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**THE TAMIL NADU DR. M.G.R. MEDICAL
UNIVERSITY
CHENNAI – 600 032.**

**SYLLABUS FOR THE BACHELOR OF
OCCUPATIONAL THERAPY DEGREE
COURSE.**

(NON – SEMESTER)

**FROM THE ACADEMIC YEAR
2004 – 2005 ONWARDS.**

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6. REGISTRATION :

A candidate admitted in the Batchelor Occupational Degree Course in any one of the affiliated Institutions of this University shall register his/her name in the prescribed application form for registration duly filled in along with the Prescribed Fee and a Declaration in the format, (as in Annexure) to the Academic Officer of this University through the affiliated Institution with in 60 days from the Cut-off date prescribed for the course for admission.

(31st S.A.B. held on 29-06-2006)

7. MIGRATION / TRANSFER OF CANDIDATES :

- a) A student studying in a Occupational Therapy College can be allowed migrate / transfer to another Occupational Therapy College under same or another University.
- b) The University concerned can allow the migration / transfer within three months after passing the 1st B.O.T. Degree course examinations, as a rule.
- c) Migration / Transfer of students during the course of their training for the clinical subjects shall be avoided.
- d) The number of students migrating / transferring from one college to another college during one year will be kept to the minimum so that the training of the regular students of that college is not adversely affected. The number of students migrating /transferring to / from any one college should not exceed the limit of 5% of its intake subject to a maximum of 5 students in any one Occupational Therapy Colleges in one year.

In the cases of Migration / Transfer in U.G. courses which are not covered by Council Regulations and under extra-ordinary circumstances, the Vice-Chancellor shall have the powers to place any Migration/Transfer, he/she deems fit in the Governing Council and get its approval/ratification for grant of permission for Migration/Transfer to the candidate undergoing course of study in affiliated Institutions of this University.

**** 31st S.A.B. held on 29-06-06**

8. COMMENCEMENT OF THE COURSE :

The course shall commence from 1st August of the year academic year.

9. MEDIUM OF INSTRUCTION :

English shall be the medium of instruction for all the subjects of study of the B.O.T. Degree course.

10. DURATION OF THE COURSE :

The duration of certified study for the B.O.T. course shall extend over a period of 4 (four) academic years and six months of Compulsory Internship. The candidate should complete academic study in 8 years from the date of joining.

11. RE-ADMISSION AFTER BREAK OF STUDY :

The regulations for re-admission are as per the University Common Regulations for Re-admission after break of study for all courses. (As approved by the Standing Academic Board in its XXVI Meeting held on 29-06-2006.

12. CURRICULUM :

The Curriculum and the syllabus for the course shall be as prescribed in this regulation and are subject to modifications by the Standing Academic Board from time to time.

13. SUBJECTS OF STUDY :

FIRST YEAR SUBJECTS

1. GENERAL PSYCHOLOGY / SOCIOLOGY
2. ANATOMY.
3. PHYSIOLOGY.
4. BASIC O.T AND THERAPEUTIC ACTIVITIES.

SECOND YEAR SUBJECTS

1. MICROBIOLOGY AND PATHOLOGY .
2. MEDICINE, PHARMACOLOGY, SURGERY, E.N.T., OPHTHALMOLOGY AND PAEDIATRICS .
3. BIOMECHANICS, APPLIED ANATOMY, APPLIED PHYSIOLOGY, BIO-ENGINEERING.
4. CLINICAL ORTHOPAEDICS, RADIO DIAGNOSTICS.
5. CLINICAL NEUROLOGY.

THIRD YEAR SUBJECTS

1. COMMUNITY MEDICINE, BASIC NURSING AND FIRST AID.
2. HEALTH PSYCHOLOGY, CLINICAL PSYCHOLOGY AND PSYCHIATRY
3. O.T. in PSYCHIATRY.
4. O.T. in ORTHOPAEDICS AND NEUROLOGY.
5. O.T. in PAEDIATRICS.

FOURTH YEAR SUBJECTS

1. O.T. IN ORGANIZATION AND ADMINISTRATION & WORK STUDY
2. O.T. IN REHABILITATION.
3. GROUP PROCESS.
4. REHABILITATION MEDICINE.
5. CARDIO RESPIRATORY AND WORK PHYSIOLOGY
6. PROJECT
RESEARCH METHODOLOGY AND BIOSTATISTICS.

✓ 14. WORKING DAYS IN THE ACADEMIC YEAR :

Each academic year shall consist of not less than 240 working days.

15. VACATION :

The Heads of Institutions shall declare 6 (six) weeks vacation in an academic year to the students. The period(s) of vacation can be decided by the Head of the Institution.

16. INTERNAL ASSESSMENT :

- a. A minimum of three / four written examinations shall be conducted in each subject during an academic year and the average marks of three best performance, shall be taken into consideration for award of Internal Assessment marks.

- b. A minimum of two practical examinations shall be conducted in each subject (wherever practicals have been included in the curriculum) during the year and an average of the two performance, shall be taken into consideration for award of Internal Assessment marks.
- c. A failed candidate in any subject should be provided an opportunity to improve his/her Internal Assessment marks by conducting a minimum of two examinations in theory and practical separately and the average may be considered for improvement.
- d. The Internal Assessment marks (both in written and practical taken together) should be submitted to the University endorsed by the Head of the Institution 15 days prior to the commencement of the theory Examinations.

** The Internal Assessment should consist of the following points for evaluation:-

- i) Theory
- ii) Practical / Clinical
- iii) Viva

The uniform dates for submission of Internal Assessment Marks are as follows:

The aggregate of Final Internal Assessment Marks submitted on or before 10th July / 10th January as per scheme of examination shall be taken by the University as Internal Assessment Marks and a minimum of 35% of marks is mandatory for permitting the candidates to University Examination.

For the subjects of one year duration:

At the end of January, April & June for 100 Marks and the aggregate of final internal assessment marks on or before 10th July.

** XXX S.A.B. Meeting held on 28-12-2005.

17. CUT- OFF DATE FOR ADMISSION TO EXAMINATION :

- (i) 30th September of the academic year concerned.
- (ii) The candidates admitted up to 30th September of the academic year shall be registered to take up their 1st year examination during August of the next year.
- (iii) All kinds of admissions shall be completed on or before 30th September of the academic year. There shall not be any admission after 30th September even if seats are vacant.

18. ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATIONS :

- a) No candidate shall be permitted to appear in any one of the parts of B.O.T. Degree Course Examinations, unless he / she has attended the course in the subject for the prescribed period in an affiliated Institution recognized by this University and produces the necessary certificate of study, attendance and progress from the Head of the Institution.
- b) A candidate is required to put in a minimum of 75% of attendance in both theory and practical separately in each subject before admission to the examination.
- c) A candidate lacking in the prescribed attendance and progress in any one subject in theory and practical in the first appearance shall be denied admission to the entire examination.
- d) Failed candidates who are not promoted to the next phase of study are required to put in a minimum 75% of attendance during the extended period of study before appearing for the next examination.
- e) Attendance earned by the students should be displayed on the notice board of the college at the end of every 3 months and a copy of the same should be sent to the University and parents of the students concerned who are lacking minimum attendance.

19. CONDONATION OF LACK OF ATTENDANCE

There shall be no condonation of lack of attendance.

20. SUBMISSION OF LABORATORY RECORD NOTE BOOKS :

At the time of practical examination, each candidate shall submit to the Examiners his/her laboratory note books duly certified by the Head of the Department as a bonafide record of the work done by the candidate (Practical record has to be maintained whenever candidate has practical examination).

The concerned Head of the Department shall evaluate the practical record (Internal Evaluation) and the practical record marks shall be submitted to the University 15 days prior to the commencement of the theory Examinations.

In respect of failed candidates, the marks awarded for record at previous examination will be carried over for the subsequent examination or the candidates shall have the option to improve his performance by submission of fresh records.

21. COMMENCEMENT OF EXAMINATION :

February 1st / August 1st.

Theory examinations not to be held on Saturdays and Sundays. If the date of commencement of the examination falls on public holiday, the next working day will be the date of commencement of examinations.

22 . QUESTION PATTERN IN GENERAL :

The following examination pattern uniformly for the B.O.T., Degree course :-

	<u>Marks</u>
20 MCQs	20 X 1 = 20 Marks
Short Notes	6 X 5 = 30 Marks
2 Essay Questions	2 X 15 = 30 Marks
1 Essay Question	1 X 20 = 20 Marks

	100 Marks

Note: The long essay question for 20 marks shall be one single question or it shall consist of two section A & B.

For other papers having 90 marks 75 marks and 35 marks etc., the question paper pattern and marks shall be distributed proportionately.

The above modification shall take effect from August 2006 examinations onwards.

(XXX S.A.B. Meeting held on 28-12-05)

23. MARKS QUALIFYING FOR PASS

50% of marks in the University Theory examination.

50% of marks in the University Practical examination.

50% of marks in aggregate in Theory, Practical I.A. & Oral taken together.

24. COMPULSORY INTERNSHIP:

The internship should commence within 7 days of date of official receipt of results. Interns can avail 6 days casual leave for complete period of internship (not more than 2 days per month).

Every candidate admitted to Bachelor of Occupational Therapy Degree Course shall undergo Six (6) months of Compulsory Internship in the institution he / she studied after successful completion of the final examination.

If late commence / break is less than 45 days, Principal of the College has authority to regularize the internship.

If the late commencement / break of internship is more than 45 days prior permission should be obtained from the University before commencement of postings.

The University shall award the Degree only after the completion of the Compulsory Internship.

If the candidate has completed 50% of the C.R.I. before break the candidate can complete the remaining period of C.R.I. after getting condonation from the University.

If a candidate fails to complete 50% of the C.R.I. before break he / she has to complete the C.R.I. from the beginning.

25. CARRY-OVER OF FAILED SUBJECTS :

1. Candidate has to Pass all the 4 subjects of 1st Year to transit to 2nd year.
2. Candidate can carry any 2 failed subjects of the second year to the 3rd year.
3. Candidate has to pass all the 5 subjects of 3rd year to transit from 3rd year to 4th year
4. Candidate should pass the course of Bachelor of Occupational Therapy including internship within 8 years from the date of joining.

26. REVALUATION / RETOTALLING OF ANSWER PAPERS

Revaluation of answer papers is not permitted. Only retotalling of theory answer papers is allowed in the failed subjects.

27. AWARD OF MEDALS AND PRIZES :

The University shall award at its Convocation Medals and Prizes to outstanding candidates as and when instituted by the donors as per the prescribed terms and conditions for the award of the same.

28. AWARD OF DEGREE :

The University shall award the Degree only after the completion of the Compulsory Internship.

29. AUTHORITY FOR ISSUE OF INTERNSHIP COMPLETION CERTIFICATE :

The Heads of Institutions shall issue a certificate of successful completion of Internship to each candidate after satisfying that the candidate has completed the training programme and has acquired the skills to function independently.

30. AUTHORITY TO ISSUE TRANSCRIPT OF MARKS :

The University shall be the Authority for issuing Transcript after remitting the prescribed fee

31. SCHEME OF EXAMINATIONS :

The Scheme of Examinations is as follows :-

(Duration Hours :- Dur. Hrs.; Sessional Marks :- Sec. Marks.

University Marks :- Univ. Marks.)

AREAS OF INTERSHIP (ONE MONTH EACH)

PAEDIATRICS

ORTHOPAEDICS / RHEUMATOLOGY / HAND

NEUROLOGY

BURN/PLASTIC SURGERY / CARDIO RESPIRATORY

PSYCHIATRY

C.B.R. (COMMUNITY BASED REHABILITATION)

[illegible]

10.	Three	Community Medicine, Basic Nursing and First Aid.	55 40	Examination	50	100	Nil	Nil	150
11.	Three	Health Psychology, Clinical Psychology, Psychiatry.	35 35 35	Examination	50	100	Nil	Nil	150
12.	Three	O.T. in Psychiatry	75 + 400	Examination	50	100	75	25	250
13.	Three	O.T. in Ortho. and Neuro.	90 + 400	Examination	50	100	75	25	250
14.	Three	OT in Paediatrics.	80 + 400	Examination	50	100	75	25	250
15.	Four	OT in Organisation & Administration & Work Study	60	Examination	50	100	Nil	Nil	150
16.	Four	O.T. in Rehabilitation	85 + 400	Examination	50	100	75	25	250
17.	Four	Group process.	40 + 40	Examination	50	50	Nil	Nil	100
18.	Four	Rehabilitation Medicine.	55	Examination	50	100	Nil	Nil	150
19.	Four	Cardio Respiratory and Work Physiology.	100	Examination	50	100	Nil	50	150
20.	Four	Project Research Methodology & Bio-Statistics (Minimum Pass Mark for Project 50).	170 30	Examination (Viva)	50	Nil	Nil	50	100

ANNEXURE - 1

DECLARATION

I.....

Son of / Daughter of.....Residing

at.....and admitted to in 1

year of(Name of the course/U.G./P.G.) at

.....(Name of the college) do

hereby solemnly affirm and sincerely state as follows:

I declare that I shall abide by the rules and regulations prescribed by the
 Tamil Nadu Dr.M.G.R. Medical University, Chennai for the
(course) including regulations for re-admission after the
 break of study.

Date:

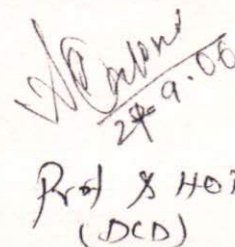
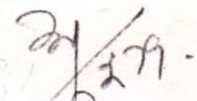
Signature of candidate.

/Counter signed/

Dean / Principal / Director

(Office date seal)



Sl. No	Year	Subject	Instruction Hours	Examination/ Non Examination	Sess Mrks.	Theory	Practicals	Orals	Total
15	Three	OT in Paediatrics	80	Examination	50	100	75	25	250
16	Three	Research Methodology and Biostatistics	30	Non Examination	Nil	Nil	Nil	Nil	Nil
17	Four	OT in Organisation & Administration & Work Study	60	Examination	50	100	Nil	Nil	150
18	Four	OT in Rehabilitation	85	Examination	50	100	75	25	250
19	Four	Group process	40	Examination	50	50	Nil	Nil	100
20	Four	Rehabilitation Medicine	55	Examination	50	100	Nil	Nil	150
21	Four	Cardio Respiratory and Work Physician	100	Examination	50	100	Nil	50	150
22	Four	Project	170	Examination (Viva)	50	Nil	Nil	50	100

Clinical Hours - 1900

Internship - 1150

Total Hours - 3050

GENERAL PSYCHOLOGY

Examination at the end of 1st year

Instruction hours: 55

COURSE DESCRIPTION

This course will enable the student to understand specific psychological factors and effects in physical illness and thus help them to have a holistic approach in their dealings with patients during admission, treatment, rehabilitation, and discharge.

COURSE OBJECTIVES

The objective of this course is that after 55 hours of lectures, the student will be able to recognize and help with the psychological factors involved in disability, pain, disfigurement, unconscious patients, chronic diseases, death, bereavement and medical – surgical patients / conditions. They should also understand the elementary principles of behaviour for applying in the therapeutic environment.

In addition the student will be able to fulfil the following objectives of the course.

Psychosocial assessment of patients in various developmental stages.

Explain the concept of stress and its relationship to health, stress and one's profession.

Identify ego defence mechanisms and learn counselling techniques to help those in need.

Help them to understand the reasons of non-compliance in patients and improve compliance behaviour.

A. DEFINITION OF PSYCHOLOGY

1. Definition of psychology, basic information in relation to following schools, methods and branches.

- a. Schools: Structuralism, functionalism, behaviourism, psychoanalysis, gestalt psychology.
- b. Methods: Introspection, observation, inventory and experimental method.
- c. Branches: General, child, social, abnormal, industrial, clinical, counselling, education.

B. HEREDITY AND ENVIRONMENT

Twins, Relative importance of heredity and environment, their role in relation to physical characteristics, intelligence and personality, nature-nurture controversy.

C. DEVELOPMENTAL THEORIES AND GROWTH BEHAVIOUR at

Infancy, Early childhood, Middle childhood, Puberty (physiological and psychological changes), adulthood, middle age, and old age.

D. INTELLIGENCE

Definitions: IQ, Mental Age, List of various intelligence tests – WAIS, WISC, Bhatia's performance test, Raven's Progressive Matrices test.

E. MOTIVATION

Definitions: Motive, drive, incentive, and reinforcement. Basic information about primary needs: hunger, thirst, sleep, elimination activity, air, avoidance of pain, attitude to sex.

Psychological needs: Information, security, self - esteem, competence, love and hope.

F. EMOTIONS

Definition. Differentiate from feelings, physiological changes of emotion. Role of RAS, hypothalamus, cerebral cortex, sympathetic nervous system, adrenal gland, heredity and emotion, and control of anger, fear and anxiety.

G. PERSONALITY:

1. Definition, list the components: Physical characteristics, abilities, temperament interest, and attitudes.
2. Discuss briefly the role of heredity, nervous system, physical characteristics, abilities, family, and culture on personality development.
3. Basic concepts of Freud: Unconscious, conscious, id, ego, and superego. List and define the oral, anal, and phallic stages of personality development. List and define the 8 stages as proposed by Erickson. 4 concepts of learning as proposed by Dullard and Miller; drive, cue, response and reinforcement.
4. Personality assessment; interview, standardised, non- standardised, exhaustive and stress interviews, list and define inventories BAL, CPI and MMPI. Projective tests: Rorschach TAT and sentence completion test.

H. LEARNING

List the laws of learning as proposed by Thorndike. Types of learning: Briefly describe, classical conditioning, operant conditioning, insight, observation and Trial and Error type.

List the affective ways to learn: Massed Vs. Spaced, Whole Vs. Part, Recitation Vs. Reading, Serial Vs. Free recall, Knowledge of results, Association, Organization, Mnemonic methods, Incidental Vs Intentional learning, role of language.

I. THINKING

Definition, concepts, creativity, steps in creative thinking; list the traits of creative people, delusions

J. FRUSTRATION

Definition sources, solution, conflict; Approach - approach, avoidance-avoidance, and approach -- avoidance, solution

K. SENSATION, ATTENTION, AND PERCEPTION

1. List the senses: Vision, Hearing, Olfactory, Gustatory and cutaneous sensation, movement, equilibrium and visceral sense. Define attention and list factors that determine attention; nature of stimulus, intensity, colour, change, extensity, repetition, movement, size, curiosity, primary motives.

2. Define perception and list the principles of perception : Figure ground, constancy, similarity proximity, closure, continuity, values and interest, past experience context, needs, moods, religion, sex and age, perceived susceptibility, perceived seriousness, perceived benefits, and socio-economic status.

3. Define illusion and hallucination.

4. List visual, auditory, cutaneous, gustatory, and olfactory hallucination.

L. DEMOCRATIC AND AUTHORITARIAN LEADERS:-

Qualities of leadership: Physieal factors, intelligence, self-confidence, sociability, will and dominance. Define attitude, change of attitude by: Additional information, changes in-group affiliation, enforced modification by law and procedures that affect personality. (Psychotherapy, Counselling and religious conversion).

M. DEFENCE MECHANISMS OF THE ECO

Denial rationalization, projection, reaction formation, identification, repression, emotions, insulation, undoing, introjection, acting out, depersonalization.

EVALUATION :

Internal - Theory

University -Theory

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SOCIOLOGY

Examination at the end of 1st year

Instruction hours : 50

COURSE DESCRIPTION

This course will introduce to the students the basic sociological 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.

COURSE OBJECTIVES

The objective of this course is that after 50 hours of lectures the student will be able to demonstrate an understanding of the role of socio-cultural factors as determinants of health and behaviour in health and sickness. They will be able to relate this to therapeutic situations in the practice of physiotherapy and occupational therapy.

In addition the student will be able to fulfil the following objectives of the course.

- A. Understand the role of family and community in the development of human behaviour.
- B. Develop a holistic outlook toward the structure of the society and community resources.
- C. Identify the subtle influence of culture in the development of human personality, the role of beliefs and value as determinants of individual and group behaviour.
- D. Understand the social and economic aspect of community that influence the health of the people.
- E. Learn to assess the social problem and participate in social planning.
- F. Identify Social Institution and resources.
- G. Understand the significance of social interaction in the process of rehabilitation.
- H. Appreciate the role of therapist as a member of society and the interdependence of individuals and society.

COURSE OUTLINE

A. INTRODUCTION

Definitions of sociology, sociology as a science of society, uses of the study of sociology, application of knowledge of sociology in physiotherapy and occupational therapy.

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B. SOCIOLOGY AND HEALTH

Social factors affecting health status, social consciousness and perception of illness, social consciousness and meaning of illness, decision making in taking treatment. Institutions of health, their role in the improvement of the health of the people.

C. SOCIALIZATION

Meaning of socialization, influence of social factors on personality, socialization in hospitals, socialization in the rehabilitation of patients.

D. SOCIAL GROUPS

Concept 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.

D. FAMILY

Influence of family on human personality, discussion of changes in the functions of a family, influence of the family on the individual's health, family and nutrition, the effects of sickness on family, family and psychosomatic disease.

F. COMMUNITY

Concept of community, role of rural and urban communities in public health, role of community in determining beliefs, practices and home remedies in treatment.

G. CULTURE

Components of culture, impact of culture on human behaviour, cultural meaning of sickness, response of sickness & choice of treatment (role of culture as social consciousness in moulding the perception of reality) Culture induced symptoms and disease, sub-culture of medical workers.

G. CASTE SYSTEM

Features of the modern caste system and its trends

I. SOCIAL CHANGE

Meaning of social change, factors of social change, human adaption and social change, social change and stress, social change and deviance, social change and

health programmes. The role of social planning in the improvement of health and in rehabilitation.

J. SOCIAL CONTROL

Meaning of social control, role of norms, folkways, customs, morals, religion law and other means of social control in the regulation of human behaviour, social deviance and disease.

K. SOCIAL PROBLEMS OF THE 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

L. SOCIAL SECURITY

Social security and social legislation in relation to the disabled.

M. SOCIAL WORKER

The role of a medical social worker

EVALUATION :

Internal	-	Theory
University	-	Theory

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ANATOMY

Examination at the end of: 1st Year

Instruction hrs: 200

COURSE DESCRIPTION

The study of Anatomy will include identification of all gross anatomical structures. Particular emphasis will be placed on description of bones, joints, muscles, the brain, Cardio pulmonary and nervous systems, as these are related to the application of physiotherapy and occupational therapy in patients.

COURSE OBJECTIVES

The objectives of this course is that after 200 hours of lectures, demonstrations, and practicals, the student will be able to demonstrate knowledge in human anatomy as needed for the study and practice of physiotherapy and occupational therapy.

In addition, the student will be able to fulfil the following objectives of the course.

A. INTRODUCTION

1. Define Anatomy and mention its subdivisions.
2. Name regions, cavities and systems of the body.
3. Define anatomical positions and anatomical terms.

B. CELL

1. Define a cell.
2. Mention the shape, size and parts of a cell.
3. Name and give functions of organs. Names of cell bodies.
4. Define chromosomes, genes.
5. Review mitosis and meiosis. Mention the main events, but stages not necessary.

C. TISSUES

1. Classify tissues.
2. Classify and mention the microscopic structure, types of tissues such as epithelial, connective, muscular and nervous tissue. Gives examples for each type of tissue.

D. CARDIO - VASCULAR SYSTEM

1. a. Comprehend the external and internal features of heart and their implications.
b. Mention position of the heart.
c. Identify the name the chamber of the heart, surface and border of the heart.
d. Identify the venae cavae, pulmonary trunk and aorta.
e. Mention the internal features of the chambers of the heart.
2. a. State the basic features of the blood supply & nerve supply of the heart.
b. State the basic arrangement of the pericardium.
c. Identify the coronary artery and coronary sinus.
d. Name the parts of the conductive system of heart.
3. a. Mention the position and general distribution of major arteries and major veins, and name their main branches.
b. Name the type of arteries and veins, give examples and indicate a basic microscopic structure of type of blood vessels.

LYMPHATIC SYSTEM

1. Comprehend the general and regional arrangements of the lymphatic system.
2. Name the lymphatic organ and mention their location.
3. Illustrate the basic structural features of lymphatic vessels, lymphnodes, thymus, spleen and tonsils.
4. Assign functional role to the lymphatic system.
5. State the position and immediate relations of spleen.

E. RESPIRATORY SYSTEM

1. a. List the parts of the respiratory system.
b. Comprehend the functional anatomy of the parts of the respiratory system.
c. Mention the basic features of innervation of bronchi and lungs.
2. a. State the position, extent, and gross and microscopic structure of the parietal pleura.
b. Comprehend the arrangement of pleura. Mention the parts, and position of the parietal pleura.
c. Name the recesses of pleura.
d. Identify the trachea and bronchi.
e. Identify the right lung and left lung.

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- f. Name the components of the hilum of lung.
 - g. Name the bronchopulmonary segments.
 - h. Illustrate the main features of the microscopic structure of lung.
 - i. Identify the borders and surfaces of the lung on the specimen.

F. DIGESTIVE SYSTEM (n. b. no details are required)

1.
 - a. List the parts of the digestive system.
 - b. Mention the boundaries and features of the mouth.
 - c. Classify teeth.
 - d. Mention position, extent, subdivision, communications, internal features and muscles of pharynx.
 - e. Name the tonsils and define fauces.
 - f. Identify internal features of the mouth and pharynx of specimen.
2.
 - a. State the position, course and extent of oesophagus.
 - b. Identify oesophagus of the specimen.
 - c. State the basic nerve supply.
3.
 - a. Mention the position and gross structure of the stomach.
 - b. Identify the stomach and its borders, the surfaces and subdivisions.
 - c. Enumerate the immediate relations of the stomach.
 - d. State the basic nerve supply of the stomach.
4.
 - a. Name the subdivision of the intestine and mention their positions.
 - b. Mention the difference between small and large intestine.
5.
 - a. Name the arteries arising from the abdominal aorta. Name the organs supplied by these branches.
 - b. Awareness of the name and position of the principal autonomic visceral nerve plexus in the abdomen and pelvis, and the organs supplied by them.
6. Mention the position and gross features of the liver and biliary system.
7. Name the position and subdivision of the pancreas.
8.
 - a. Name the major salivary gland.
 - b. Indicate their positions.
 - c. Mention the site of the opening of their ducts.

G. GENITO - URINARY SYSTEM (n. b. no details are required)

1.
 - a. Comprehend the basic functional implication and the basic structure of the kidney and ureter.
 - b. Mention the position, size and shape of kidney.

- c. Name the immediate relations of the kidney.
 - d. Indicate the cortex, medulla, pyramids, sinus, calyces, and pelvis of ureter in a macro section of the kidney.
 - e. Illustrate the structure of a nephron.
 - f. Identify the ureter and indicate the position of the ureter.
2.
 - a. State the anatomy of the bladder and urethra.
 - b. Mention the position, shape and size and surface of the bladder.
 - c. Indicate the immediate relations of the bladder.
 - d. Mention the basic innervation of the bladder.
 - e. Name and identify the subdivision the male urethra.
 - f. Mention the position, extent and immediate relations of the male urethra.
 - g. Locate and identify the female urethra.
 - h. Mention the position, extent and immediate relations of the female urethra.
 - i. Name the sphincters of the urethra.
3.
 - a. List and locate the parts of the male reproductive system. State the anatomy and functional considerations of the testis, male accessory organs of reproduction and external organs.
 - b. Name the constituent structures of the spermatic cord.
 - c. Mention the position of the inguinal canal.
 - d. Name the component structures and parts of the penis.
4.
 - a. List and locate the parts of female reproductive system. State the anatomy and functional considerations of ovary, uterine tubes, uterus, vagina and female external genitalia.
 - b. Mention the basic features of parts of the female external genitalia.
 - c. Enumerate the factors responsible for the maintenance of the position of the uterus and anatomy of its prolapse.
 - d. Mention the position, extent and gross structure of the female breast.
6. Name the common, internal, and external iliac arteries.

NERVOUS SYSTEM

1)

- a) Define the subdivisions of the nervous system. Define central, peripheral and autonomic nervous systems and name their subdivisions.
Comprehend the position and form of the spinal cord, its structure and function in terms of neuronal connections
- b) Indicate the position and extent of the spinal cord.
- c) Illustrate the principal features shown in a transverse section of the spinal cord.
- d) Specify the basic features of a mono and multisynaptic spinal reflex pathway.

- e) Illustrate the white and gray matter, and anterior, lateral and posterior columns of the spinal cord.
- f) Mention the origin, termination and position of important ascending and descending tracts, site of crossing of fibres of these tracts, and function of each tract.
- g) State the main consequences of spinal cord transection and hemi section, and explain the rationale of cordotomy.
- h) Indicate the blood supply and meninges of spinal cord.

2)

- a) Name the subdivision of the brain. Identify and mention the external features of parts of the brain.
- b) Mention the internal structure and basic features of parts of the brain – stem and name the nuclei and fibre tract with special emphasis on cranial nerve nuclei.
- c) Identify and mention parts of the cerebellum.
- d) Mention the external features and internal structures of the cerebellum and name its various afferent and efferent tracts and their termination.
- e) Mention the features of the gross component of the cerebrum.
- f) Mention & Identify the location of gyri, sulci, and cortical areas.
- g) State and identify association, commissural and projection fibres.
- h) Define and identify component of forebrain, including cerebral cortex, insula, olfactory bulb, olfactory tract, uncus, fornix, basal ganglia, thalamus, hypothalamus, internal capsule, corpus callosum etc.
- i) Predict the result of damage to internal capsule.
- j) Outline sensory and motor pathways and be able to trace these pathways.
- k) Name sensory and motor nerve endings with function.
- l) Define pyramidal motor system and name its tracts
- m) Define upper and lower motor neurons.
- n) Name the parts and tracts of the extra pyramidal system and indicate the functions.

3) Outline the basic structure of sensory organs:- Nose, tongue, eye, ear and skin.

4) Briefly outline the nature and basis of muscle tone.

Mention the anatomical pathway involved in the production and maintenance of muscle tone.

5)

- a) State the formation, circulation and drainage of CSF.
- b) Locate & identify the ventricles.
- c) Identify and name the meninges and space around and locate the cistern.
- d) Define lumbar puncture and cisternal puncture.
- e) State the features of the meninges.
- f) Recognise the difference between extra dural, sub dural and Subarachnoid haemorrhage.

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6)

-) Outline the arrangement of major blood vessels around the brain and spinal cord.
-) Mention the arteries forming the Circle of Willis.
-) Name the branches of major arteries supplying the brain and spinal cord and mention the parts of brain they supply.
-) Predict the result of blockage or rupture of central deep branches.
-) Predict the result of occlusion of cerebral arteries.
-) Predict the result of occlusion of vertebral or basilar arteries.
-) Identify and mention the connection of dural venous sinuses.
-) Name and identify the parts of the limbic system. Mention their function in emotion and behaviour.

7)

-) Mention the position and structure of the autonomic nervous system.
-) Mention the site of origin and termination of the preganglionic and postganglionic sympathetic and parasympathetic fibres.
-) Name and locate the sympathetic and parasympathetic ganglia.
-) Summarise the functional difference between the sympathetic and parasympathetic system.

8)

- g) Enumerate the cranial nerves in serial order.
- g) Mention the nuclei of origin & termination and indicate the site of attachment to brain /brain stem.
- g) Explain the general distribution of the cranial nerves and the course of the VIIIth nerve.
- g) Predict the result of injury to cranial nerves.

9)

- (c) Anatomy of spinal cord – review.
- (c) Name the group of spinal nerves.
- (c) Explain the formation and branches of the spinal nerves and distribution of anterior and posterior rami.
- (c) Locate & name the plexuses of nerves.
- (c) Indicate the course and distribution of branches of the plexuses & nerves.

J. ENDOCRINE SYSTEM

- 0. List the endocrine organs and mention their position.
- 0. Mention the hormone produced by each endocrine organ.

INTRODUCTION TO BONES (Osteology)

1) Define skeleton.

- a) Mention the subdivisions of the skeleton. Name the bones in each subdivision. Know the number of bone in each subdivision and total number of bones.
 - b) Classify the bones and give examples.
 - c) Enumerate the common surface feature of bones.
 - d) Define ossification. Explain the types of ossification and give examples. Define ossification centre. Explain the growth of long bone in length and width.
- 2) When regional anatomy is taught:
- a) Identify, name and correctly orientate the bone.
 - b) Identify surface, border and all other surface features.
1. Mark and indicate the muscular and ligamentous attachments on the bone.

INTRODUCTION TO JOINTS (Arthrology)

1)

- a) Define a joint or articulation.
- b) Classify the joints and give examples for each type. Define each type of joint.
- c) Mention the basic features of a synovial joint.
- d) Define the axis, & movements possible in a synovial joint.
- e) Define range of movement and limiting factor.
- f) Indicate the blood supply and nerve supply in general.
- g) Define stability of a joint.
- h) Demonstrate common movements.

2. When regional anatomy is taught:-

- a) Mention the type, the articular surface, ligament, movement, axis of movement. Chief muscles producing the movement, limiting factors and nerve supply and blood supply of all individual joints.
- b) Mention the factors for stability.
- c) Articulate the bones correctly.
- d) Indicate applied anatomy for all joints.

M. INTRODUCTION TO MUSCLES (SKELETAL MUSCLE) (Myology)

- a) Define a skeletal muscle.
- b) Define faciae, tendon aponeurosis.
- c) Classify the skeletal muscles by shape etc. and give examples.
- d) Define origin, insertion, muscle work (contraction), types of muscle work, range of muscle work, group action – protagonist, antagonist, synergist and fixator; shunt and spurt muscle, type of levers with examples.

Shoulder girdle:

- Comprehend and apply the function, the main features of joints of the shoulder girdle.
- Name the joints of shoulder girdle. Identify the articular surfaces and name the ligaments and movements of sternoclavicular and acromioclavicular joints.

Mention the type of the joints.

- Demonstrate and name the movement of scapula. Mention the chief muscles producing these movements.

Correlate movement of scapula.

- Assign functional role of the articular disc and sternoclavicular joint and coracoclavicular ligament.

Shoulder joint.

Mention the type, articular surface and ligaments of the shoulder joint.

Define and demonstrate the movements of shoulder joint.

Name and identify the chief muscles producing these movements. Analyse these movements and mention limiting factors.

Mention the blood supply and nerve supply of this joint.

Analyse the associate movement of scapula and movement of the shoulder joint.

Mention the limiting factors and the factors for its stability. Indicate applied anatomy.

Upper arm:

Name and identify the muscles at the front and back of the upper arm.

Name and identify the ends, borders, surfaces and features of the humerus. Identify the head anatomical neck, tuberosities, surgical neck, bicipital groove, condyle, capitellum, trochlea, epicondyles, radial, coronoid and olecranon fossa.

Mention the origin, insertion, nerve supply and action of muscles of the front and back of upper arm.

Indicate the course, relation and distribution of radial and musculo-cutaneous nerves.

Elbow joint:

Mention the type, articular surface and ligaments of elbow joint.

Define and demonstrate the movement possible and name the chief muscles producing this movement.

Mention the factors for stability and limiting factors.

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Shoulder girdle:

- a) Comprehend and apply the function, the main features of joints of the shoulder girdle.
- b) Name the joints of shoulder girdle. Identify the articular surfaces and name the ligaments and movements of sternoclavicular and acromioclavicular joints.

Mention the type of the joints.

- c) Demonstrate and name the movement of scapula. Mention the chief muscles producing these movements.

Correlate movement of scapula.

- d) Assign functional role of the articular disc and sternoclavicular joint and coracoclavicular ligament.

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Define and demonstrate the movements of shoulder joint.

Name and identify the chief muscles producing these movements. Analyse these movements and mention limiting factors.

Mention the blood supply and nerve supply of this joint.

Analyse the associate movement of scapula and movement of the shoulder joint.

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Mention the origin, insertion, nerve supply and action of muscles of the front and back of upper arm.

Indicate the course, relation and distribution of radial and musculo-cutaneous nerves.

Elbow joint:

Mention the type, articular surface and ligaments of elbow joint.

Define and demonstrate the movement possible and name the chief muscles producing this movement.

Mention the factors for stability and limiting factors.

Indicate the applied anatomy.
 Mention the applied anatomy.
 Explain the carrying angle.

Forearm, wrist and hand:

Mention the bones of forearms, Identify the ends, borders, surface and features of radius and ulna.

Identify the head, neck, tuberosity and styloid process of radius, identify the coronoid process, olecranon process, trochlear notch, tuberosity, head and styloid process of ulna. Also the radial notch of ulna and ulnar notch of radius.

Name and identify the carpal bones, metacarpal bones and phalanges in an articulated hand.

Identify the muscles of front and back of the forearm.

Mention the position, insertion, nerve supply and action of these muscles.

Indicate the course, relations and distribution of median, ulnar and radial nerves.

Mention the type, articular surface and ligaments of radioulnar joints. Define the movement of supination and pronation. Mention the axis and muscles producing these movements. Analyse these movements and apply its functional role in routine day to day actions.

Mention the position and distribution of ulnar and radial arteries and ulnar, median and radial nerves.

Name and locate the carpal bones. Mention the type, articular surface and ligaments of wrist joint.

Define and demonstrate the movements and mention the muscles producing them.
 Mention the blood supply and nerve supply.

Mention the visible tendons around the wrist and their synovial sheaths.

Predict the results of paralysis of muscles of the forearm.

Mention the functional implications of prehension in the structure of hand.

Indicate the arrangements of tendons of the digits, retinaculae, fibrous flexor sheaths, and synovial sheaths.

Evaluate the hinge type of interphalangeal joints, ellipsoid type of metacarpophalangeal joints and saddle type of carpometacarpal joint.

Name and identify the small muscles of the hand. Mention their position, origin, insertion, nerve supply and action.

Mention the types of bones forming and ligaments of the joints of the hand. Define the movements and the muscles producing these movements. Predict the results of paralysis of the small muscles of hand.

Demonstrate the types of grip.

Nerves of upper limb:

Comprehend and apply the knowledge of the position and distribution of blood vessels and lymph nodes.

Mention the root value of the nerves.

Identify the nerves and mentions the positions course, relations and distribution of nerves of upper limb.

Predict the result of injury to these nerves.

Blood vessels of upper limb:

Comprehend and apply the knowledge of the position and distribution of blood vessels and lymph nodes.

Trace the main arteries and veins.

Indicate their position and name the main branches of tributaries.

Name and locate the lymph nodes.

Cutaneous Nerves of upper limb:

Name the cutaneous nerves and illustrate the area of their distribution.

Illustrate the dermatome.

B. LOWER EXTREMITY

I.

- a) a. Name, identification and orientation of hip bone, femur, tibia, fibula and patella.
- b) Identify the component and features of hip bones. Identify the ends, borders, surfaces, head, neck, trochanters, condyles and epicondyles of femur and the features of the tibia and fibula.
- c) Identify and mention the origin, insertion, nerve supply and action of the muscles in the front of thigh.
- d) Mention the boundaries and contents of femoral triangle and subsartorial canal.
- e) Indicate the position, course and distribution of femoral nerve.
- f) Indicate the course and main branches of femoral artery and mention the blood supply of neck of femur.
- g) Indicate the position of femoral vein.

Medical side of thigh:

Name and identify the muscles of the medial side of thigh. Mention their origin, insertion, nerve supply and action.

Indicate the course, relations and distribution of obturator nerve.

Back of thigh:

Identify and mention the position, origin, insertion, nerve supply and action of the hamstring muscles.

Indicate the position, course, relation and distribution of sciatic nerve.

Gluteal region:

Identify and mention the position, origin, insertion, nerve supply and action of the muscles.

Name and mention the position and course of the nerves found there and name the arteries there.

Hip joint:

Mention the type, articular surface and ligaments.

Define the movement and name the chief muscles producing the movements.

Mention the blood supply, nerve supply, factor for stability and limiting factors.

Indicate applied anatomy.

Knee joint:

Mention the type, articular surfaces and ligaments.

Define the movement and name the chief muscles for the movements.

Analyse the movements.

Know the blood supply and nerve supply.

Indicate applied anatomy.

Define locking and unlocking of the joint.

Popliteal fossa:

Indicate the boundaries and contents.

Mention the position and branches of tibial and common peroneal nerves.

Front of leg and dorsum of foot:

Name and identify the tarsal bones, metatarsal bones and phalanges in an articulated foot.

Name and identify the muscles.

Mention the positions, origin, insertion, nerve supply and action of the muscles.

Position and distribution of deep peroneal nerve.

Indicate the position and attachment of extensor retinaculæ.

Mention and identify the features of the tibia and fibula.

9. Lateral Side of leg:

Name and identify the muscles.

Mention the position, origin, insertion, nerve supply and action of muscles.

State the position, course and distribution of superficial peroneal nerve.

State the position and attachment of peroneal retinacula.

10. Back of leg and sole of foot:

Name and identify the features of the bones of the foot.

Name and identify the muscles of back of leg.

Mention the position, arrangement, origin, insertion, nerve supply and action of the muscles.

State the position course and distribution of tibial artery.

State the position and distribution of posterior tibial artery.

Mention the position, and attachment of flexor retinaculum.

Mention the arrangement, origin, insertion, nerve supply and action of muscles of the foot.

Indicate the type of formation, and factors for the maintenance of the arch of foot.

Mention the type, articulate surface, ligaments, movements chief muscles for the movement. Axis of movements and applied anatomy of tibiofibular joints, ankle joints, subtalar – joints, M.P. joints and I.P. joints.

Palpate and identify the tendons around the ankle and dorsum of foot.

11. Nerves:

- a. Indicate the position, formation and branches of lumbar and sacral plexuses.
- b. Mention the root value of the nerves.
- c. Mention the position, course, relation and distribution of the nerves.
- d. Predict the result of injury to the nerves.
- e. Illustrate cutaneous innervation of dermatomes.

12. Blood vessels:

Indicate the position of arteries and their main branches.

Indicate the position of veins and their main tributaries.

Indicate the position of lymph nodes.

P. TRUNK – THORAX – ABDOMEN

Vertebral column:

State the basic osteology of vertebral column.

Identify the parts of a typical vertebra. Identify and state the main features of typical vertebra of each group of vertebrae. Identify a typical vertebrae.

State the form, structure and movements of joints of vertebral column. Mention the movements and the muscles production them.

Identify the intervertebral disc and mention] its parts.

State the formation and ligaments of the intervertebral joints.

Name and identify the curvatures of the vertebral column and indicate deformities.

State the contents of vertebral canal.

THORAX:

State the main features of the bones and joints of thoracic cage. Mention the boundaries.

State the parts and features of sternum.

Defines true, false and floating ribs. Mentions the parts of features of typical rib. Know the main features of a typical rib.

Mention the type and formation of the joint between rib and vertebra, between costal cartilage and sternum, and between costal cartilages.

Mention the type and formation of the joint between rib and vertebra, between costal cartilage and sternum, and between costal cartilages.

Mention the type and formation of joint between parts of sternum. Indicate the importance of sternal angle.

Analyse pump handle and bucket handle movement of ribs.

Palpate bony landmarks such as jugular notch, sternal angle, xiphisternum and spine of thoracic vertebrae.

2. Describe intercostal space and list the contents.

Mention the course and branches of typical intercostal nerve. Name the muscles of thorax. Mention the origin insertion, nerve supply and action of intercostal muscles and diaphragm.

3. a. Define the boundaries, and subdivision of the mediastinum and list the contents. Identify the contents.

State the feature of thoracic parts of sympathetic trunk.

Abdomen:

1.

Mention the main features of lumbar vertebra, sacrum and coccyx.

Mention the formation and subdivision of bony pelvis. List the features of the female bony pelvis and their role.

Mention the type, articular surface, ligaments and movements of the joints of pelvis.

2. a. Define abdominal cavity.

List the layers of anterior abdominal wall. Name and mention the origin, insertion, nerve supply and action of the muscles, and the features of these muscles.

Explain the formation of rectus sheath and list its contents.

Define inguinal canal and know its position, extent, formation and contents. Indicate its clinical importance. Define inguinal hernia.

Name and identify the muscles of posterior abdominal wall. Give their origin, insertion, and action. List the organ on the posterior abdominal wall. Name the blood vessels on the posterior wall.

Mention the position and formation of lumbar plexus. Name its branches.

State the anatomy of lumbar region. Understand the disposition of muscles of the layers. Mention the arrangement of lumbar fascia identify the muscles in lumbar region. Understand the lumbar roots to abdomen. Identify and mention the attachment and action of the large muscles of back. (at least the ones ending caudally).

Distinguish abdominal cavity and peritoneal cavity.

Mention the features of lumbar part of sympathetic trunk and other sympathetic ganglia.

Mention the branches and distribution of the abdominal aorta and iliac arteries.

State the inferior vena cava and iliac veins and mention their tributaries.

PELVIS:

State the main features of subdivision, boundaries, walls and floor of pelvis.

Mention the features of the pubic symphysis and sacroiliac joints.

Distinguish and mention major difference between the male and female pelvis.

Identify the muscles of the pelvic floor and mention their attachments, actions and nerve supply.

Mention the structure of the urogenital diaphragm.

HEAD AND NECK

Musculo skeletal and neurovascular features. Identify the anterior and posterior triangles of neck. Name the subdivisions. List the contents.

1.

State the main features of the skull and the facial skeleton.

Identify the large skull bones and their parts.

Identify the cranial fossae and hypophyseal fossa.

Identify the internal and external auditory meatuses, foramen magnum and styloid process and name the main structure passing through them.

Identify and name the main muscles of the face. Mention their nerve supply and action.

Predict the result of paralysis to the facial muscles and sequel of injury to the facial nerve. (VII nerve).

Map the cutaneous distribution of the three divisions of the trigeminal (Vth) nerve on the face.

2.

Identify the general feature of a typical cervical vertebra, atlas, axis and seventh cervical vertebra.

Identify the erector spinae, sternocleidomastoid and scalene muscles, glenohumeral. Mention their attachments, actions and nerve supply.

Identify the phrenic, accessory and vagus nerves. Mention their distribution.

Identify and state the position, distribution and root value of the nerves of cervical and brachial plexuses.

Demonstrate the action of sternocleidomastoid.

Mention the type, articular surfaces, Ligaments, movements, and muscles producing these movements, at the atlanto -occipital and atlanto - axial joints. Demonstrate these movements and the movements of the cervical part of vertebral column.

3.

Identify the subclavin, vertebral and carotid arteries. Mentions the position and extent of these arteries.

Identify the components of the Circle of Willis. Mention the distribution of internal and external carotid and vertebral arteries. Predict the sequelae of occlusion of these arteries.

Identify the internal jugular and subclavin veins. Mentions their position, formation and termination.

4.

State the basic organization of the of the autonomic nervous system.

State the sites of craniosacral and thoracolumbar outflows.

Define the mode of the distribution of pre and post -- ganglionic neurons in sympathetic fibres and mention their distribution.

Distinguish between sympathetic and para sympathetic system in relation to their function.

EYE:

State the position of the lacrimal apparatus, the functional, implications of structure of the eye and the lacrimal apparatus.

Name and illustrate the coats, their subdivisions, the refractive media, the chambers of the eye and the optic nerve.

Mention the structure of retina and optic pathway.

Has a basic understanding of the light and accommodation reflex. (omitting the pathway).

Mention the distribution of the three divisions of trigeminal (Vth) nerve.

Name and state the nerve supply and simple actions of the extra ocular muscles.

Predict the result of lesions of 3rd, 4th and 6th cranial nerves.

LARYNX AND TRACHEA

NOSE:

Name the bony component of the nose.

Mention the parts and boundaries of the nose.

State the main features of the nasal cavity.

Name and identify the para nasal air, sinuses and locates their openings.

Temporomandibular joint:

State the type, articular surface, ligaments, possible movements, muscles performing the movements and nerve supply of the temporomandibular joint.

Palpate and identify the joint and its articular surfaces.

Identify and name the muscles of mastication. Mention their actions and nerve supply.

MOUTH:

State the main features of the mouth cavity tongue, Palpate salivary glands, teeth and gums.

Mention the sensory and motor innervation of the tongue.

Identify the salivary glands.

Demonstrate movements of the tongue and palate.

Test and produce the swallowing (gag) reflex.

Predict the sequelae of lesions of the VIIth and XIIth cranial nerves.

PHARYNX:

State the position and extent of the pharynx.

State the three subdivisions and the features of each subdivision.

Name the muscles of pharynx and their action.

Mention the sensory and motor innervation of the pharynx.

LARYNX AND TRACHEA:

1. Identify the hyoid and state its parts.

2. Identify the larynx and name the laryngeal cartilages.

3. State the boundaries of laryngeal inlet and glottis.
4. Identify the vocal and vestibular folds.
5. State the movements of the laryngeal cartilages. Name the laryngeal muscles and mentions their attachments, action and nerve supply.
6. Define the position, extent and gross structure of the trachea.
7. State the mechanics of phonation and speech, production of sound voice and speech.

EAR:

1. State the basic structural plan of the organs of hearing and equilibrium.
2. Mention the three subdivisions of the ear.
3. Mention the nerve endings for hearing and equilibrium.

CRANIAL NERVES:

1. Enumerate the cranial nerves in serial order.
2. Relate interprets the number to the name.
3. Indicate the nuclei of origin of termination.
4. Mention the attachments of the brain and the cranial exit.
5. State the sensory and motor distribution.
6. State the position and course of VII nerve.
7. Predict the sequel of lesion.

EVALUATION

Internal 10 marks for Anatomy record to be included in internals

University -- Theory and Orals.

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PHYSIOLOGY

Examination at the end of : Ist Year

Instruction hours: 100

COURSE DESCRIPTION

This ~~course~~ which runs concurrently with the anatomy course helps the student to understand the basis of normal human physiology with special emphasis on the functioning of the cardiovascular, musculoskeletal and nervous system.

COURSE OBJECTIVES

This objective of this course is that after 100 hours of lectures, demonstrations Lab practicals the student will be able to demonstrate an understanding of elementary human physiology.

The student will be able to fulfil the following objectives of the course.

LECTURE OUTLINES

Hours

A. CELL INTRODUCTION

Outline of basic concept of cell structure, function of components; transport across membranes.

B. SKIN

Structure; functions; blood flow; temperature regulation.

C. BLOOD

1. Outline of components; and their functions; RBC, WBC, platelets, Blood groups.
2. Significance of RBC and WBC counts, ESR and other related tests.
3. Clotting mechanisms;
4. Blood volume and its regulation.

D. CIRCULATION

1. Structure and properties of cardiac muscle; Cardiac cycle.
2. ECG; Heart sounds Cardiac output.
3. Factors regulating the action of the heart.
4. Blood pressure; its maintenance and regulation.
5. Cerebral circulation; Renal circulation; Pulmonary circulation.
6. Effects of exercise; effects of postural changes.
7. Lymph; factors affecting its flow.

E. RESPIRATION

Defence mechanism in the Respiratory tree; mucociliary transport. Mechanics of Respiration.

Transport of blood gases, Acid-base balance.

Lung function tests (including lung volumes). Artificial ventilation.

Nervous and chemical regulation of respiration.

Hypoxia - types and causes.

Effects of exercise on respiration.

F. DIGESTION

1. Digestion in the mouth, stomach and intestine.

2. Bile; Pancreatic secretion.

3. Mechanism of control of secretions and motility.

4. Diet and Nutrition.

G. EXCRETION

1. Structure of the nephron.

2. Formation of urine.

3. Micturation.

H. ENDOCRINES

1. General metabolism, Carbohydrates, protein and fat metabolism.

2. Outline of the various hormones and their actions with special emphasis on Thyroxine and Parathyroid hormone.

I. REPRODUCTION

1. Male reproductive system.

2. Female reproductive system.

3. Outline of pregnancy; functions of placenta; Parturition; lactation, contraceptive measures.

4. Physiology of foetus; factors that affect foetal growth.

J. NERVOUS SYSTEM

Structure of neurones.

Properties of neurones; (excitation and conduction).

Synapse and synaptic transmission; Reflexes and properties of reflexes;

Sensory endings.

Spinal cord; Pathways in the spinal cord.

Brain stem; Thalamus; Basal ganglia, Cerebellum; Cerebral cortex.

Control of posture and control of voluntary motor activity.

K. SPECIAL SENSES

1. Vision.
2. Audition; Olfaction; Gustation; Vestibular apparatus.

L. MUSCLE

1. Structure of muscle tissue: Gross structure and microscopic structure. Arrangement of myofibrils. Myoneural junction.
2. Chemical processes involved in muscle contraction.
3. Physiology of muscle contraction, Single muscle twitch, Quantal Summation, Wave Summation, Tetany, Effects of temperature changes. All or none law, Fatigue, Isotonic, isometric and isokinetic contraction.
4. Exercise metabolism, Oxygen debt, Respiratory quotient.
5. Development of endurance, Factors affecting endurance and muscle strength, Factors affecting general and cardio respiratory endurance, Aerobic and anaerobic work, Efficiency of muscular activity, aerobic versus anaerobic (e.g., speed, work load, fatigue, diet, obesity).
6. Age and exercise, Age changes in muscle function. Age changes in CVS, Age changes in pulmonary function, Age and physical work capacity Age and nervous system.
7. Environment and exercise. Adaption to heat and cold, Exercise in heat and in cold. Human limitation in heat, Acclimatization to heat, Exercise at high altitudes.

PRACTICAL DEMONSTRATIONS

- A. Determination of RBC and WBC count.
- B. Examination of different types of WBC in stained blood smear.
- C. Circulation in the web of the frog's feet.
- D. Ischaemic pain.
- E. & F. Muscle contraction in frog: simple muscle curve, tetany, wave summation, quantal summation, fatigue.
- G. Lung Volume.
- H. Effect of exercise on ventilation.
- I. Physical fitness.
- J. Determination of BP; effect of exercise on BP.
- K. Examination of sensory and motor systems; Examination of superficial and deep reflexes.
- M. Tests of vision (acuity and colour perception) and hearing (Rhine's test and Weber's test).

EVALUATION

Internal : Theory, Orals.

University : Theory, Orals.

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Basic Principles of Occupational Therapy and Therapeutic Activities

Examination at the end of 1st year

Instruction hour:

Theory: 60 hrs.

Practical: 720 hrs.

A. BASIC PRINCIPLES

COURSE DESCRIPTION

This is an introductory course, briefly outlining the purpose and potential of Occupational therapy. The students are exposed to clinical situations to illustrate the classroom teaching, but have no responsibility for patient treatment.

COURSE OBJECTIVES

The objective of this course is that after 780 hours of lectures, demonstrations and practical exposure to clinical work, the student will be able to demonstrate a basic understanding of the scope and aims of occupational therapy, and a practical knowledge of at least five activities used in treatment.

The student will be able to fulfil the following objectives of the course.

1. Describe the history and development of Occupational therapy internationally. Describe the present development of O.T in India, including organization of All India Occupational Therapist's Association.
2. Define Occupational Therapy. Discuss the scope of O.T in a major hospital and in the Community.
3. Describe Occupational therapy's contribution as part of the total rehabilitation team. Briefly outline the roles of the different team members.
4. Briefly explain objectives and media used in O.T. Outline the meaning of "occupation" in relation to treatment objectives for all ages. Outline of Model of Human Occupation.

Define the characteristics of activities used as treatment media plan, Analysis of activities for physical, psychological and general aspects.

Outline treatment objectives for children: development, remedial (physical, mental and emotional), ADL, Include use of play, creative and cognitive activities.

Outline treatment objectives for physical conditions: remedial (physical & mental), ADL, prevocational, resettlement.

Outline briefly psychiatric treatment objectives:- Remedial (Emotional, social cognitive) ADL, prevocational and resettlement aspects.

5. General Outline of Department:

Orientation to equipments and referral systems.

6. Outline the ethics and etiquette relevant to O.T. as follows:-

- Professional conduct.
- Need for confidentiality in treatment of patients.
- Inter-staff, and therapist-patient relationships.

B. THERAPEUTIC ACTIVITIES

COURSE DESCRIPTION

A variety of practical activities are taught in order to provide a wide selection of therapeutic media relevant to the need of individual patients. For each activity the following objectives apply.

COURSE OBJECTIVES

The objectives of this course is that after 720 hours⁶ of demonstrations and practicals the student will be able to demonstrate an understanding of materials, tools and methods required for the activities studied, and their application in Occupational therapy.

In addition, the student will be able to fulfil with as measured by written assignments & practical work the following objectives of the course:

- A. Demonstrate the process involved.
- B. Explain and demonstrate methods of handling the materials.
- C. Plan and design simple, relevant projects in each activity learnt.
- D. Demonstrate ability to teach the activity to both individuals and groups. This will include both patients and fellow students.
- E. Analyse processes involved for physical, mental and emotional aspects prevocational and vocational purposes.
- F. Apply and adapt the activity appropriately for specific therapeutic, prevocational and vocational purposes.

COURSE OUTLINE

The following seven activities should be learnt.

Marks will be included with internal assessments for the current O.T examination. Oral and practical examination will be conducted in therapeutic Activities in the III Semester O.T. examination.

- a. Design
- b. Weaving and chair canning (limited)
- c. Leatherwork.
- d. Book-binding
- e. Recreational activities
- f Tailoring
- g. Basics in Computer science with reference to OT.
- h. Home activities
- i. Woodwork

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A. Design

A. Introduction to design - Students will be able to identify design in nature, textures, buildings, textiles, etc., to apply the colour wheel (primary and secondary colours, different shades and tones) for colour preparation.

B. Students will carry out and describe therapeutic value of the following:

1. Painting/designs (blow, spray, blotch, finger, oil, wax, thread, charcoal, etc)
2. Montage and collage.
3. Paper mat weaving and paper folding.
4. Paper cutting and streamers
5. Macrame - cord / knotting
6. Symography
7. Ball decoration and paper beads. Plate decorations and coconut shell designs.
8. Aluminium wire pictures. Wire decorations.
9. Embroidery (4 stitches)
10. Lettering and posters

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11. Batik printing

12. Tie and Dye fabric design

13. Block designing and printing, including adaptations.

14. Finger puppets clay modelling and paper mache.

15. Hand puppets, and dramatic presentation as group work

C. Each student will teach their class 1 or 2 activities of their own choice.

D. Therapeutic application and analysis of physical and psychological aspects.
Observation of
application in O.T psychiatric & paediatric application in detail.

File preparation - compiling of methods samples for each activity. Children's activities to be compiled seperately with appropriate therapeutic values. Files will be marked.

B. Weaving and chaircaning

Weaving

1. Simple card weaving.

2. Rug weaving.

Therapeutic application, activity analysis of above.

3. Chaircaning

A. Students will be able to carry out and describe the following:

1. Preparation of frame (for chair or stool).

2. Seven different steps in weaving the cane.

B. Application of therapeutic prevocational and vocational values.

File preparation - illustrations of above processes and OT application will be marked.

C. Leather work

1. Types of hides and skins used in leather work.,
2. Manufacture of leather, different characteristics in relation to methods employed.
3. Leather purchasing and calculation of cost.

B. Describe and use tools - basic tools, cutting tools, sewing tools, tools for special effects.

Outline purchase and care of tools.

Carry out techniques - cutting, thonging, stitching, punching, braiding, lining, fastenings (rivets, eyelets, press buttons, buckles, zips and velcro), decorating leather articles, use of paints, dyes and finishes.

C. Prepare 1 splint and 1 aid eg. opponens splint and palmar pocket aid.

D. Prepare 1 project - eg. watch strap, purse, wallet, belt, pocket pouch, spectacle case etc., using as many techniques as possible.

E. Outline - storage availability, cost and care of materials.

F. Application : Activity analysis, therapeutic values and use to the therapist.

File preparation - On all the above. Practical test Marks will be given also for projects and files.

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D. Book Binding

A. Outline the art of book binding

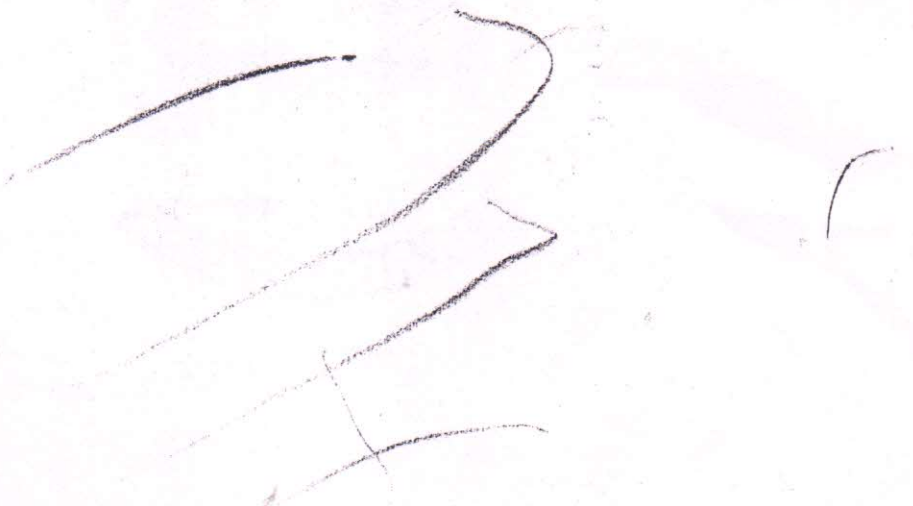
Describe book binding equipment and how to use it.

Describe maintenance and care of binding tools and equipment.

B. Practical sessions:

1. Simple binding procedures eg. chit pads and letter pads.
2. Section binding (including stitching)
3. Costing of projects made.

C. Application - therapeutic, prevocational and vocational values. File preparation on above methods and application. Marks will be given for files and projects.



E. Recreational Activities

Outline the use of the following recreational activities as a therapeutic medium.

Plan the following activities for various patient groups.

1. Sports
2. Games
3. Picnic
4. Drama
5. Leisure & hobbies
6. Music

File preparation: This is an applied subject. Notes on the above will be marked.

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F. Tailoring

1. Types of stitches and their uses
2. Types of seams and their uses
3. Types of openings and fastenings
4. Pattern making , measuring and cutting
5. To make any one of the following:

pillow case
shopping bag
Apron
Cushion cover
Baby's dress

G. Basic Computer Science

30 hours

A Introduction to computers -

Key Board Usage

Hardware :

- A) Knowledge of the following terminology -Micro processor(CPU), Memory, Monitor, Keyboard ,Storage device, floppy discs , hard discs, printers, Microcomputers.
- B) Switching on and switching off the computer and printer
- C) Accessory Management : Explorer and Outlook Express
- D) Printers, Modem ,CD Floppy use
- E) Simple trouble Shooting
- F) Simple Preventive Maintenance techniques (dust, Mouse pad maintenance, gentle use of keys)

Software :

Operating Systems : Eg. Windows, Linux, DOS. The student should know how to use any one .

Word processing Software : Eg. MS Word Star Office, Word Perfect .The student should be able to use any one.

Spread sheet software: Eg. MS Excel, Star Office , Lotus . The student should be able to use anyone.

Application Software: Power Point, Graphics.

Browser/ Mail : Netscape Communication, Internet.

Internet : searching Medline and related research -Key terms, Privacy issues and ethics.

H. Home Activities

Plan and prepare simple meals.

I. Woodwork

A. Introduction to Carpentry - Students will be able to describe different types of wood, including care and storage. Selection of wood, cost and availability.

B. Carpentry tools - Students will be able to describe structure, functions, positions of use and precautions in using each tool, also to explain care and maintenance of tools.

C. Joints - Students will be able to identify and make 4 different types of joints.

E. Application - Students will be able to explain therapeutic values and application for O.T. They will analyse at least 3 processes and describe methods of adaptations of tools.

File preparation - Students will compile information on above aspects. Files will be marked.

EVALUATION

Internal:

1. Files to be submitted for each of the above activities,
2. Tests on Activity analysis, grading of activity,
3. Written, Oral & Practical examination in Basic Principles and Therapeutic Activities.

University: Written, Oral and Practical Examination in Basic Principles and Therapeutic Activities.

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Nursing and First Aid

(Not for University Examination)

Instruction Hours: 40
(Theory-24, Pract. 12)

COURSE DESCRIPTION

This course enables students to have a better understanding of and develop skill in giving first aid treatment in emergencies in either the hospital or the community.

COURSE OBJECTIVES

The objectives of this course is that after 40 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the principles of first aid and demonstrate skill in giving first aid treatment in emergencies that may be met in the community and in their practice as therapists.

In addition, the student will be able to fulfil the following objectives of the course.

- A. Understand the importance of first aid and explain the rules of first aid.
- B. Explain the scope of first aid and concept of emergency.
- C. Identify and give first aid in burns, fire accidents, road accidents, poisoning, drowning, insect bites and trauma due to a foreign body.
- D. Identify various fractures and practice bandaging and splinting in care of fractures.
- E. Describe the types of wounds, haemorrhages, shock and respiratory emergencies.
- F. Transportation of persons with various types of injuries.
- G. Identify and give first aid treatment in community emergencies and in natural disasters.
- H. Identify and utilise the community resources like voluntary agencies, local, national and international agencies.
- I. Acquire knowledge about ambulance services and their functions in relation to emergencies.

COURSE OUTLINE

A. INTRODUCTION

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Definition of first aid, importance of first aid, Golden rules of first aid, scope and concept of emergency.

B. FIRST AID EMERGENCIES

1. Burns & scalds: Causes, Degrees of burns, first aid treatment, general treatment.
2. Poisoning: Classification (irritants, acid alkali, narcotics) Signs and symptoms, first aid treatment, general treatment.
3. Trauma due to foreign body insertion: Eye, ear, nose, throat, stomach and lung.
4. Bites: First aid, signs, symptoms and treatment.
 - a. Dog bites: Rabies
 - b. Snake bite: neurotoxin, bleeding diathesis.

C. SKELETAL INJURIES

Definition, types of fractures of various parts of the body, causes, signs, and symptoms, rules of treatment, transport of patient with fracture, first aid measures in dislocation of joints, treatment of muscle injuries.

D. RESPIRATORY EMERGENCIES

1. Asphyxia: Etiology, signs and symptoms, rules of treatment.
2. Drowning: Definition and management.
3. Artificial respiration: types and techniques.

E. WOUNDS AND HAEMORRHAGE

1. Review of Anatomy and Physiology of the circulatory system.
2. Wounds: Classification, management.
3. Haemorrhages: Classification, signs and symptoms, rules for treatment of haemorrhage.
4. Treatment of haemorrhage from special areas (scalp, mouth, nose, ear, palm and various veins.)
5. Internal haemorrhages: Visible and concealed.

F. SHOCK AND UNCONSCIOUSNESS

Definition, types of shock, common causes of shock, signs and symptoms of shock (assessment of established shock), general and special treatment of established shock.

G. TRANSPORTATION OF THE INJURED

Definition of first aid, importance of first aid, Golden rules of first aid, scope and concept of emergency.

B. FIRST AID EMERGENCIES

1. Burns & scalds: Causes, Degrees of burns, first aid treatment, general treatment.
2. Poisoning: Classification (irritants, acid alkali, narcotics) Signs and symptoms, first aid treatment, general treatment.
3. Trauma due to foreign body insertion: Eye, ear, nose, throat, stomach and lung.
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5. Internal haemorrhages: Visible and concealed.

F. SHOCK AND UNCONSCIOUSNESS

Definition, types of shock, common causes of shock, signs and symptoms of shock (assessment of established shock), general and special treatment of established shock.

G. TRANSPORTATION OF THE INJURED

1. Methods of transportation: Single helper, hand seat, stretcher, wheeled transport (ambulance)
2. Precautions taken: Blanket lift, air and sea travel.

H. COMMUNITY EMERGENCIES

Role of first aider (immediate and later) in fires, explosions, floods, earth quakes, famine.

I. COMMUNITY RESOURCES

Police Assistance, voluntary agencies (local, national, international), Ambulance services (functions)

EVALUATION

Unit tests, term examinations, assignments, term examinations by doctor

1. Test papers
2. Final Practical + Oral test

REFERENCES

1. Hoon R.S. "First aid to the injured" 1st edition, Delhi, St. John Ambulance Association.
2. Raine Hardhins and Hunt Vaheirs "Urgencies and emergencies for Nurses" 1965 English Universities Press Ltd.
3. Gardner Hard "New Advanced First Aid" London Butter Worths 1969.
4. First Aid Textbook by American Red Cross 1945. The Blackiston Company, Philadelphia.
5. Golwalla Asoi "A Handbook of Emergencies" 2nd edition, Bombay Samet and Company, 1981

BASIC NURSING

INTRODUCTORY CLASS

What is nursing? Nursing principles. Inter personal relationship, Bandaging, basic turns, bandaging extremities; triangular bandages and their application.

NURSING POSITION

Environment safety; bed making, prone, lateral, dorsal, dorsal recumbent, fowler's positions, comfort measures, aids to rest and sleep.

LIFTING AND TRANSPORTING PATIENTS

Lifting patients up in the bed; transferring from bed to wheel chair' transferring from bed to stretcher.

PROVIDING FOR PATIENTS ELIMINATION

Giving and taking bed pan, urinal, observation of stools, urine observation of sputum.. Understand use and care of catheters enema giving.

METHODS OF GIVING NOURISHMENT

Feeding , Tube feeding, Drips, Transfusions

CARE OF RUBBER GOODS

Observation, reporting and recording temperature, Respiration and Pulse, Simple Aseptic Technique, Sterilisation and Disinfection.

SURGICAL DRESSING

Parental Administration of Medicine,

Course, Orientation I (Orientation / Physiotherapy).

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INSTRUCTION STAFF

I. Patterns of Health Care Delivery

- a) National trends and resource
- b) Local trends and resources
- c) Overview of Health Science Professions (Paramedicals)

II. Components of Physiotherapy Profession.

- a) History of Medical Therapeutics
- b) History of Physiotherapy, International, National Local
- c) Professional and governmental licensing accreditation and education standards.

III. Role of Physiotherapy in meeting health care needs of India

- a) Needs versus Demands
- b) Physiotherapist as "Educator"
- c) Common problems and solutions.

40 hrs.

FIRST AID

Syllabus as for Certificate of Red Cross Society of St. John's Ambulance Brigade.

Pathology and Microbiology

University Examination: At the end of 2nd year

Instruction hours: 50

COURSE DESCRIPTION

This course follows the basic course in anatomy and physiology, and compliments the course in general medicine & surgery being taught concurrently. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations imposed by pathology on the functioning of the individual.

COURSE OBJECTIVES

The objective of this course is that after 50 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the pathology and microbiology of common diseases that therapists would encounter in their daily practise. The course will also help therapists understand how to protect themselves and their patients from nosocomial infections during their interactions.

In addition, the student will be able to fulfil the following objectives of the course.

COURSE OUTLINE

PATHOLOGY

- A. Introduction: Concepts of diseases, classification of lesions.
- B. Bacterial, viral and parasitic infections – a general outline.
- C. Inflammation and repair, Degeneration, necrosis and gangrene.
- D. Haemorrhage, shock, embolism, thrombosis.
- E. Tuberculosis, Leprosy, Typhoid.
- F. Deficiency diseases.
- G. Tumours: Aetiology & spread. Common tumours.
- H. Blood : Anaemia, Heart and blood vessels, common congenital anomalies, rheumatic & coronary heart diseases.
- I. Respiratory system: Pneumonias, Bronchiectasis, Emphysema, Chronic bronchitis, Asthma.
- J. Bone and joints : Autoimmune disease, septic arthritis, Osteomyelitis.
- K. Skin : Leprosy.
- L. Urinary system.
- M. Central nervous system: CNS infections, vascular disorders.
- N. Rheumatoid Arthritis.
- O. Scleroderma and Psoriasis
- P. Diseases of muscle including poliomyelitis, Myopathies.
- Q. Volkmann's Ischaemia

MICROBIOLOGY

L. Lecture.

LD. Lecture demonstrations.

- A. Introduction and history of microbiology (L)
- B. General lectures on micro – organisms: (LD)
 - 1. Classification
 - 2. Shape and arrangement
 - 3. Special characteristics – spores, capsules, enzymes, motility, reproduction.
- C. Disinfection and antiseptics. (LD)
- D. Sterilization and asepsis (LD)
- E. Antibacterial agents – fundamental aspect, susceptibility tests. (LD)
- F. Infection – source of infection
 - portals of entry
 - spread of infection
- G. Non – specific immunity (L)
- H. Immunity – natural and acquired (L)
- I. Allergy and hypersensitivity (L)
- J. Outline of common pathogenic bacteria and diseases produced by them.
treatment and prevention.
 - 1. Respiratory tract infections.
 - 2. Meningitis.
 - 3. Enteric infections.
 - 4. Anaerobic infections.
 - 5. Urinary tract infections.
 - 6. Leprosy, tuberculosis and miscellaneous infections.
 - 7. Wound infections.
 - 8. Sexually transmitted diseases.
 - 9. Hospital acquired infections.
- K. Pathogenic yeasts and fungi. (LD)
- L. Virology – virus infections, with special mention of Hepatitis, Poliomyelitis & Rabies. (LD)

EVALUATION

Internal tests and University Examination on Theory.

General Medicine, General Surgery and Paediatrics

Examination at the end of 2nd year

Instruction hours: 135

COURSE DESCRIPTION

This course follows basic courses on Anatomy, Physiology, Psychology and Sociology. It covers relevant aspects of General Medicine, General Surgery, paediatrics, Plastic Surgery, E.G., Ophthalmology and Radiology. A very short course in pathology and Microbiology will be conducted concurrently.

COURSE OBJECTIVES

The objectives of this course is that after 135 hours of lectures, the student will be able to demonstrate a general understanding of the diseases that therapists would encounter in their practice. They should have a brief idea of the aetiology and pathology, symptoms, and the resultant functional disability. This would help the candidates to understand the limitations imposed by the diseases on any therapy that may be prescribed.

A particular effort has been made to avoid over burdening the students with clinical signs and diagnostic maneuvers except in certain specific diseases such as rheumatoid arthritis.

Broad outlines of goals of pharmacological and surgical therapy should be imparted in those diseases in which physical or occupational therapy will be an important component of over all treatment.

In addition, the student will be able to fulfil the following objectives of the course.

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COURSE OUTLINE

GENERAL MEDICINE

A. INFECTIONS

Outline the mode of spread and appropriate prevention measures of the following Communicable diseases.

Bacterial -Tetanus

Viral - Herpes simplex , Zoster, varicella, Measles, German Measles , Hepatitis B AIDS.

Protozoal- Filaria

B. HAEMATOLOGY

1. Define and briefly describe clinical aspects of iron deficiency, B-12 and folic acid deficiency anemias.

2. List types of bleeding diathesis.

3. Describe the clinical features of Haemophilia

C. RESPIRATORY TRACT

1. Bronchitis- Define , list etiological factors and describe symptoms.

2. Pneumonia -list types of pneumonia(lobar, Broncho ,aspiration pneumonias)

3. List etiological agents and briefly outline symptoms and complications of pneumonia.

4. Asthma -Define ,describe briefly the etiological factors and clinical features of acute exacerbation.

5. Chronic obstructive airway diseases- Define Emphysema and chronic bronchitis . Briefly describe the pathology , symptoms of diseases and clinical course.

6. Tuberculosis- Describe the etiology, pathology and clinical features of pulmonary TB

7. Bronchiectasis- define and describe briefly the pathology , and clinical symptoms of bronchiectasis, bronchopulmonary segments and basis of postural drainage.

8. Emphysema- Define and briefly describe etiological factors.

9. Chest wall deformities - Define funnel chest, Pigeon chest , barrel chest , kyphoscoliosis of thoracic spine.

10. Briefly describe functional disability of Occupational , lung diseases, list pneumoconiosis.

D. CARDIO-VASCULAR SYSTEM

1. Cardiac failure- Define, list causes and symptoms
2. Rheumatic fever- Define and briefly describe etiology and gross pathology of Rheumatic heart disease.
3. Infective endocarditis- Define and outline etiology, symptoms and complications
4. Ischaemic heart disease- Outline pathology of IHD, define angina pectoris and Myocardial infarction. Describe clinical features and broadly outline medical surgical therapy.
5. Hypertension- Define and outline the clinical features complications and goals of therapy.
6. Outline pathogenesis and clinical features of: Pulmonary embolism. Deep vein thrombosis, pulmonary infarct.
7. Congenital heart disease. List ASD, VSD, Fallot's Tetralogy, and PDA, and briefly outline the pathologic anatomy.

E. BONE, JOINT AND CONNECTIVE TISSUE DISORDERS

1. Brief introduction to concept of autoimmune disease.
2. Define : systemic lupus erythematosus , Polymyositis, Dermatomyositis, polyarthritis Nodosa, Scleroderma.
3. Rheumatoid Arthritis- Describe etiology, clinical features, and complications, Drug therapy, and non pharmacological therapy.
4. Osteoarthritis- Describe etiology, clinical features and complications and review nonsteroidal anti-inflammatory drugs and steroids.

F. RENAL DISEASES

1. Define and briefly outline acute and chronic renal failure.
2. Urinary tract infection. Pathogenesis. Outline common clinical conditions complicated by UTI

G. METABOLIC DISEASES

1. Diabetes -define and outline etiology. List types of Diabetes and complications

and briefly outline use of insulin, diet and oral hypoglycaemic agents in management of diabetes.

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2. Obesity- Define outline management.

H. GERIATRICS

1. List diseases commonly encountered in the elderly population and their role in causing disability: Hypertension, Ischaemic Heart disease, cerebrovascular accidents, Benign prostatic Hyperplasia, Cataracts and other causes of failing vision.

PLASTIC SURGERY

1. Classify burns by depth & surface area, Outline causes, Medical management & precautions in the acute stage.
2. List the potential deformities due to burns, methods of prevention & precautions. Mention cosmetic & functional treatment measures.
3. Outline plastic surgery procedures & management in rehabilitation of burns including splinting methods for common deformities and prevention of burns contractures.

SURGERY SYLLABUS

1. Describe abdominal surgical incisions .
2. Outline the post operative complications in :
 - a. Nephrectomy
 - b. Appendicectomy
 - c. Herniorrhaphy
 - d. Mastectomy
 - e. Thyroidectomy
 - f. Colostomy
 - g. Adrenalectomy
 - h. Cystectomy
 - i. Hysterectomy
 - j. Prostatectomy
 - k. Cholecystectomy
 - l. Ileostomy

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PAEDIATRICS

1. Describe growth and development of a child from birth to 12 years: including Gross motor, fine motor, social and adaptive development.
2. List the maternal and neonatal factors contributing to high risk pregnancy : inherited diseases; maternal infections-viral and bacterial; maternal diseases incidental to pregnancy, such as gestational diabetes, pregnancy induced hypertension; chronic maternal diseases such as heart diseases, renal failure, tuberculosis, diabetes, epilepsy; bleeding in the mother at any trimester.
3. Briefly describe community programmes: International (WHO), national and local, for prevention of poliomyelitis, blindness, deafness, mental retardation and hypothyroidism. Outline the immunisation schedule for children.
4. Cerebral Palsy: Define and briefly outline etiology-Prenatal, perinatal and postnatal causes; briefly mention pathogenesis, types of cerebral palsy (Classification), findings on examination: General examination, examination of C.N.S. Musculoskeletal system, respiratory system, G.I. tract & nutritional status.

Briefly outline associated defects: Mental retardation, microcephaly, blindness, hearing and speech impairment, squint and convulsions.

Briefly outline treatment.

Outline prevention: Appropriate management of high risk pregnancies, prevention of neonatal and postnatal infections, metabolic problems.

5. Muscular dystrophy: Outline various forms, modes of inheritance and clinical manifestation; physical findings in relation to disabilities progression of various forms and prognosis. Describe treatment goals in forms which are and are not fatal.

6. Spina bifida, meningomyelocele: Outline development; clinical features-lower limbs, bladder and bowel control; complications-U.T.I. & hydrocephalus; medical treatment and surgical treatment.

7. Juvenile idiopathic Arthritis: classification, pathology in brief, physical findings, course & prognosis. Outline treatment, prevention and correction of deformity.

8. Acute C.N.S infections: Classify (Bacterial and viral) and outline the acute illness, CNS sequelae leading to mental retardation, blindness, deafness, speech defect, neurological deficits, bladder and bowel problems seizure disorder and specific problems such as subdural effusion, hydrocephalus, pressure sores, feeding difficulties and Nutrition

9: Acute Flaccid Paralysis: Causes, Clinical features and management

10. Nutritional Requirement of the newborn and child: List dietary calories, fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition. Classify and outline etiology, findings and treatment of Rickets: Vitamin D deficiency and resistant rickets, Vitamin A deficiency and effects.

Evaluation:

Internal Theory

External Theory.

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APPLIED ANATOMY & BIOMECHANICS

Examination at the end of : 3rd Year

Instruction hours : 80

COURSE DESCRIPTION

This course supplements the knowledge of anatomy and enables the student to have a better understanding of the principles of biomechanics and their applications in musculoskeletal function and dysfunction.

COURSE OBJECTIVES

The objective of this course is that after 80 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the principles of Biomechanics and Kinesiology and their application in health and disease.

In addition, the student will be able, to fulfill the following objectives of the course.

COURSE OUTLINE

A. MECHANICS

1. Describe types of motion, planes of motion, direction of motion and quantity of motion.
2. Define forces, force vectors, components of forces.
3. Describe gravity, segmental centres of gravity, center of gravity, line of gravity of the human body, stability and center of gravity, relocation of the centre of gravity.
4. Describe the Reaction forces. Newton's Law of Reaction.
5. Describe equilibrium – Law of inertia and Establishing equilibrium of an object.
6. Describe objects in motion: Law of Acceleration joint distraction in a linear force system and Force of friction.
7. Describe concurrent Force Systems : Composition of forces; Muscle Action Lines, Total muscle force vector, Divergent muscle pulls, Anatomic pulleys.
8. Describe parallel force Systems : First class levers second class levers – Third class levers - Torque – Mechanical Advantage.

9. Define moment arm: Moment Arm of a muscle force. Moment arm of gravity and Anatomic pulleys.
10. Describe equilibrium of a lever.

DESCRIBE THE FOLLOWING:

1. Three types of motion.
2. The plane in which a given joint motion occurs, and the axis around which the motion occurs.
3. The location of the centre of gravity of a solid object, the location of the centre of gravity of a segmental object the location of the centre of the gravity of the human body.
4. The action line of single muscle.
5. The name, point of application direction, and magnitude of any interforce, given its reaction force.
6. A linear force system, a concurrent force system, a parallel force system.
7. The relationship between torque, moment arm and rotatory force component.
8. The methods of determining torque for the same given set of forces.
9. How anatomic pulleys may change action line, moment arm and torque passing through them.
10. In general terms, the point in the joint range of motion at which a muscle acting over the joint is biomechanically most efficient.
11. How external forces can be manipulated to maximize torque.
12. Friction, its relationship to contacting surfaces and to the applied forces.

DETERMINE THE FOLLOWING:

1. The identity (name) of diagrammed forces on an object.
2. The new centre of gravity of an object when segments are rearranged, give the original centres of gravity.
3. The resultant vector in a linear force system, a concurrent off system, and a parallel force system.
4. If a given object is in linear and rotational equilibrium.

5. The magnitude and direction of acceleration of an object not in equilibrium.
6. Which forces are joint distraction force and which are joint compressing forces what are the equilibrium force for each?
7. The magnitude and direction of friction in a given problem.
8. The class of term in a given problem.

COMPARE THE FOLLOWING:

1. Mechanical advantage in a second and third class level.
2. Work done by muscle in a second and third class level.
3. Stability of an object in tow given situations in which location of the centre of gravity and the base of support of the object.

DRAW THE FOLLOWING

1. The action line of muscle.
2. The rotary force component, the translatory force component, and the moment arm for a given force on a lever.

B. JOINT STRUCTURE AND FUNCTION

1. Describe the basic principles of joint design and a human joint.
2. Describe the tissue present in human joints; including dense fibrous tissue, bone, cartilage and connective tissue.
3. Classify joints – synarthrosis, Amphiarthrosis, Diarthrosis, subclassification of synovial joints.
4. Describe joint function, kinematic chains, range of motion.
5. Describe the general effects of injury and diseases.

RECALL THE FOLLOWING

1. The elementary principles of joint design.
2. The three main classification of joints.
3. The five features common to all diarthrodial joints.
4. Types of materials used in human joint construction.
5. Properties of connective tissue.

IDENTIFY THE FOLLOWING

1. The axis of motion for any given motion at a specific joint (knee, hip, metacarpophalangeal).
2. The plane of motion for any given motion at a specific joint, shoulder, interphalangeal, Wrist.

3. The degree of freedom at any given joint.
4. The distinguishing features of a diarthrodial joint.
5. The structures that contribute to joint stability.

COMPARE THE FOLLOWING

1. A synarthrosis with a amphiarthrosis on the basis of methods, materials and function.
2. A synarthrosis with a diarthrosis on the basis of methods, materials and function.
3. Closed kinematic chain with an open kinematic chain.
4. Dense fibrous tissue with bone.
5. Hyaline cartilage with fibrocartilage.

C. MUSCLE STRUCTURE AND FUNCTION

1. Describe Mobility and stability functions of muscles.
2. Describe elements of muscle structure - Composition of a muscle fibre, the motor unit, types of muscle fibres, muscle fibre size, arrangement and number, Muscle tension, length - tension relationship.
3. Describe types of muscle contraction, speed and angular Velocity. Applied load, Voluntary control, Torque and Isokinetic exercise.
4. Summarise factors affecting muscle tension.
5. Classify muscles - spurt and shunt muscles, Tonic and phasic muscles.
6. Factors affecting muscle function: Type of joint and location of muscle attachment, number of joints, passive insufficiency, Sensory receptors.

DESCRIBE THE FOLLOWING:

1. Ordering of the myofibrils in a sarcomere.
2. An alpha motor neuron.
3. The connective tissue in a muscle.
4. How tension develops in muscle.
5. Isokinetic exercise.

DEFINE THE FOLLOWING:

Active and passive insufficiency.
Active and passive tension.
Concentric, eccentric and isometric contractions.
Reserve action.
Agonists, antagonists and synergists.

RECALL THE FOLLOWING:

Factors affecting muscle tension.

Characteristics of different fibre types.

Characteristics of motor units.

Factors affecting angular velocity.

DIFFERENTIATE THE FOLLOWING:

1. A spurt from a shunt muscle.
2. A phase from a tonic muscle.
3. Against from an antagonist.
4. Active from passive insufficiency.
5. Concentric from eccentric contraction.

COMPARE THE FOLLOWING:

1. Tension, development in eccentric versus concentric contractions.
2. The angular velocity of isometric versus concentric and isokinetic contractions.
3. Isokinetic exercise with concentric exercise.

D. THE VERTEBRAL COLUMN

1. Articulations, Ligaments and muscles, typical vertebra, intervertebral disc.
2. Describe factors affecting stability and mobility.
3. Regional structure and function of cervical, dorsal, lumbar and sacral vertebrae.
4. Describe the muscles of the vertebral column - Flexors, Extensors, Rotators and Lateral flexors.
5. Describe the effects of injury and developmental deficits.

DESCRIBE THE FOLLOWING:

1. The curves of the vertebral column using appropriate terminology.
2. The articulations of the vertebral column.
3. The major ligaments of the vertebral column.
4. The structural components of typical and atypical vertebrae.
5. The intervertebral disc.
6. Regional characteristics of vertebral structure.
7. Motions of the vertebral column.
8. Lumbar - pelvic rhythm.
9. Rotation of the vertebrae in each region.
10. Movements of the ribs during rotation.

IDENTIFY THE FOLLOWING:

1. Structure that provide stability for the column.
2. Muscles of the vertebral column and the specific functions of each.

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3. Ligaments that limit specific motions (i.e. flexion, extension, lateral flexion, rotation).
 4. Forces acting on the vertebral column during specific motions.

EXPLAIN THE FOLLOWING:

1. Structure that provide stability for the column.
2. Muscles of the vertebral column and the specific functions of each.
3. Ligaments that limit specific motions (i.e. flexion, extension, lateral flexion, rotation).
4. Forces acting on the vertebral column during specific motions.

EXPLAIN THE FOLLOWING:

1. The relationship between the intervertebral and facet joints during motions of the vertebral column.
2. The role of the intervertebral disc in stability and mobility.
3. The effects of forces acting on the structural components during motion and at rest.

ANALYSE THE FOLLOWING:

1. The effects of disease process, injury, or other defects in the vertebrae.
2. The effects of an increased lumbosacral angle on the pelvis and lumbar vertebral column.

F. THE SHOULDER COMPLEX

1. Describe the structural components of the shoulder complex including the articulating surfaces, capsular attachments and ligaments and movements of the following joints:
 - i) Sternoclavicular
 - ii) Acromioclavicular
 - iii) Scapulothoracic
 - iv) Glenohumeral
2. Describe the function of the shoulder complex including dynamic stability of the glenohumeral joint, musculohumeral Rhythm, Scapulothoracic and glenohumeral contributions.
3. Describe the muscles of elevation (Deltoid, Supraspinatus, Infraspinatus, Teres minor Subscapularis, Upper Trapezius, lower Trapezius, Serratus anterior, Middle Trapezius & Rhomboids).
4. Describe the muscles of depression Lattissimus dorsi Pectoralis, Teres Major, Rhomboids).

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DESCRIBE THE FOLLOWING:

1. The articular surfaces of the joints of the complex.
2. The function of the ligaments of each joint.
3. Accessory joint structures and the function of each.
4. Motions and ranges available at each joint and movement articular surfaces within the joint.
5. The normal mechanism of dynamic stability of the glenohumeral joint, utilizing principles of biomechanics.
6. The normal mechanism of glenohumeral stability in the dependent arm.
7. Scapulohumeral rhythm, including contributions of each joints.
8. The extent of dependent of independent function of each joint in scapulohumeral rhythm.
9. How restriction in the range of elevation of the arm may occur.
10. One muscular force couple at a given joint and its function.
11. The effect of given muscular deficit may have on shoulder complex function.

COMPARE THE FOLLOWING:

1. The advantages and disadvantages of coracoacromial arch.
2. The structural stability of the three joints, including the tendency toward degenerative changes and derangement.

Draw the action lines of muscles of the shoulder complex and the moment arm for each, and resolve each into components.

G. THE ELBOW COMPLEX

1. Describe the structure of the Humeroulnar and Humeroradial joints including articulating surfaces, joint capsule, Ligaments & Muscles.
2. Describe the function of the Humeroulnar and Humeroradial joints including the Axis of motion, Range of motion, Muscle action.

DESCRIBE THE FOLLOWING:

1. The articular surfaces of the joints of the complex.
2. The function of the ligaments of each joint.
3. Accessory joint structures and the function of each.
4. Motions and ranges available at each joint and movement articular surfaces within the joint.
5. The normal mechanism of dynamic stability of the glenohumeral joint, utilizing principles of biomechanics.
6. The normal mechanism of glenohumeral stability in the dependent arm.
7. Scapulohumeral rhythm, including contributions of each joints.
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2. Describe the function of the Humeroulnar and Humeroradial joints including the Axis of motion, Range of motion, Muscle action.

3. Describe the structure of the superior and inferior Radioulnar joints.
4. Describe the function of the superior and inferior Radioulnar joints.
5. Describe the mobility and stability of the Elbow complex and its relationship to Hand and Wrist.
6. Describe the effects of injury and the resistance to longitudinal compression forces, to distraction forces & to Medial lateral forces.

DESCRIBE THE FOLLOWING:

1. All of the articulating surfaces associated with each of the following joints — humeroulnar, humeroradial superior and inferior radioulnar.
2. The ligaments associated with all the joints of the elbow complex.

IDENTIFY THE FOLLOWING:

1. Axes of motion for supination and pronation and flexion and extension.
2. The degrees of freedom associated with each of the joints of the elbow complex.
3. Factors limiting the range of motion in flexion and extension.
4. Factors that create the carrying angle.
5. Factors limiting motion in supination and pronation.

COMPARE THE FOLLOWING:

1. The translatory and rotatory components of the brachioradial is and brachialis at all points in the range of motion.
2. The moment arms of the flexors at any point in the range of motion.
3. Muscle activity of the extensions in a closed kinematic chain with activity in an open kinematic chain.
4. The role of pronator teres with the role of pronator quadratus.
5. The role of biceps with that of brachialis.
6. The resistance of elbow joint to longitudinal tensile forces with its resistance to compressive forces.

7. The features of a classic tennis elbow with the features of cubital tunnel syndrome.
8. The role of and structure of the annular ligament with the role and structure of the articular disc.

H. THE WRIST AND HAND COMPLEX

1. Describe the wrist complex including Radiocarpal joint Midcarpal joint and the ligaments of the wrist complex.
2. Describe the function of the radiocarpal and midcarpal joints including the movements and muscles involved.
3. Describe the Hand complex including. Structure of fingers (Carpometacarpal, Metacarpophalangeal and interphalangeal joints of fingers, ligaments Range of motion).
4. Describe the finger musculature including Extrinsic & MCP, PIP and DIP joint function and intrinsic finger muscles.
5. Describe the structure of the Carpometacarpal, MCP and IP joints of thumb.
6. Describe the structure including the Extrinsic & Intrinsic thumb muscles.
7. Describe Prehension, Power, Cylindrical, Spherical & Hook grips.
8. Describe Precision handling, Pad to pad, Tip to tip and Pad to side prehension and Functional position of wrist and hand.

DESCRIBE THE FOLLOWING:

1. The articular surfaces of the joint of the wrist and hand complexes.
2. The ligaments of the joints of the wrist and hand, including the function of each.
3. Accessory joint structures found in the wrist and hand complex, including the function of each.
4. Types of movements and types of motion of the radiocarpal joint, the midcarpal joint, and the total wrist complex.

5. The sequence of joint activity occurring from full wrist flexion to extension including the role of the scaphoid, the sequence of joint activity in radial and ulnar deviation from neutral.
6. The role of the wrist musculature in producing wrist motion.
7. Motions and ranges available to joints of the hand complex.
8. The gliding mechanisms of the extrinsic finger flexors.
9. The structure of the extensor mechanism, including the muscles and ligaments that compose it.
10. How M.C.P. extension occurs, including the muscles that produce and control it.
11. How flexion and extension of the PIP joint occur, including the muscular and ligamentous forces that produce and control these motions.
12. How flexion and extension of DIP joints occur, including the muscular and ligamentous forces that produce and control these motions.
13. The role of the wrist in optimizing length - tension in the extrinsic hand muscles.
14. The activity of reposition, including the muscles that perform it.
15. The functional position of the wrist and hand.

DIFFERENTIATE BETWEEN

1. The role of the interossei and lumbrical muscles at the MCP and IP joints.
2. The muscles used in cylindrical grip to those active in spherical grip, hook grip, and lateral, prehension.
3. The muscles that are active in pad - to - pad, tip - to - tip and pad to side prehension.

COMPARE

1. The activity of muscles of the thumb (in opposition of the thumb to the index finger) with the activity of those active in opposition to the little finger.
2. The characteristics of power grip with those of precision handling.
3. The most easily disrupted form of precision handling that may be used some on without any active hand musculature; what are the pre-requisites; for each?

I. THE HIP COMPLEX

1. Describe the general features of the hip joint including the articulating surfaces on the pelvis & the femur; Angulations; Angle of inclination, Angle of Torsion; Internal architecture of femur and pelvis capsule. Ligaments & Muscles (Flexors, Extensors – one joint extensors, two joint extensors, Adductors, medial Rotators and Lateral Rotators).
2. Describe the function of hip – Rotation between pelvis, lumbar spine and hip; Pelvic motion – Anterior posterior pelvic tilting, Lumbar pelvic rhythm, Lateral pelvic tilting, Pelvic rotation.
3. Summarise the pelvic motions in the static erect posture.
4. Describe Femoral motion.
5. Describe Hip stability in Erect Bilateral stance, sagittal plane equilibrium and Unilateral stance.
6. Describe reduction of Forces with weight shifting and using a cane and deviations from normal in muscular weakness & Bony abnormalities.

DESCRIBE THE FOLLOWING:

1. The articulating surfaces of the pelvis and femur.
2. The structure and function of the trabecular systems of the pelvis and femur.
3. The structure and function of the ligaments of the hip joint.
4. The angle of inclination and the angle of torsion.
5. The plane and axes of the following pelvic motions and the accompanying motions at the lumbar spine and hip joints, pelvic rotation and anterior posterior and lateral tilting of the pelvis.
6. The muscle activity that produces tilting and rotation of the pelvis.
7. Motions of the femur on the pelvis including planes and axes of motion.
8. The structure and function of all the muscles associated with the hip joints.
9. The forces that act on the head of femur.

10. The position of greatest stability at the hip.

EXPLAIN THE FOLLOWING:

1. How sagittal and frontal plane equilibrium are maintained in erect bilateral stance.
2. How frontal plane equilibrium is achieved in unilateral stance.
3. How force acting on the femoral head may be reduced.
4. How the function of the two joint muscle at the hip are affected by changes in the position of the knee and hip.
5. The functional and structural relationship among the hip, knee, pelvis and lumbar spine.

COMPARE THE FOLLOWING:

1. Forces acting on the femoral head in erect bilateral stance with the forces acting on the head in erect unilateral stance.
2. Coxa vaiga with coxa with coxa vara on the basis of hip stability and mobility.
3. The motions that occurs at the hip, pelvis and lumbar spine during forward trunk bending with the motions that occur during anterior and posterior tilting on the pelvis in the erect standing position.
4. Anterversion with retroversion on the basis of hip stability and mobility.
5. The structure and function of the following muscles – Flexors and extensors – abductors and adductors, lateral and medial rotators.

J. THE KNEE COMPLEX

1. Describe the structure of the Tibiofemoral joint Articulating surfaces on femur and tibia, the menisci, Joint capsule and bursae, Ligaments and other supporting structures, Anterior – posterior and Medio – Lateral stability; Muscle structure; Knee flexors & extensors: Axes of knee complex: Mechanical axis, Anatomic axis and axis of motion.
2. Describe the function of the Tibiofemoral joint: Range of motion. Flexion and extension, Rotation, Abduction and Adduction locking and unlocking; Functions of Menisci and Muscle function.

3. Describe the structure of the patellofemoral joint.
4. Describe the function of the patellofemoral joint.
5. Describe the effects of injury and disease in the tibiofemoral and patellofemoral joints.

] DESCRIBE THE FOLLOWING:

1. The articulating surfaces of tibiofemoral and patellofemoral joints.
2. The joint capsule.
3. The anatomic and mechanical axes of knee.
4. Motion of the femoral condyles during flexion and extension in a closed kinematic chain.
5. Motion of the tibia in flexion & extension in an open kinematic chain.

DRAW:

1. The Q angle when given an illustration of the lower extremity.
2. Moment arm of the quadriceps at the following degree of knee flexion: 90 deg., 30 deg., 10deg.
3. The action lines of vastus lateralis and the vastus medialis oblique.

LOCATE:

1. The origins and insertion of all the muscles at the knee.
2. The bursae surrounding the knee.
3. The attachments of the ligaments of the medial and lateral compartments.

IDENTIFY:

1. Structure that contribute to the medial stability of the knee including dynamic and static stabilizers.
2. Structures that contribute to the lateral stability of the knee including dynamic and static stabilizers.

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3. Structures that contribute to the posterior stability of the knee including dynamic and static stabilizers.
 4. Structures that contribute to the anterior stability of the knee including dynamic and static stabilizers.
 5. Structures that contribute to the rotary stability of knee.
 6. The normal forces that are acting on the knee.

COMPARE:

1. The knee and the elbow joint on the basis of similarities / dissimilarities in structure and function.
2. The lateral with the medial meniscus on the basis of structure and function.
3. The forces on the patellofemoral joint in full flexion with full extension.
4. The action of quadriceps in an open kinematic chain with that in a closed kinematic chain.
5. The effectiveness on the hamstrings as knee flexors in each of the following hip positions:- hyperextension, ten degrees of flexion and full flexion (open kinematic chain).

EXPLAIN:

1. The function of the menisci.
2. How a tear of the medial collateral ligament may affect joint function.
3. The functions of the suprapatellar, gastrocnemius, infrapatellar and prepatellar bursae.
4. Why the semiflexed position of the knee is the least painful position.
5. Why the knee may be more susceptible to injury than the hip joint.

K. TYPE ANKLE – FOOT COMPLEX:

Describe the structure, ligaments, axis and function of the following: Ankle joint, tibiofibular joints, Transverse Tarsal joint, Tarsometatarsal joint, Plantar arches, Metatarsophalangeal joints, interphalangeal joints.

Define the terminology unique to the ankle foot complex, including inversion exarssion, pronation – supination, dorciflexion – plantar flexion, flexion – extension and adduction and abduction.

DESCRIBE

1. The compound articulations of the ankle, subtalar, talocalcaneonavicular, transverse tarsal and tarsometatarsal joints.
2. The role of the tibiofibular joints and supporting ligaments.
3. The degrees of freedom and range of motion available at the joint of the ankle and the foot.
4. The significant ligaments that supports the ankle, subtalar, and transverse tarsal joints.
5. The triplanar nature of ankle joint motion.
6. The articular movements that occur in the weight – bearing sustalar joint during inversion – eversion.
7. The relationship between tibial rotation and subtalar / talocalcaneonavicular inversion – eversion.
8. The relationship between hind foot inversion eversion and motility – stability of the transverse tarsal joint.
9. The function of the tarsometatarsal joints, including when motion at these joints is called upon.
10. Supination – pronation of the forefoot at the tarsometatarsal joints.
11. Distribution of weight within the foot.
12. The structure and function of the plantar arches including the primary supporting structure.

13. When muscles supplement arch support, including those muscles that specifically contribute.
14. The effects of foot extension on the planar arches.
15. The general function of the extrinsic muscles of ankle & foot.
16. The general function of the intrinsic muscle of foot.

L. POSTURE:

1. Describe the effects of gravity and indicate the location of the gravity line in the sagittal plane in optimal posture.
2. Analyse posture with respect to the optimal alignment of joints in the antero - posterior and lateral views.

DESCRIBE:

2. The position of hip, knee and ankle joints in optimal erect posture.
3. The position of body's gravity line in optimal erect posture, using appropriate points of reference.
4. The effects of gravitational moments of body segments in optimal erect posture.
5. The gravitational moments acting around the vertebral column, pelvis, hip, knee and ankle in optimal erect posture.
6. Muscles and ligamentous structures that counter balance gravitational moments in optimal erect posture.
7. The following postural deviations: pesplanus, halluxvalgus, pes cavus, idiopathic scoliosis, kyphosis and lordosis.
8. The effects of the above postural deviations on body structures i.e., ligaments, joints and muscles.

DETERMINE:

1. How changes in the location of the body's gravity line will effect gravitational moments acting around specified joints axes.
2. How changes in the alignments of body segments will affect either the magnitude or the deviation of the gravitational moments.

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3. How changes in alignments will affect supporting structures such as ligaments, joints capsules, muscles and joints surfaces.

M. GAIT

DEFINE:

1. The stance, swing and double support phases of gait.
2. The subdivisions of the stance and swing phases of gait.
3. The time and distance parameters of gait.

DESCRIBE:

1. Joint motion at the hip, knee and ankle for one extremity during a gait cycle.
2. The location of line of gravity in relation to the hip, knee, and ankle during the stance phases of gait.
3. The gravitational moments of force acting at the hip, knee and ankle during the stance phase.

EXPLAIN:

1. Muscle activity at the hip, knee and ankle throughout the gait cycle, including why and when a particular muscle is active and type of contraction required.
2. The role each of the determinants of gait.
3. The muscle activity that occurs in the upper extremity and trunk.

COMPARE:

Motion of upper extremities and trunk with motion of pelvis and lower extremities.

The traditional gait terminology with the new terminology.

Normal gait with a gait in which there is a weakness of the hip extensors and abductors.

Normal gait with a gait in which there is unequal leg lengths.

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APPLIED PHYSIOLOGY

Examination at the end of 3rd year

Instruction hours : 30

COURSE DESCRIPTION

The objective of this course is that after 30 hours of lectures demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the effect of abnormal physiology on function and dysfunction of the human body.

In addition, the student will be able to fulfil the following objectives of the course.

A. THE HEART AND CIRCULATION

1. Structure and properties of heart muscles.
2. The action of the heart
3. Determinants of cardiac performance.
4. Normal E.C.G.
5. Maintenance of blood pressure.
6. Cardiac arrest and heart failure.
7. Outline of lymphatic circulation & pulmonary circulation
8. Cardiovascular compensation for postural and gravitational changes.
9. Hypertension.
10. Oedema.
11. Central and peripheral venous pressures.

B. NERVOUS SYSTEM AND MUSCLES

1. Outline of structure and function of the central nervous system.
2. Outline of the autonomic nervous system.
3. Types of nerve cells, electrical phenomena in nerve cells.
4. Properties of mixed nerves.
5. Reflex action, reciprocal innervation.
6. Degeneration and re-generation of nerves.
7. Control of posture.
8. Outline of voluntary movement.
9. Cutaneous, deep and superficial sensation.
10. Synaptic transmission.
11. Neuro Muscular transmission.
12. Properties of muscles, contractile responses, types contraction, electrical phenomena and tonic reflexes.

C. RESPIRATION

1. Mechanics of respiration
2. Breath sounds.
3. Exchange of gases.
4. Lung volumes.
5. Magnitude of death space.
6. Control of bronchial smooth muscle.
7. Lung compliance.
8. Nervous control of respiration.
9. Chemical control of respiration.
10. Voluntary control of respiration
11. Oxygen and carbon dioxide transport.
12. Effects of exercise on respiration.
13. Artificial respiration.
14. Gas tensions in air at Sea level, tracheal air, cellular mixed air, plasma, arterial blood and mixed venous blood.
15. Acid base reactions.

EVALUATION.

Internal : Theory and Orals
University: Theory and Orals.

BIO-ENGINEERING

- 1) Definition and principles of Bio-engineering.
- 2) Designing and construction of prosthesis and orthotics devices using bio-engineering principles.
- 3) Simple adaptive devices for the disabled.
- 4) Use of sophisticated machines for research in bio-engineering.
- 5) Utilising the above knowledge for occupational therapy.

CLINICAL ORTHOPAEDICS

Examination at the end of 3rd year

Total hours: 55 hrs.

COURSE DESCRIPTION

Following the basic science and clinical science courses this course introduces the student to the orthopaedic conditions which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations imposed by orthopaedic pathology on the functioning of the individual.

COURSE OBJECTIVES

The objective of this course is that after 55 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of orthopaedic conditions causing disability and their management.

In addition, the student will be able to fulfil the following objectives of the course.

COURSE OUTLINE

A. INTRODUCTION TO ORTHOPAEDICS

A. Introduction to orthopaedic terminology, types of pathology commonly dealt with, clinical examination, common investigations and outline of non-operative & operative management.

B. PRINCIPLES OF OPERATIVE TREATMENT

List indications, contraindications and briefly outline principles of Arthrodesis, Arthroplasty, osteotomy, bone grafting, Tendon-Transfers, limb lengthening procedures, Principles of internal and external fixation of bone injuries

C. SPRAINS AND MUSCLE STRAINS

List common sites of sprains and muscle strains and describe the clinical manifestations and treatment.

D. FRACTURES & DISLOCATIONS: General principles

Outline the following:

1. Types of Fractures including patterns, open and closed fractures and fracture-dislocations.
2. Differences between dislocation & subluxation.

3. General & Local signs & symptoms of fractures & dislocations
4. Principles of management of fractures & dislocations.
5. Prevention & Treatment of complications including:
Fracture-disease, Volkman's ischaemic contracture, Sudek's Atrophy, Carpal Tunnel Syndrome, Myositis ossificans, and Shoulder-hand syndrome.
6. Fracture healing

E. UPPER LIMB FRACTURES & DISLOCATIONS

1. Enumerate major long-bone fractures and joint injuries.
2. Briefly describe their clinical features, principles of management and complications.

F. LOWER LIMB FRACTURES & DISLOCATIONS

1. Enumerate major long bone fractures and joint injuries.
2. Briefly describe their clinical features, principles of management and complications.

G. SPINAL FRACTURES AND DISLOCATIONS

Outline the mechanism, clinical features, principles of management and complications of spinal injuries.

H. RECURRENT DISLOCATIONS

Outline the mechanism, clinical features, principles of management and complications of recurrent dislocations of the shoulder and patella.

I. AMPUTATIONS

1. Classify amputations, list indications for surgery.
2. Outline pre-operative, operative and prosthetic management.
3. Outline prevention and treatment of complications.

J. BONE & JOINT INFECTIONS

Outline the etiology, clinical features, management and complications of: septic arthritis, Osteomyelitis, Tuberculosis (including spinal T.B.)

K. BONE & JOINT TUMORS

Classify and outline the clinical features, management and complications of common (benign/malignant) bone and joint tumours.

L. CHRONIC ARTHRITIS

Outline the pathology, clinical features, mechanism of deformities, management and complications of: Rheumatoid arthritis, Osteoarthritis of major joints and spine, Ankylosing spondylitis.

M. LOWBACK ACHE, PAINFUL ARC SYNDROME, TENDONITIS & FASCITIS

Outline the above including clinical features and management.

N. SPINAL DEFORMITIES

Classify spinal deformities and outline the salient clinical features, management and complications.

O. POLIOMYELITIS

Describe the pathology, microbiology, prevention, management and complications of polio. Outline the treatment of residual paralysis including use of orthoses and muscle transfers.

P. CONGENITAL DEFORMITIES

Outline the clinical features and management of CTEV, flat foot, vertical talus, limb deficiency (Radial club hand and femoral, tibial and fibular deficiencies) meningoencephalocele and Arthrogryphosis multiplex congenita.

Q. PERIPHERAL NERVE INJURIES

Outline the clinical features and management, including reconstructive surgery of:

1. Radial, median and ulnar nerve lesions.
2. Sciatic and lateral popliteal lesions.
3. Brachial Plexus injuries including Erbs, Klumpke's & Crutch Palsy.

R. HAND INJURIES

Outline of clinical features, management and complications of:
Skin and soft tissue injury, Tendon injury, Bone and joint injury.

S. LEPROSY

Outline of clinical features, management and complications of neuritis, muscle paralysis, trophic ulceration and hand & feet deformities.

EVALUATION

Internal : Theory ,Orals

External: Theory , Orals.

CLINICAL NEUROLOGY

Examination at the end of 3rd year

Instruction hours : 55

COURSE DESCRIPTION

Following the basis science and clinical science course this course introduces the student to the neurological conditions which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations imposed by neurological pathology on the functioning of the individual.

COURSE OBJECTIVES

The objective of this course is that after 55 hours of lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of neurological conditions causing disability and their management.

In addition, the student will be able to fulfil the following objectives of the course.

COURSE OUTLINE

A. NEUROANATOMY

Review the basic anatomy of the brain and spinal cord including: Blood supply of the brain and spinal cord, anatomy of the visual pathway, Connections of the cerebellum, and extrapyramidal system, relationship of the spinal nerves to the spinal cord segments, Long tracts of the spinal cord, the brachial and lumbar plexuses, and cranial nerves.

B. NEUROPHYSIOLOGY

Review in brief the neurophysiological basis of : tone and disorders of tone and posture, bladder control, muscle contractions and movement and pain. Functions of the lobes of the brain

C. CLINICAL FEATURES & MANAGEMENT

Briefly outline the clinical features and management of the following Neurological Disorders:

1. Congenital and childhood disorders.,
 - a. Cerebral Palsy.
 - b. Hydrocephalus.
 - c. Spinal Bifida.

2. Cerebrovascular accidents.
 - a. General classification: thrombotic, embolic, haemorrhagic & inflammatory strokes.
 - b. Gross localization and sequelae.
 - c. Detailed rehabilitative programme.
3. Trauma - board localization, first aid and management of sequelae of head injury and spinal cord injury.
4. Diseases of the spinal cord.
 - a. Craniovertebral junction anomalies
 - b. Syringomyelia
 - c. Cervical and lumbar disc disease.
 - d. Tumours,
 - e. Spinal arachnoiditis.
5. Demyelinating diseases (central and peripheral)
 - a. Guillain - Barre syndrome.
 - b. Acute disseminated encephalomyelitis.
 - c. Transverse myelitis.
 - d. Multiple sclerosis.
6. Degenerative disorders.
 - a. Parkinson's disease.
 - b. Dementia.
7. Infections.
 - a. Pyogenic Meningitis sequelae.
 - b. Tuberculous infection of central nervous system.
 - c. Poliomyelitis.
8. Disease of the muscle classification, signs, symptoms, progression and management.
9. Peripheral nerve disorders.
 - a. Peripheral nerve injuries: localisation and management.
 - b. Entrapment neuropathies.
 - c. Peripheral neuropathies.
10. Miscellaneous.
 - a. Epilepsy : Definition, classification and management.
 - b. Myasthenia Gravis: Definition, course and management.
 - c. Intracranial tumours: Board classification, signs and symptoms.
 - d. Motor neuron disease.

D. ASSESSMENT

Clinical assessment of neurological function to be taught through, bedside or demonstration clinics spread out over at least 5 sessions.

1. Basic history taking to determine whether the brain spinal cord or peripheral nerve is involved.
2. Assessment of higher cortical functions such as orientation, memory, attention, speech and language, agnosia, apraxia etc
3. Assessment of Cranial Nerves.
4. Assessment of Motor Power.
5. Assessment of sensory function, touch, pain and position.
6. Assessment of tone- spasticity, rigidity, hypotonia.
7. Assessment of cerebellar function.
8. Assessment of gait abnormalities.

EVALUATION :

Internal Tests -

University Examination -

Theory and Orals.

Theory and Orals.

PHARMACOLOGY

Time allotted : 10Hours

NOTE: Although the time slot appears to be 1 hour lectures 10 in all, it is strongly recommended that this be altered to 10 lectures to 90 minute duration each – to make the course meaningful and profitable to the candidates despite the fact that NO examination has been incorporated.

LECTURE NO:

DETAILS OF SUBJECT MATTER.

Introduction to Pharmacology – Terminology – Against Antagonist Pharmacokinetics, Pharmacodynamics, Pharmacotherapeutics, Toxicology Drug – Receptor interaction – Association – Dissociation constants, Routes of administration – Absorption – Distribution – Termination of actions.

Autonomic Pharmacology – neurotransmitters, Acetylcholine, sites of action. – Epinephrine, Norepinephrine – Cholinergic blockers of muscarinic and nicotinic function – Belladonna alkaloids, synthetic substitutes, adrenergic blockers, both alpha and beta blockers and blockade.

Cardiovascular Pharmacology – Congestive Cardiac failure – glycosides – Angina AND ANTIANGINAL AGENTS – Antihypertensives – Diuretics – beta blockers, calcium channel blockers, ACE – inhibitors, – Peripheral vascular disease and vasodilators – Cardiac antiarrhythmic agents.

Blood disorder – anemia, iron deficiency anemia, iron substitute as therapeutic tool – Megaloblastic anemia – cyanocobalamine – Shock – plasma substitutes, plasma expanders, vasoconstrictors – coagulants and anticoagulants – heparin and coumarins.

Neuropharmacology – Sedatives and Hypnotics, barbiturates and their antagonists – Narcotics and narcotic analgesics – Opioids Dangers of addiction – prevention Role of superficial and Topical remedies in induction of analgesia – Demonstrate preparation of a Liniment.

Behavioral Pharmacology and Psychopharmacology – Anxiety states, Antianxiety drugs – Benzodiazepines – Diazepam congeners – Mood disorders and depressed states – antidepressants Lithium – Psychodysletics and their dangers in misuse among student population.

Movement Disorders – Parkinsonism – CHARACTERISTICS OF DISEASE, tremor, rigidity – chemotherapy, Epilepsies – types – drug management of disease – Spastic disease – drug treatment of acute muscle spasms – gastro intestinal pharmacology, hyperacidity, antidiarrhoeals, purgatives.

Inflammatory diseases - anti-inflammatory agents - Analgesics + Nonsteroidal anti-inflammatory agents- Aspirin, paracetamol, indomethacin, diclofenac, piroxicam, mefenamic acid, Steroidal AGENTS, GLUCOCORTICOIDS, PREDNISOLONE, dexamethasone, betamethasone, beclomethasone.

Endocrine disorders - thyroid - hypo and hyperthyroidism, diabetes and insulin - oral hypoglycemic agents, gonadal hormones - oral contraceptives - role in arthritic conditions of glucocorticoids - dangers of prolonged use of steroidal agents

Chemotherapy - bacterial infections - drugs against microorganism - sulphonamides, antibiotics, floxacins - Parasitic infestations malaria, amebae, filariasis - flagellates - Respiratory Pharmacology use of broncho dilator - airway clearance - Cancers - antimitotics, antimetabolites, irradiation - radioactive materials cancers.

RADIODIAGNOSIS

Outline the basic views used in radiography, list the different types of radiodiagnostic methods using X-ray, CT Scan, Ultrasonogram. Outline the guidelines for interpretation

Demonstrate X-rays showing different anomalies of the "spine" in comparison with a normal X-ray.

Outline the value of C.T. Scan of Brain and Spinal cord in diagnosis, recognize some of the normal and abnormal features.

Outline the value of MRI of Brain and spinal cord in diagnosis, recognize some of the normal and abnormal features.

Identify on X-rays; Fractures and dislocations of extremities and spine, different disorders of bone, Eg.: Osteomyelitis, osteoporosis, rickets, tumours, etc.

OPHTHALMOLOGY
Lecture -- demonstrations only

Briefly outline the following:

1. Eye lesion in leprosy, including causes, treatment and complications of Igophthalmos.
2. Field defects arising from lesions in the visual pathway, their clinical symptoms and methods of testing.
3. Effect of paralysis of the ocular muscles and treatment.
4. Causes, clinical features and a treatment of disorders of ocular movement occurring in diseases such, as myasthenia gravis, progressive supranuclear palsy and lower motor neuron disease.
5. Causes, clinical features, treatment and prognosis in visual failure arising from cataract, inflammatory disorders, vitamin A deficiency, Glaucoma and Trachoma; emphasis on preventable causes and prophylactic measures.
6. Define blindness, and visual disability evaluation. Investigative procedures used for testing visual failure, including basic screening procedures for visual acuity suitable for community health surveys.

E.N.T. Syllabus
Lecture -- demonstrations only

1. Outline the Anatomy and physiology of hearing and the use of audiometry in assessment of hearing.
2. Briefly classify causes of hearing loss Outline conservative and surgical intervention, including types and availability of hearing aids.
3. Briefly outline the functions of the vestibular apparatus.
4. Briefly outline common ENT infections and diseases which affect hearing, breathing and speech; and their management.

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I. Help students to identify their client's psychiatric problems in relation to the practical situations observed in OT. E.g., Restlessness manifesting as decreased concentration and attention.

J. Counseling: Guidelines and practical demonstration

K. Discuss OT assessment, treatment aims, plan and methods of treatment for the following conditions:

- Schizophrenic and other Psychotic disorders
- Mood disorders
- Anxiety disorder including Phobias
- Somatoform disorders
- Factitious disorders
- Eating and sleep disorders
- Psychosomatic illness
- Personality disorders
- Substance related disorders
- Seizure disorders
- Organic Brain Syndrome
- Mental Retardation

L. Review psychiatric problems of childhood and apply OT principles and techniques.

M. Outline the types of therapeutic groups and briefly discuss the value of group therapy in psychiatry (Detailed study on group study is included in Group process in Occupational therapy in the 4th Year.)

N. Explain precautions to be observed by the therapist in a psychiatric unit, with reference to each condition, including handling of tools and materials, grouping and attitude of the therapist.

O. Outline the following psychiatric setups and the role of OT in each.

- a. Therapeutic community
- b. Half Way Homes
- c. Geriatric units.
- d. Sheltered workshops
- e. Day care centers.
- f. Government mental hospitals and psychiatric institutions
- g. Family therapy units
- h. Psychiatric rehabilitation

EVALUATION : Internal Examination in Theory, Practicals and Orals.
University Examination in Theory, Practicals and Orals.

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Occupational Therapy in Psychiatry

Examination at the end of

Instruction Hours : 75

COURSE DESCRIPTION

This course follows the study of clinical psychology and psychiatry. It covers the practical application of occupational therapy in psychiatric treatment, including a variety of assessment and treatment approaches.

COURSE OBJECTIVES

The objectives of this course is that after 475 hours of lectures, demonstrations, practical and clinics the student will be able to demonstrate an understanding of evaluation and therapy techniques used in occupational therapy for psychiatric conditions.

In addition, the student will be able to fulfil the following objectives of the course:

- A. Describe the history of psychiatric occupational therapy, and its development upto the present day.
- B. Define OT in relation to psychiatry, and the role of an occupational therapist in the psychiatric team.
- C. Describe the general characteristics of a potential client. Identify problems that make a person seek help. Compare types of referrals. Discuss the potential of psychiatric OT in the community.
- D. Discuss the role of activities in psychiatric treatment, including patient, therapist, activities and context of treatment.
- E. Frames of Reference in the treatment of psychiatric conditions :
 1. Cognitive behaviour.
 2. Behavioural.
 3. Psychoanalytical.
 4. Occupational behavior and Model of Human Occupation
 5. Therapeutic use of self.
 6. Projective techniques.
 7. Developmental groups and developmental approach.
 8. Mosey's adaptive skills.
 9. Sensory integrative approach.
- F. List and describe the various attitudes applied by the therapist in different conditions.
- G. Analyse activities with reference to psychiatry and psychodynamics of activities.
- H. Describe in detail the assessment of a client including specific methods used in the following:
 1. Observation.
 2. Interest checklist.
 3. Interview.
 4. Personality questionnaire.
 5. ADL.
 6. Vocational and Pre-vocational.
 7. Social dysfunction rating scales – to know any one.

F. Legal aspects related to psychiatric patients.

1. Civil responsibility.
2. Criminal responsibility.
3. Testamentary capacity.

G. Clinical teaching, case studies and discussion.

EVALUATION : Internal Theory Tests And University Theory Examination.

- 973 - 451
3. Preventive measures: In relation to consanguinous marriages, adequate ante-natal care, obstetric care, mother and child services, psychological services (eg. child guidance, counselling services)

B. Symptoms of mental illness:

1. Disturbances of consciousness.
2. Disturbances of reasoning and judgement.
3. Disturbances of memory.
4. Disturbances of thought and perception.
5. Disturbances of volition.
6. Disturbances of motor behaviour.
7. Disturbances of speech.
8. Disturbances of affect.

C. Methods of treatment:

1. Individual and group psychotherapy
2. Physical Methods: ECT and related side effects, Psychosurgery.
3. Psychopharmacology and related side effects,
4. Social and rehabilitation.
5. Family interaction, environmental manipulation.

D. Criteria for classification and definition of psychiatric illness.

E. Description of the various clinical syndromes including etiology, clinical features, course, treatment, and prognosis.

To include: Schizophrenic and other Psychotic disorders

Mood disorders
Anxiety disorder including Phobias
Somatoform disorders
Dissociative disorders
Factitious disorders
Eating and sleep disorders
Psychosomatic illness
Personality disorders
Substance related disorders
Sexual dysfunction and gender identity disorders
Organic Brain Syndrome
Psychiatric disorders of childhood
Psychiatric disorders of adolescence
Psychiatric disorders of old age
Psychosomatic syndromes

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CLINICAL PSYCHIATRY

Examination at the end of 2nd year

Instruction Hours: 35

COURSE DESCRIPTION

In this course students will study abnormality of behaviour functioning. It follows the study of Psychology and Clinical Psychology. Course of mental illness, preventive measures, and all clinical syndromes are covered. All treatment theories, approaches, and pharmacological aspects will be considered, with particular emphasis on current use.

This will be done through 30 hours of lectures and 5 hours of clinical experience in cases studies and discussion.

COURSE DESCRIPTION

The objective of this course is that after 30 hours of lectures, demonstrations and clinics the student will be able to demonstrate an understanding of mental illness, methods of assessment and approaches used in therapy.

In addition, the student will be able to fulfil the objectives of the course:

1. Explain the causes and describe preventive measures for mental illness.
2. Describe possible symptoms in relation to clinical syndromes.
3. Discuss methods of treatment and explain the main treatment approaches.
4. Appreciate legal aspects of psychiatric illness and psychiatric management.

COURSE OUTLINE:-

A. 1. Introduction. A brief history of psychiatry, with two special references to India and to ancient Indian medicine and its relationship with psychiatry. History taking in psychiatry including mental examination and assessment.

2. Causes of mental disturbances:

- a. Hereditary factors.
- b. Embryonic development factors.
- c. Birth injury.
- d. Endocrine disease.
- e. Systemic diseases / accidents.
- f. Cerebral diseases.
- g. Emotional factors.
- h. Stresses related to cultural factors.

B. Concepts of normality and abnormality: Causes of abnormality, Criteria for abnormality, Board classification of Current model of abnormal behaviour. Medical model, Psychodynamic model, Behaviouristic model & Humanistic model etc.

C. Functional units of mind, Id ego and super ego - Their functions and interactions.

Role of Defence mechanisms in normal and abnormal behaviour.

D. Evaluation of attention and concentration, perception, memory, thinking, c and related disorders

(possible demonstrations)

E. Intelligence and mental subnormality.

Intelligence test - demonstrations.

Measurement of intelligence - children & adults.

Factors contributing to mental retardation.

Prevention - Remedy and care.

F. Personality Assessment: Questionnaire, inventories, projective techniques.

G. Learning and maturation with specific reference to behavioural aspects.

Behaviour techniques in therapy

H. Counselling, Psychotherapy and Psychodrama.

Brief psychotherapy - Psychodrama.

Students are to be posted in psychiatry to attend the out patient clinics .

EVALUATION

Internal tests and University Examination on Theory

REFERENCES

1. Abnormal Psychology and Modern Life - by C. Coleman.
2. Guide to mental test by Cattell.

BOOKS RECOMMENDED

Abnormal Psychology by T.E. Shanmugam.

G. GERIATRIC PSYCHOLOGY

Specific psychological reactions and needs of geriatric patients.

H. PAEDIATRIC PSYCHOLOGY

Specific psychological reactions and needs of paediatric patients.

I. BEHAVIOUR MODIFICATION

Application of various conditioning and learning principles to modify patient behaviour.

J. SUBSTANCE ABUSE

Psychological aspects of substance abuse: smoking, alcoholism, and drug addiction.

K. PERSONALITY STYLES

Different personality styles of patients.

EVALUATION

Internal: Theory

University: Theory

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CLINICAL PSYCHOLOGY

Examination at the end of 2nd Year

Instruction Hours: 35

COURSE DESCRIPTION

This field of psychology covers the application of psychological principles in the etiology, pathology, assessment and management of abnormal conditions of all age groups. This course runs concurrently with Psychiatry for occupational therapy students. The basic foundation of general psychology would have been covered in 1st semester.

COURSE OBJECTIVES

The objective of this course is that after 35 hours of lectures, demonstrations and clinics the students will be able to demonstrate ability to apply their knowledge of psychology in clinical situations for assessing, understanding, and treating their patients. They will learn to understand themselves, their feelings, attitudes and behaviour.

In addition, the student will be able to fulfil the following objectives of the course:

- A. To evaluate attention, concentration, perception and mention related abnormalities.
- B. To understand and explain behavioural aspects of learning maturation, and appropriately use behavioural techniques in therapy
- C. To evaluate memory, thinking & intelligence and mention related disorders.
- D. To evaluate motivation, emotion and personality and assess their pathological manifestations.
- E. With the concepts of conscious and unconscious mind to explain frustration and conflicts, and to study the role of Defence mechanisms in normal and abnormal conditions.

COURSE OUTLINE

- A. Definition of clinical Psychology.
General and historical introduction of Abnormal Psychology

Psychology in relation to medicine, different schools.

Methods of Clinical Psychology: Case history method, Interview Techniques, Clinical observation, Situational tests, Questionnaires.

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HEALTH PSYCHOLOGY

Examination at the end of: 2nd year

Instruction hours: 35

COURSE OUTLINE

A. PSYCHOLOGICAL REACTIONS OF A PATIENT

Psychological reactions of a patient during admission and treatment: anxiety, shock, denial, suspicion, questioning, loneliness, regression, shame, guilt, rejection, fear, withdrawal, depression, egocentricity, concern about small matters, narrowed interests emotional over reactions, perceptual changes, confusion, disorientation hallucinations, delusions, illusions, anger, hostility, loss of hope.

B. REACTION TO LOSS

Reaction to loss, death and bereavement: shock and disbelief, development of awareness, restitution, resolution. Stages of acceptance as proposed by Kubler-Ross.

C. STRESS

Physiological and psychological changes, relation to health and sickness: Psychosomatics, professional stress, burnout.

D. COMMUNICATIONS

1.Types: verbal, non-verbal, elements in communication, barriers to good communication, developing effective communication, - specific communication techniques.

2.Counselling: Definition, Aim, differentiate from guidance, principles in counselling and personality qualities of counsellors.

E. COMPLIANCE

Nature, factors, contributing to non-compliance, improving compliance.

F. EMOTIONAL NEEDS

Emotional needs and psychological factors in relation to unconscious patients, handicapped patients, bed-ridden patients, chronic pain, spinal cord injury, paralysis, cerebral palsy, burns, amputations, disfigurement, head injury, degenerative disorders, Parkinsonism, leprosy, incontinence and mental illness.

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COMMUNITY MEDICINE

Examination at the end of: IV semester

Instruction hours: 55

COURSE DESCRIPTION

This course will enable students to understand the effects of the environment and the community dynamics on the health of the individual.

COURSE OBJECTIVES

The objectives of this course is that after 55 hours of lectures, demonstrations, practicals and clinics, the student will be able to demonstrate an understanding of the influence of social and environmental factors on the health of the individual and society.

In addition, the student will be able to fulfil the following objectives of the course.

- A. Outline the natural history of diseases and the influence of social, economic and cultural aspects of health and diseases.
- B. Outline the various measures of prevention and methods of intervention- especially for diseases with disability.
- C. Outline the national care delivery system and the public health administration system and the central and state level.
- D. Outline selected national health programmes.
- E. Define occupational health and list methods of prevention of occupational diseases and hazards.
- F. Outline the Employees State Insurance scheme and its various benefits.
- G. Describe the social security measures for protection from occupational hazards, accidents, diseases, and the workman's compensation act.
- H. Outline the objectives and strategies of the national Family Welfare Programme.
- I. Define community based and institution based rehabilitation. Describe the advantage and disadvantages of institution and community based rehabilitation.

-100-

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Occupational Therapy in Neurology & Orthopaedics

Examination at the end of 3rd year

Instruction Hours : 90

COURSE DESCRIPTION

This course follows the study of Neurology and Orthopaedics and involves the application of Occupational Therapy techniques to these conditions. Further study on aspects of rehabilitation and team involvement will be covered in Occupational Therapy in Rehabilitation

COURSE OBJECTIVES

The objective of this course is that after atleast 490 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of evaluation and therapy techniques used in occupational therapy for neurological and orthopaedic conditions.

In addition, the student will be able to fulfil the following objectives of the course:

1. Practically apply basic principles of Kinesiology and functional anatomy to the evaluation and treatment of orthopaedic and neurological conditions.
2. Demonstrate appropriate evaluation procedures for patients with conditions commonly referred from orthopaedics and neurology.
3. Analyse and apply therapeutic activities used biomechanical and neurodevelopmental approaches appropriately.
4. Discuss Psychological factors affecting selection of treatment media.
5. Outline the principles and goals in design, indications, and fitting of hand splints, prostheses, callipers and walking aids.

COURSE OUTLINE

A. Activity analysis and therapeutic activity for Physical conditions including:

1. Selection criteria and grading methods.
2. Positioning and posture.
3. Muscle action and range of motion (Biomechanical approach).
4. Control of movement (Neurodevelopmental approach)
5. Sensory perception Analysis (sensory motor integration approach)
6. Prevocational analysis /assessment potential (Methods to be covered in OT in rehabilitation).

B. Evaluation procedures including:-

ROM, Muscles strength, Muscle tone, Co-ordination, Control of movement, Sensation (cutaneous and cortical), Cognitive Perceptual functions, Hand functions (in detail), Gait, ADL (activities of daily living).

C Approaches – including Biomechanical, Roods, NDT – Bobath for adults, Movement Therapy -Brunnstrom Approach, Proprioceptive neuro muscular facilitation, motor relearning theory and problem oriented approach , Rehabilitative Approach and Affolter approach

D. Application of occupational therapy principles and techniques in evaluation and treatment of the following neurological and orthopaedic conditions to include:

Identification of possible deficits, dysfunction, and potential function improvement.

Planning of long term and short term treatment goals.

Selection and implementation of appropriate treatment techniques, including biomechanical, Neurodevelopmental, psychological, and biofeedback.

Identification of residual dysfunction, application of appropriate training in activities of daily living and adaptation to home environment.

1. Injuries to upper limb and hand, including:
 - a) Peripheral nerve injuries, including appropriate reconstructive surgery & muscle re-education.
 - b) Shoulder hand syndrome.
 - c) Leprosy deformities (including appropriate reconstructive surgery and muscle re-education)
 - d) Volkmann's ischaemic contracture.
 - e) Brachial plexus injury.
 - f) Hand injuries
2. Amputations- upper limb treatment and prosthetic training.
3. Fractures, with emphasis on upper limb and complications.
4. Muscular dystrophy.
5. Motor neurone disease.
6. Multiple sclerosis.
7. Parkinson's disease.
8. Cerebellar ataxia.
9. Cerebrovascular Accidents.
10. Intra cranial tumours.
11. Brain injuries.
12. Guillain Barre Syndrome.
13. Spinal Cord Injuries.
14. Poliomyelitis.
15. Low Back Pain.
16. Spondylitis, Spondyloses, spondylolyses.
17. Total Hip and Knee replacements .

E. Spinal Orthoses: Principles, goals, classification, specification in application, indications and contraindications. Demonstration of methods of training in the use of spinal orthoses.

F a) Hand Splinting.

1. Describe goals of splinting. Explain classification of hand splint and their application to treatment. Identify splint types and materials used.
2. Demonstrate and apply the principles of hand splinting process for preparing splints.

Practical Work:

1. Pattern and measurement taking.
2. Four splints to be made by student (Resting, Dynamic-flexor /extensor, short opponents, finger splint)
3. Low temperature mould splints.
4. High temperature splints (demonstration)
5. POP casting. (demonstration)
6. Carry out check out of splint. Assignment on relevant chapters in books on hand splinting.

b) Upper extremity splints – including (knowledge of elbow conformer, elbow driven hinge, aeroplane splint, shoulder slings)

c) Lower extremity splints :- Knowledge about AFO, FRO, KAFO, foot drop splint-static and dynamic.

d) Other splints:- Microstomia, Facial nerve palsy splint.

File preparation (for hand splints only) – splints and files will be marked.

EVALUATION:-

Internal : Theory , Practical and Oral Tests, Hand splinting file.

University: Theory, Practical and Orals.

Occupational Therapy in Paediatrics

Examination at the end of the 3rd year

Instruction hours : 80

COURSE DESCRIPTION

This course covers the application of the principles of occupational therapy to physical, mental and emotional disorders of childhood. It is the first of five courses in the application of Occupational Therapy.

COURSE OBJECTIVES

The objectives of this course is that after atleast 480 hours of lectures, and atleast * hours of demonstrations, practicals and clinics the student will be able to demonstrate an understanding of:

- Areas of abnormal and delayed development in children from birth of 5 years.
- Psychological reactions of children to hospitalization and to disability.
- Appropriate therapeutic approaches and techniques for the physical, mental and emotional disorders of childhood and related reactions.
- Treatment plans appropriate to a child's condition and stage of development.

COURSE CONTENTS

A. NORMAL DEVELOPMENT FROM BIRTH TO FIVE YEARS.

1. Physical development- Gross and Fine motor.
2. Reflex development + Practical.
3. Perceptual, Cognitive, Social, emotional, Language and Selfcare and Play development
4. Practical (eg. perceptual testing).

B. PSYCHOLOGICAL ASPECTS

1. Psychological reactions to disability in childhood and OT role.
2. Psychological aspects of hospitalization, and OT role.

C. TREATMENT APPROACHES - I (Children's activities)

1. Play Therapy.
2. Creative activities.

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-16h-

D. TREATMENT APPROACHES - II (Practicals)

1. Bobath NDT.
2. Rood's neuromuscular facilitation.
3. Ayre's Sensory Integration Approach.
4. Peto's - conductive Education.
5. Special Education principles of education for perceptual and cognitive training.

E. OT APPLICATION (including review of each condition)

1. Cardiac conditions of childhood.
2. Cerebral palsy
3. Visuo perceptual and Visuo motor dysfunction
4. Muscular dystrophy
5. Erb's palsy
6. Poliomyelitis.
7. Spina bifida and hydrocephalus.
8. Arthrogryphosis and other congenital orthopaedic disorders.
9. Still's disease.
10. Early intervention for congenital neurological disorders (High risk infants)
11. Nutritional disorders.
12. Mental retardation and Down's syndrome.
13. Congenital Syndromes and Chromosomal abnormalities
14. Specific learning disabilities
15. Pervasive Developmental Disorder
16. Attention Deficit Hyperactivity Disorder
16. Behaviour disorders.
17. Visual / auditory loss.
18. Speech and communication disorders.
19. Acquired Immuno Deficiency Syndrome.
20. Haemophilia

F. Occupational Therapy Intervention for specific areas of dysfunction

1. Oromotor dysfunction
2. Pre writing and writing skills
3. Psychosocial dysfunction

G. Paediatric Splinting and Adaptive Devices:

Including, seating devices, Adaptations for feeding, Mobility and Ambulatory devices, Indication and use of splint for correction of CDH

EVALUATION

Internal evaluation: Performance in clinicals

Theory tests

Child development file

University : Theory, Practical and Oral Examination.

Research Methodology and Biostatistics

Not for university Examination

Instruction hours : 30

Course objectives:

After 30 hours of lectures on Research Methodology and Biostatistics the student should acquire a knowledge of principles of scientific methods of enquiry and basic statistical methods of enquiry and basic statistical concepts, be initiated to skills of information searching, identification, retrieval and evaluation, principles of measurement and experimental design. The students should be able to use the above knowledge to carry out a study.

Course Description:

The inclusion of this subject is to provide a basic knowledge and skill to the undergraduate Occupational Therapy students of the following:

Critical review of literature

To be able to plan and carry out a simple study using basic statistical concepts

Course content:

I. Research Methodology:-

1. Stages of research process
2. Developing ideas and defining a research question
3. Literature review
4. Errors in measurement and their control.
5. Reliability and validity
6. Epidemiological measures of disease frequency
7. Research design:
 - I. Quantitative (epidemiological)
 - a. Experiment (clinical, field, community)
 - b. Observational
 - i. Cohort
 - ii. Case control
 - iii. Cross sectional study
 - iv. Ecological study
 - II. Qualitative Research Method (Sociological)
Developing instruments (Delphi technique)
Focus groups
Indepth interview
Key informant interview
8. Ethical issues
9. Critical Appraisal of a research report

Biostatistics

1. Data Collection, basic statistics and graphs
2. Probability and Probability distribution (Binominal and normal)
3. Sampling and sampling techniques.
4. Confidence interval
5. Tests of significance (for large sample and small sample)

T Test

Z Test

Chi square test

6. Non-parametric tests (where to use, sign test and Mann - Whitney U test)
7. Correlation and Regression
8. Epi info

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Occupational Therapy Organization Administration & Work Study

Examination at the end of 4th year

Instruction Hours: 60

COURSE OBJECTIVES

The objective of this course is that after 60 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the principles and methods of organization, administration and work study as appropriate to the OT delivery system and to patient treatment and training.

In addition, the student will be able to fulfil the following objectives of the course.

ORGANIZATION AND ADMINISTRATION

- A. Outline the purpose of the subject in relation to OT Define Organization. Explain aspects of administration in general and in relation to OT work situations. Outline principles of administration.
- B. Describe methods of administration in an OT department.
 1. Records - their purpose eg. attendance, statistics, inventory, stock.
 2. Maintenance of records. eg. methods of community and institutional based departments (CBR & IBR)
 3. Referrals - purpose and types of referral.
 4. Documentation
- C. Demonstrate administration of the following.
 1. Store keeping - materials, inventory records, Purchase ordering, Petty cash accounting.
 2. General maintenance of equipment, furniture, buildings, costing of splints / aids / equipment / articles / make in OT.
- D. Describe and demonstrate: a) Types of correspondence b) Methods of filing.
- E. Describe methods for care of equipment and materials.
- F. Discuss budgeting - including items for an annual budget.
- G. Discuss considerations for construction of a new department, and modification of an old department including: a) Space required b) Allotment of space, eg. Suitability for access, plumbing requirements, & circulation of air.
- H. Plan assessment forms eg. pre-vocational. ADL, hand function & higher functions for initial evaluation and progress recording.
- I. Outline method of writing OT department annual reports. Calculate monthly and annual statistics. Make plans for future requirements eg. consider staff patient ratio, equipment and staff requirements.

J. Plan to organize picnic or sports programme for patients.

K. Outline legal aspects related to rehabilitation: Medico Legal cases, Workmen's Compensation Act & Insurance facilities. Other financial benefits available for the disabled.

L. Outline safety precautions in OT. Discuss considerations relating to the following.

1. When using small hand tools.

2. General safety in the OT department, eg. moving patients, training attenders and "helpers", while using safety machinery, while doing activities outside. Safety precautions in relation to patients with,

- a. Leprosy
- b. Hemiplegia
- c. Paraplegia
- d. Back injuries
- e. Epilepsy, M.R.
- f. Suicidal patients.
- g. Patients with in coordination.

M. Plan teaching methods for assistants and OT students in the clinical situation.

N. Discuss staff management and development, purpose of staff meetings.

O. Practical work to be carried out under supervision, during clinical postings in V & VI semester. Eg. Maintaining records, stores requests, care of equipment, inventory check, costing of aid, adaptations, petty cash records. Documentation

WORK STUDY

A. WORK

Define work. Explain the purpose and need to work and identify its relationship to culture. Describe the importance of work to a handicapped person. Distinguish categories of work. Outline the importance of work study to an occupational therapist.

B. JOB ANALYSIS

Explain the purpose of job analysis. Identify aspects to be analysed-using sample form. Gain experience in analysing different types of job. Carry out individual assignments.

C. PRODUCTIVITY

Define productivity. Mention factors which influence productivity and causes for decreases in productivity.

D. WORK STUDY PRINCIPLES

Perform work measurement related to productivity. Carry out methods of recording and analysing. Use process chart flow diagram accurately.

Prepare a string diagram.

Participate in problem solving-practical activity. Eg. 1) Coffee making using string diagram. 2) Serving of meals in a ward using flow diagram or process chart.

Teach different symbols used in a process chart.

E. WORKING CONDITIONS

Specify importance of good working conditions and their relationship to productivity. List different aspects of working conditions-lighting, ventilation, sanitary facilities, safety precautions, etc.

F. MOTION ECONOMY OR ERGONOMICS

A. Define ergonomics. Describe scope of ergonomic in Occupational Therapy.

B. Objectives of Ergonomics

C. Work simplification and energy saving technique.

D. Joint protection techniques

E. Application of Ergonomics to various aspects of functional performance.

- a. Selfcare
- b. Home-making
- c. School
- d. Occupation
- e. Recreation.

F. Application of ergonomic principles to various physical conditions with the following.

- a. Limited range of motion
- b. Muscle weakness
- c. Limited endurance
- d. In-co-ordination
- e. Pain
- f. Visual Impairment
- g. Cardiac Conditions
- h. Degenerative Disorders.

485
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Practicals

Conduct a practical work study and job analysis of one occupation. This includes a 4 hour observation and interview of worker at his/her job. Each student may choose a different occupation. A written report may be submitted for the same.

Make a visit of observation to a local industry to identify the following:-

a. Physical Environment

- i. Access
- ii. Lighting
- iii. Ventilation
- iv. Temperature
- v. Noise

b. Organisational environment

- i. work flow
- ii. work routine/rest breaks
- iii. work hours/overtime
- iv. work pressure
- v. training
- vi. line of responsibility

c. Individual factors

- i. Worker interaction
- ii. Psychological factors

d. Individual workstation/task/job

- i. tasks
- ii. equipment used
- iii. Tools used
- iv. Work posture & movements
- v. Maximum task time

Assignment on visit with recommendations to be submitted.

EVALUATION

Internals : Theory and Assignments
University : Theory.

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687

Occupational Therapy in Rehabilitation

Examination at the end of 4th year

Instruction hours: 85

COURSE DESCRIPTION

This course covers rehabilitation methods in detail and the application of O.T. to physical conditions not covered in Occupational Therapy in Neurology and Orthopaedics, and including medical, surgical and chronic deforming conditions, visual, hearing deficits. It runs parallel to Rehabilitation Medicine, which is studied together with physiotherapy students. The examination covers both subjects.

COURSE OBJECTIVES

The objective of this course is that after atleast 485 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the OT role in medical and surgical conditions, and rehabilitation methods for people with residual disability.

In addition, the student will be able to fulfil the following objectives of the courses:

- A. Explain the role of O.T. in rehabilitating the physically disabled. Describe in detail ADL and functional assessment, training and planning methods of mobility.
- B. Discuss the removal of architectural barriers, and use of appropriate adaptive devices. Explain purposes and methodology in home situation evaluation.
- C. Explain in detail the O.T. objectives and principles and appropriate treatment media for the following.
 1. Arthritis
 2. Burns
 3. Cardiac and Pulmonary disease and rehabilitation
 4. Hansen's disease – early treatment, prevention of deformity, treatment of neuritis reaction, rehabilitation measures for chronic disabilities. Reconstructive surgery and muscle re-education, Sensory compensation
 5. Amputation, both upper and lower limb including rehabilitation measures.
 6. Cancer
 7. Geriatric conditions, including social implications.
 8. Haemophilia (adults and children).
 9. Terminal illness and Hospice care for adults and children.

10. OT management for pain

11. Visually and Hearing Impaired - Adults.

D. Plan appropriate hand splint design. Prepare and fit four different hand splints, and explain their use.

E. Explain disability evaluation for physical conditions and mention the legal aspects relating to compensation and insurance.

G. **Community Based Rehabilitation: Definition and Models.** Discuss steps involved in starting a Community Based Rehabilitation.

Outline the role and value of O.T. in Community based Rehabilitation (CBR) with emphasis on rehabilitation of disabled children. Identify occupational hazards in the community and discuss possible safety precautions.

Discuss community reintegration

H. Vocational Rehabilitation including Work assessments, Prevocational evaluation, Vocational Evaluation, Job analysis, Work Hardening

I. Observe and interpret psychological reactions in patients with physical disabilities and their relatives, and plan therapeutic approaches and methods for treating such reactions. Understand the principles and use techniques of group dynamics in both psychiatric and physical treatment areas as agents of change in behaviour.

J. Client Centered Therapy; Evidence Based Practice

K. Adjuncts to Therapy :Biofeedback, Functional Electrical Stimulation

L. Wheelchair prescription including adaptations

M. Adaptive devices including Reachers, Mouse and key board adaptations, CP Chair, corner seat.

N. Home evaluation and adapting a house for different types of handicapped people including appropriate working levels, toilet level accessibility, types of stoves, storage levels

- Hygiene and safety measures at home
- Starting a vegetable garden at home
- Planning the days work for a house wife with physical limitations including energy saving techniques.

Special Assessments and intervention for

1. Activities of Daily living
2. Hand Function- Adults and Paediatrics
3. Cognitive Perceptual Functions
4. Home Evaluation and Modification
5. Home Making skills and Child care
6. Prevocational and Vocational Testing and Training
7. Leisure
8. Play

EVALUATION:

Internals: Theory , Practical and Oral Tests.
University: Theory , Practical and Oral Tests.

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Group Process in Occupational Therapy

Examination at the end of 4th year

Instruction hours: Theory- 40
Practicals- 40

COURSE OBJECTIVE:

This course applies general group theory to occupational therapy practice and aims to help therapist function more effectively in groups. The students should gain practical experience in conducting various types of groups in the clinical setting.

COURSE OBJECTIVE:

- Sec. A i. Groups in Occupational Therapy
ii. Groups in Society
iii. Groups in Therapy
iv. Different approaches to group work

- Sec. B Group Dynamics
i. Group Process
ii. Roles
iii. Interaction - verbal and Non verbal
iv. Intra-group relationships
v. Stages of a group
vi. Norms
vii. Group cohesion.

- Sec. C Managing Groups:
i. Planning aims & Goals
ii. Choosing an activity
iii. The environment
iv. Motivating group members

- Sec. D Leadership roles and styles
Developing Group Leader Skills

- Sec. E Managing Problems within a group

- Sec. F. Evaluating Groups.

- Sec. G. Demonstrate ability to plan and organize the following groups:
i. Awareness groups.
ii. Task oriented groups
iii. Stress management groups
iv. Self help groups

- v. Anger management groups
- vi. Assertiveness training groups
- vii. Drama therapy groups
- viii. Social skills training groups.

Evaluation :

Internals: Theory tests , Evaluation of performance in conducting groups during clinicals file submission.

University Examination : Theory.

- A. The concept of group therapy is thoroughly well understood and applied with enough practical competence to contribute to the welfare of the team.
- B. Open-ended and closed forms of discussion groups are conducted with confidence through appropriate strategy.
- C. Medical and nursing aspects of assessing individuals with mental illness is understood.
- D. Identification of resistant patients is carried out with sensitivity, judgement and awareness.
- E. Facilitation of appropriate group therapy groups is conducted in a professional manner with confidence.

COURSE OUTLINE

I. INTRODUCTION

Define the term, objectives, history, status and principles.

II. THERAPEUTIC TECHNIQUES

Explain the theory and mechanisms of the various techniques and relevant procedures for the following:

- 1. Group facilitation.
- 2. Group support.
- 3. Problem solving.
- 4. Group decision making.
- 5. Group therapy for individual patients.
- 6. Group therapy for families.
- 7. Group therapy for children.

8. Group therapy for the elderly.

9. Group therapy for the disabled.

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REHABILITATION MEDICINE

Examination at the end of 4th year

Instruction hours: 55

COURSE DESCRIPTION

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

COURSE OBJECTIVES

The objectives of this course is that after 55 hours of lectures and seminars, the student will be able to demonstrate an understanding of:

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

In addition, the student will be able to fulfil the following objectives of the course.

COURSE OUTLINE

A. INTRODUCTION

Define the term rehabilitation. Explain its aims and principles

B. THERAPEUTIC TECHNIQUES

Explain the theory and mechanisms of therapeutic techniques, and relevant precautions, for the following:

1. Joint mobilisation.
2. Reducing spasm.
3. Assisting weak muscles.
4. Increasing endurance.
5. Muscle re-education following muscle transfer surgery.
6. Strengthening muscles.
7. Increasing co-ordination.
17. Improving balance.
18. Gait training.

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C. ELECTRO THERAPY MODALITIES : Brief introduction , indications and contra indications

D. COMMUNICATION PROBLEMS

Identify communication problems, classify these and outline principles of treatment / training.

E. BEHAVIOURAL PROBLEMS

Identify behavioural problems in the disabled and outline the principles of management.

F. PAIN

Describe the theories of pain and discuss therapeutic management of pain using various modalities. Describe the common myo-facial pain syndromes and outline their management.

G. EVALUATION OF PHYSICAL DYSFUNCTION

Demonstrate methods of evaluation for physical dysfunction & management of disabilities with particular reference to: Spinal Cord Injury (paraplegia and tetraplegia), Poliomyelitis, Brain Injury, (including stroke and cerebral palsy), Arthritic conditions, Muscular Dystrophy, Hansen's diseases, Peripheral nerve lesions, Fracture disease & chronic cardio - respiratory dysfunction.

H. ORTHOTIC DEVICES

Explain the principles involved in prescribing orthotic devices for different parts of the body. Outline the purpose of each type and list major indications & contraindications and demonstrate methods of training in their use.

I. PROSTHETIC DEVICES

Describe types of artificial limbs and their functions.

Demonstrate methods of training in their use.

J. MOBILITY AIDS

Demonstrate knowledge of the indications for different types of mobility aids, and their functions, eg. wheel chairs, walkers, crutches.

K. PRE-VOCATIONAL EVALUATION

Discuss methods and team involvement in pre-vocational evaluation and training.

L. ARCHITECTURAL BARRIERS

Describe architectural barriers and possible modifications, with reference to Rheumatoid arthritis, Cerebrovascular accident, spinal cord injury, and other disabling conditions.

M. DISABILITY EVALUATION

Outline the principles of disability evaluation and discuss its use.

N. LEGAL ASPECTS

Outline legal aspects of disability in terms of compensation for disability and benefits available to the disabled.

O. SOCIAL IMPLICATIONS

Outline the social implications of disability for the individual and for the community.

P. COMMUNITY BASED REHABILITATION MODULE

Describe a CBR module and compare this with an Institutional based rehabilitation system.

EVALUATION.

Internals : Theory

University : Theory

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503

Clinical Cardio-Respiratory

Instruction Hour: 50

Examination at the end of 4th year along with Work Physiology

COURSE DESCRIPTION

Following the basic science and clinical science courses this course introduces the student to the cardio-thoracic conditions which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitation imposed by cardio-thoracic pathology on the functioning of the individual.

COURSE OBJECTIVES

The objective of this course is that after 50 hours of lectures. In addition to clinics, the student will be able to demonstrate an understanding of cardio-thoracic conditions causing disability and their management.

In addition, the student will be able to fulfil the following objectives of the course.

COURSE OUTLINE

A. ANATOMY AND PHYSIOLOGY

1. Describe in detail the anatomy of the lungs, bronchi and bronchopulmonary segments.
2. List the relationship of the bony thorax and lungs to each other and to the abdominal contents.
3. Briefly describe the variations in the bony cage in the following conditions:
 - a. Cervical ribs
 - b. Rickets - rickety rosary
 - c. Pigeon chest
 - d. Funnel chest
 - e. Scoliosis
 - f. Kyphosis
4. Describe the movements of the thorax: Bucket handle, pump handle.
5. List the muscles of respirations involved in inspirations and expirations (including accessory muscles that are involved).
6. Describe in brief the anatomy of the heart and its blood supply and briefly outline the electrical activity of the myocardium and normal ECG.
7. Describe the physiological control of respiration and highlight the function of the medullary and pontine respiratory centres and peripheral chemoreceptors.
8. Describe the mechanisms for maintenance of blood pressure.
9. Describe in detail the cough reflex.

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503

Clinical Cardio-Respiratory

Instruction Hour: 50

Examination at the end of 4th year along with Work Physiology

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8. Describe the mechanisms for maintenance of blood pressure.
9. Describe in detail the cough reflex.

10. List the mechanical factors involved in breathing. Describe briefly factors affecting lung compliance and airway resistance.
11. List the factors affecting diffusion of oxygen and carbon dioxide in the lungs. Explain ventilation, perfusion and their inter relationship.
12. Outline the energy expenditure of various common activity of daily living.
13. Pulmonary function assessment: Briefly describe the pulmonary function tests and their use, briefly outline the basis and value of blood gas analysis.
14. Briefly outline the principles of cardio vascular stress testing.

B. CARDIAC SURGERY

1. List the cardiac conditions requiring closed heart surgery and briefly describe the following:

Acquired heart diseases (Mitral stenosis and Aortic stenosis), Congenital heart diseases (patent ductus arteriosus, coarctation of aorta.)

2. List the cardiac conditions requiring open heart surgery and briefly describe the following: Congenital (Atrial septal defect, ventricular septal defect, pulmonary stenosis, Tetralogy of Fallot, Transposition of great vessels and A.V. malformation), Acquired (Mitral stenosis, Mitral regurgitation, aortic stenosis, & regurgitation, coronary artery disease).

C. THORACIC SURGERY

1. Describe very briefly the clinical features and management of the following: Fracture ribs, Flail chest, Stove-in chest, Pneumothorax, Haemothorax, Haemopneumothorax, Lung contusion & laceration, Injury to Heart, Great vessels & Bronchus.

2. List the causes of empyema and its treatment. Describe briefly: Intercostal drainage, Rip resection, Decortication and window operation.

3. Outline briefly the clinical features and management of the following suppurative lesions of the lung; Bronchiectasis, Lung abscess, Bronchopneumonia & Aspergillosis.

4. Outline briefly the clinical features and management of carcinoma lung.

5. Outline the extent, use and complications of the following surgical incisions: Anterolateral thoracotomy, Posterolateral thoracotomy and Median sternotomy.

6. Describe the post operative management of patients with: Segmentectomy, Lobectomy, Bilobectomy, Pneumonectomy, Pleuropneumonectomy & Tracheostomy.

7. Outline briefly the principles of various ventilators and their use.
8. Describe in detail the preoperative assessment and management of a patient posted for thoracotomy.
9. Describe in detail the following post operative procedures; management of endotracheal / endonasal tubes, tracheal suction, weaning the patient from the ventilator extubation technique & post extubation care.
10. Describe the principles of Cardio-pulmonary resuscitation; Cardiac massage, artificial respiration, defibrillators and their use.

D. MISCELLANEOUS

1. Briefly outline the management of a patient after a myocardial infarct.
2. Briefly outline the management of a patient with chronic obstructive airway disease.

EVALUATION

Internal: Tests in Theory
University Examination: Theory.

WORK PHYSIOLOGY SYLLABUS

Examination at the end of 4th year along with clinical cardiorespiratory.

Instruction Hours :50

- 1) Physiology of exercise
- 2) Cardiac output and cardiac work during regulation of exercise.
- 3) Cardiac rate during exercise.
- 4) Oxygen consumption of the body at rest and, during exercise and after exercise
- 5) Effect of exercise on
 - a) Caloric intake
 - b) Coronary circulation
 - c) Metabolism
 - d) Renal blood flow
 - e) Contractility of Myocardium
 - f) Blood pressure
 - h) Increase in CO₂ tension and mixing venous blood.
 - i) Increase in pulmonary ventilation

Equipment for Work Physiology

Ergo meter -

Cycle type

Hand hook type and treadmill type.

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PROJECT (Special Study)

Examination at the end of the 4th year

Allotted hours: 170

COURSE DESCRIPTION

The special study is a major project undertaken by student. It is a subject in its own right and must be satisfactorily completed in order for the student to graduate. As an alternative to this, the student can present a record of cases.

The special study requires the student: to identify a problem area of relevance to the theory and / or practice of physiotherapy or occupational therapy; to carry out an investigation of one aspect of that problem area; and to present a clear report on the process and results of the project.

Students are encouraged to identify problems of special interest to them that fall within the interest areas of physiotherapy or occupational therapy services, students are encouraged to aim towards knowledge on the topic in the specified problem area.

COURSE OBJECTIVES

The objective of this course is that at the end of the special study the student will have

1. Developed skills in critical thinking, research methods (including review of literature, formulation of a problem for study, selection of a research strategy to investigate the problem, implementation of that strategy), and the formal presentation of information related to the theory and / or practice of physiotherapy and occupational therapy.
2. Gained an interest in research, writing, and publishing material which contributes to the ongoing development of professional therapy both as a science and an art.

In addition, the student will be able to fulfil the following objectives of the course.

1. Identify problems of relevance to the theory and / or practice of therapy in rehabilitation.
2. Undertake enquiry in to a specific problem area.
3. Formally document the stages of such a study, including description of the problem, the process of investigation, the findings and their implications for therapy education, practice and research.

EVALUATION

Internal : 50 marks will be awarded by internal assessment, which will include the guide.

University: 50 marks will be awarded by external examiner during viva.