values
- d. Gender justice

Unit 12: Health, Hygiene and sanitation

- a. Definition, needs and scope of health education
- b. Food and Nutrition
- c. Safe drinking water, water borne diseases and sanitation (Swachh Bharat Abhiyan)
- d. National health program
- e. Reproductive health

Unit 13: Youth Health

- a. Healthy Lifestyles
- b. HIV AIDS, Drugs and Substance abuse
- c. Home Nursing
- d. First Aid

Unit 14 Youth and yoga

- a. History, philosophy and concept of yoga
- b. Myths and misconceptions about yoga
- c. Different Yoga traditions and their Impacts
- d. Yoga as a preventive promotive and curative method
- e. Yoga as a tool for health life style.

Unit 15: Environment Issues

- a. Environment conservation, enrichment and sustainability
- b. Climate change
- c. Waste management
- d. Natural resource management (rain water harvesting, energy conservation, waste land development, soil conservation and afforestation)

Unit 16: Disaster management

- a. Introduction to disaster management, classification of disasters
- b. Role of youth in disaster management

Unit 17: Project cycle management

- a. Project planning
- b. Project implementation
- c. Project monitoring
- d. Project evaluation: impact assessment

Unit 18: Documentation and reporting

- a. Collection and analysis of data
- b. Preparation of documentation/report
- c. Dissemination of document/reports

Unit 19: Vocational skill Development – Vocational training of at least 2 skills to be conducted.**Unit 20: Entrepreneurship Development**

- a. Definition & Meaning
- b. Qualities of good entrepreneur
- c. Steps / ways in opening an enterprise
- d. Role of financial and support service institutions

Unit 21: Youth Crime

- a. Sociological and Psychological factor influencing youth crime
- b. Peer Mentoring in preventing crimes
- c. Awareness about Anti Ragging
- d. Cyber Crime and its prevention
- e. Juvenile Justice

Unit 22: Civil / self Defense

- a. Civil defense services, aims and objectives of civil defense
- b. Needs for self-defense training

Unit 23:

- a. Writing a project proposal
- b. Establishment of SFUs

Unit 24: Additional Life skills

- a. Positive thinking
- b. Self-confidence and self esteem
- c. Setting life goals and working to achieve them
- d. Management of stress including time management.

Project work– Workshop / Seminars on personality development and improvement of communication.