MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH

(DEEMED TO BE UNIVERSITY)
CHENNAI

FACULTY OF OCCUPATIONAL THERAPY
AND HOSPITAL
12, Vembuliamman Koil Street, West K.K. Nagar, Chennai – 600 078

Regulation For the

Degree of Occupational Therapy

MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH

(DEEMED TO BE UNIVERSITY)
CHENNAI

Regulations of the University

In exercise of the powers conferred by the Board of Management, Meenakshi University, Chennai hereby makes the following Regulations:

1. SHORT TITLE

These Regulations shall be called "THE REGULATIONS FOR THE BACHELOR OF OCCUPATIONAL THERAPY (BOT) DEGREE COURSE OF MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH".

2. COMMENCEMENT

They shall come into force from the academic year 2019-20 onwards.

The Regulations and the Syllabus are subject to modification by the Standing Academic Board from time to time.

3. TITLE OF THE COURSE

It shall be called Bachelor of OCCUPATIONAL THERAPY (BOT)

4. ELIGIBILITY FOR ADMISSION

a) Candidates belonging to all categories, seeking admission to the B.O.T degree course should possess pass class in higher secondary(+2) examination and should have physics, chemistry, and biology/zoology and botany for admissions.

b) Graduate candidates should have qualified for the B.Sc. Degree of an Indian University recognized by the Association of Indian Universities and accepted as equivalent by the Standing Academic Board and Board of Management of this University subject to such conditions as may be prescribed with one of the following subjects as major subject viz. Physics, Chemistry, Botany, Zoology and another prescribed Science subject of study at least upto the ancillary level; provided that such candidates shall have passed the earlier qualifying examination (Higher secondary examination or an equivalent examination) with the subjects English, Physics, Chemistry, Biology / Botany and Zoology.

c) Wherever the State Board / Body of appropriate authority has taken into account only the Plus Two level marks to determine the class of the candidate and issue the statement of marks accordingly, it alone would be taken into consideration.

d) Wherever the State Board / Body or appropriate authority has taken into account the marks obtained at the Plus One and Plus Two level to determine the class of the candidate and furnish the statement of marks, accordingly, the aggregate of the two examinations shall be taken into consideration.

e) Candidates who have studied abroad, the equivalent qualification as determined by the Association of Indian Universities shall form the guidelines to determine the eligibility and should have passed in the subjects of Physics, Chemistry, Biology (Botany / Zoology) and English upto the 12th Standard level.

f) Any criteria not covered under the above provisions, the ruling of the Eligibility committee shall be adopted.

g) Candidates who have passed the Senior Secondary School examination of National Open School with minimum 5 subjects with any of the following groups of subjects:

   a) English, Physics, Chemistry, Botany, Zoology
   b) English, Physics, Chemistry, Biology and any other language

   (To be read along with "Qualification for Admission" 'a' and 'b')

h) Improvement of marks in the Higher Secondary Examinations. Candidates belonging to all categories who have passed the qualifying examination without acquiring the stipulated minimum academic requirements prescribed in the first appearance are permitted two opportunities for improvement within one year of the first appearance in the qualifying examination for determining the eligibility for admission to the first year BOT Course.

i) Reappearance of failed candidates: Candidates belonging to all categories, who have failed in the qualifying examination in the first appearance are permitted two opportunities within a period of one year following the first appearance in the qualifying examination, for passing of failed subjects to determine the eligibility for admission to the first year BOT course.

5. CRITERIA FOR SELECTION

Students for BOT Degree Course shall be admitted based on performance at the Competitive Examinations held by this University

6. AGE LIMIT FOR ADMISSION

A candidate should have completed the age of 17 years at the time of admission or would complete the age of 17 years on or before 31st December of the year of admission to the first year BOT Degree Course.

7. ELIBILITY CERTIFICATE

No candidate shall be admitted to the BOT Course unless the candidate has obtained and produced Eligibility Certificate issued by this University. The candidate has to make an

application to the University with the Original and Xerox copies of the following documents along with the prescribed fee: 1) Higher Secondary or equivalent Examination Mark Sheet and 2) Transfer Certificate

Candidate should obtain Eligibility Certificate before the last date for admission as notified by the University.

8. REGISTRATION

A candidate admitted to the BOT Course of this University shall register by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to this University through the Head of the Institution within the stipulated date.

9. DURATION OF THE COURSE

The period of certified study for the Course of Bachelor of OCCUPATIONAL THERAPY a shall extend over a period of 4 academic years and six months of Compulsory Rotatory Internship.

10. COMMENCEMENT OF THE COURSE

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

11. ACADEMIC TERMS		
I BOT	-	August 1st to July 31st
II BOT	-	September 1st to August 31st
III BOT	-	September 1st to August 31st
IV BOT	-	September 1st to August 31st

And six months of Compulsory Rotatory Internship

12. CUT-OFF DATES FOR ADMISSION TO EXAMINATION

The candidates admitted from 1st August to 30th September of the academic year will be registered to take up their First year examination on 1st August of the next year.

There will not be any admission after 30th September for the academic year.

13. WORKING DAYS IN AN ACADEMIC YEAR

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

14. ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATIONS

a) No candidate shall be permitted to any one of the parts of BOT examination unless he / she has attended the Course in the subject for the prescribed period and produces the necessary certificates of study and attendance from the Head of the Institution.

b) A candidate is required to put in minimum of 80% of attendance in both theory and practical / clinical separately in each subject before admission to the examination.

c) A candidate, who has not completed the course in any subject and not submitted the course completion certificate from the Head of the Department, will not be permitted to appear for that particular subject alone. If the candidate has got adequate attendance in other subjects he / she will be permitted to appear for examination in those subjects.

d) 80% attendance for the additional period is compulsory.

e) Attendance earned by the student should be displayed on the Notice Board of the department monthly and a copy of the same sent to the University for computerization and parents shall be informed regarding the shortage of attendance of their wards through e-mail (if available) or by post by the Institution.

15. SUBMISSION OF LABORATORY RECORD NOTE BOOK /PROJECT WORK

At the time of practical / clinical examination each candidate shall submit to the Examiners his / her laboratory note book duly certified by the Head of the Department as a bonafide record of the work done by the candidate.

The practical record shall be evaluated by the concerned Head of the Department (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 records at previous examination will be carried over to the next examinations. If a candidate desires he / she may be permitted to improve his / her performance by submission of fresh records.

16. CONDONATION OF LACK OF ATTENDANCE

Condonation of shortage of attendance up to a maximum of 10% in the prescribed eligible attendance for admission to an examination rests with the discretionary powers of the Vice-Chancellor. A candidate lacking in attendance shall submit an application in the prescribed form and remit the stipulated fee 15 days prior to the commencement of theory examination. The Head of the Department and Head of the Institution should satisfy themselves on the reasonableness of the candidates request while forwarding the application with their endorsements to the Controller of Examination who would obtain the Vice-Chancellor's approval for admission to the examinations. No application would be reviewed if it is not forwarded through proper channel.

Condonation of lack of attendance shall be taken up for consideration under the following circumstances:

a) Any illness afflicting the candidate. (The candidate should submit to the Head of the Institution a Medical Certificate from a registered Medical Practitioner soon after he / she returns to the Institution after treatment).
b) Any unforeseen tragedy in the family. (The parent / guardian should give in writing the reason for the ward's absence to the Head of the Institution).

c) Any other leave the Head of the Institution deems reasonable for condonation.

d) 50% of marks in Internal Assessment is compulsory for condonotion of lack of attendance.

17. COMMENCEMENT OF THE EXAMINATIONS

August 1st / February 1st. If the date of commencement falls on Saturdays, Sundays or declared public holidays, the examination shall begin on the next working day.

18. REVALUATION OF ANSWER SCRIPTS

There shall be no revaluation of answer papers of failed candidates in any under graduate examination. However, Re-totaling of failed subjects will be entertained on payment of the prescribed fee.

19. INTERNAL ASSESSMENT

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

b) A minimum of three practical examinations shall be conducted in each subject during an academic year and an average of two best performances 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 Internal Assessment marks by conducting a minimum of two examinations in theory and practical separately and the average may be considered for improvement. If failed candidates do not appear for an improvement in the failed subject (s) the internal marks awarded for the previous examination shall be carried over for subsequent appearance (s).

d) The internal assessment marks (both in written and practical taken together) should be submitted to the University endorsed by the Head of the Institutions 15 days prior to the commencement of the theory examinations.

20. RE-ADMISSION AFTER BREAK OF STUDY

a) The calculation of the break of study of the candidate for readmission shall be calculated from the date of first discontinuance of the Course instead of from the date of admission.

b) Candidates having break of study shall be considered for readmission provided, they are not subjected to any disciplinary action and no charges are pending or contemplated against them.

c) All readmissions of candidates are subject to the approval of the Vice-Chancellor.

d) A candidate having a break of study of less than 6 months shall apply for readmission for condonation to the Academic Officer of this University. The candidate may be readmitted in the corresponding course of study. The candidate has to fulfill the attendance requirements of the University and shall be granted exemption in the subjects he has already passed.

e) A candidate having a break of study of more than 6 months but less than 2 years shall apply for readmission for condonation to the Academic Officer of this University. The candidate may be readmitted to the beginning of the academic year of the course. The candidate has to fulfill the attendance requirements of the University and shall be granted exemption in the subjects he has already passed.

f) A candidate having a break of study of more than 2 years and upto 5 years shall apply for the readmission for condonation to the Academic Officer of this University. The candidates may be readmitted in the corresponding course of study. The candidate has to fulfill the attendance requirements of the University and shall not be granted exemption in the subjects he has already passed.

g) Candidates having a break of study of 5 years and above from the date of discontinuance and more than two spells of break will not be considered for readmission.

21. MIGRATION / TRANSFER OF CANDIDATES

a) Migration / Transfer of candidates from one recognized College to another recognized College of this University or from another University shall be granted as per the recommendations of the Head of the Institutions regulations.

(i) Migration may be considered in exceptional causes* or extreme compassionate ground.

- Death of a supporting guardian, illness of the candidate causing disability, Disturbed conditions as declared by Govt. in the Dental College area.

b) The combination of attendance shall be granted to a transferee for admission to the examinations of this University on payment of the necessary fee and satisfying the regulations.

c) Migration during clinical course of study and Internship shall not be allowed on any ground.

d) All migrations / transfers are allowed on payment of the prescribed fee.

e) All migrations / transfers are subject to the approval of the Vice-Chancellor

22. MARKS QUALIFYING FOR A PASS

A candidate shall be declared to have passed the examination if he / she obtains 50% of the marks in University Theory examination, 50% of the marks in University Practical examination and 50% aggregate in University Theory, Practical, Oral and Internal

Assessment taken together.

23. CLASSIFICATION OF SUCCESSFUL CANDIDATES

a) A successful candidate who secures 75% and above of the marks in his / her first appearance in all the subjects within the prescribed period will be declared to have passed in first class with Distinction.

b) A successful candidate who secures 75% and above of the marks in his / her first appearance in a subject within the prescribed period will be declared to have passed in first class with Distinction in that particular subject.

c) A successful candidate who secures 60% and above of the marks in his / her first appearance in all the subjects within the prescribed period will be declared to have passed in the First Class.

d) All other successful candidates' shall be declared to have passed in Second class.

24. CARRY-OVER OF FAILED SUBJECTS

a) The candidate should pass all the 1st ,2nd,and 3rd year subjects before entering to 4th year

25. PATTERN OF EXAMINATION & SUBJECTS OF STUDY

The Theory Examination will consist of two sections, viz.

Section A	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x2 Marks each	10 Marks		
Section B	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x2 Marks each	10 Marks		
	Theory Total			100	Marks
	Practicals			50	Marks
	Internal Assessment			50	Marks
	Viva – Voice			50	Marks
			Grand Total	250	Marks

Minimum for Passing
50% marks in the University written examination
50% marks in the University practical examination
50% marks in the aggregate of written, oral, practical and internal assessment

Scheme For Examinations

Paper	Subjects	Duration (Hours)	Internal Assessment	University Theory	Viva	Practical	Total
Ist Year							
I	Psychology/sociology	3	50	100	Nil	Nil	200
II	Anatomy	3	50	100	50	Nil	200
III	Physiology	3	50	100	50	Nil	200
IV	Biochemistry and Pharmacology	3	50	100	Nil	Nil	150
V	Basics of Occupational Therapy and Therapeutic Activities	3	50	100	50	100	300
VI	English and Basics of Computer Science	Nil	50	Nil	Nil	Nil	50
V	Environmental Sciences	Nil	50	Nil	Nil	Nil	50
VI	Disaster Management	Nil	50	Nil	Nil	Nil	50
IInd Year							
I	Microbiology & Pathology	3	50	100	Nil	Nil	150
II	General Medicine, General Surgery ,ENT, Pediatrics, Ophthalmology	3	50	100	Nil	Nil	150
III	Biomechanics, Applied Anatomy and Physiology	3	50	100	50	Nil	200
IV	Fundamentals for occupational Therapy Practice	3	50	100	50	100	300
V	Clinical Orthopedics and Radiodiagnosis	3	50	100	50	Nil	200
VI	Clinical Neurology and Radiodiagnosis	3	50	100	50	Nil	200
IIIrd Year							
I	Community Medicine, Basic Nursing and First Aid	3	50	100	Nil	Nil	150
II	Health Psychology, Clinical Psychology, and		50	100	Nil	Nil	150

	Clinical Psychiatry	3					
III	OT in Psychiatry	3	50	100	50	100	300
IV	OT in Orthopaedics and Neurology	3	50	100	50	100	300
V	OT in Paediatrics	3	50	100	50	100	300
VI	Bio-Statistics And Research Methodology	3	50	100	50	Nil	200

Paper	Subjects	Duration (Hours)	Internal Assessment	University Theory	Viva	Practical	Total
IV Year							
I	Clinical Cardio Respiratory And Work Physiology	3	50	100	50	Nil	200
II	Rehabilitation Medicine	3	50	100	Nil	Nil	150
III	Organization and Administration in Occupational Therapy	3	50	100	Nil	Nil	150
IV	Occupational Therapy in Rehabilitation	3	50	100	50	100	300
V	Group Process in Occupational Therapy	3	50	100	Nil	Nil	150
VI	Project	Viva Only	50	Nil	50	Nil	100

Note : Medicine Paediatrics & Pharmacology – Section A Essay from Medicine and Paediatrics only: Section B ENT, Ophthalmology & Surgery – Essay from Surgery only

Fundamentals for Occupational Therapy Practice: Viva on Section I and II Practical on Section II Only

25. COMPULSORY INTERNSHIP TRAINING

All candidates of bachelor of OCCUPATIONAL THERAPY must undergo a compulsory rotatory internship for a period of six months after the successful completion of the final examination.

26. AWARD OF DEGREE

The degree shall be awarded by the university only after the completion of the compulsory internship training for a period of not less than six months.

RECOMMENDED CLOCK HOURS OF INSTRUCTION FOR EACH SUBJECT

Sl.No	Subject	Theory Hours	Clinical / Practical Hours
29	Occupational Therapy in Psychiatry	75	400
	1st YEAR		
1	General Psychology	55	-
2	Sociology	50	-
3	Anatomy	250	-
4	Physiology	150	-
5	Research Methodology	100	-
6	Bio-Statistics	-	30
7	Basic Computer Science	30	-
8	Medical terminology	20	-
9	OT - Orientation	-	30
10	Goniometry	-	30
11	Muscle testing	-	30
12	Seminar (OT)	10	-
13	Environmental Science	100	-
14	Disaster Management	30	15
	2nd YEAR		
15	Microbiology and Pathology	50	-
16	General Medicine, Surgery and Paediatrics	140	-
17	ENT, Ophthalmology, Radio diagnosis, Pharmacology	40	40
18	Biomechanics and Applied Anatomy	100	-
19	Applied Physiology	30	-
20	Clinical Orthopaedics	55	-
21	Clinical Neurology	55	-
22	Fundamentals for Occupational Therapy practice	60	40
23	OT Clinical Placements (Peadiatrics, Psychiatry, Orthopedics and Neurology)	-	600
	3rd YEAR		
24	Community Medicine	55	-
25	Basic Nursing and First Aid	40	12
26	Health Psychology	35	-
27	Clinical Psychology	35	-
28	Clinical Psychiatry	35	-

Sl.No	Subject	Theory Hours	Clinical / Practical Hours
29	Occupational Therapy in Psychiatry	75	400
30	Occupational Therapy in Orthopaedics and Neurology	55	660
31	Occupational Therapy in Paediatrics	100	400
32	Research Methodology And Biostatistics	100	60
33	Clinical Cardio Respiratory	50	-
35	Work Physiology	50	-
36	Rehabilitation Medicine	55	-
37	Organization and Administration and Work Study in Occupational Therapy	30	15
38	Occupational Therapy in Rehabilitation including Bio-Engineering (CBR, Cardio Respiratory)	110	540
39	Clinical Posting in Occupational Therapy	40	170
40	Project Work	-	170

Recommended clock Hours per year (Miscellaneous)

1	Library Hours	100
2	Physical education	35
3	Seminars / Case Discussion (Except 1st year)	50
4	Internal Assessment	70
5	Guest Lecture / CME/ Conference (Except 1st year)	20

Recommended Hours for Clinical work and Internship

Clinicals(1^{st} year to 4^{th} year)	2030
Ist Year	100
IInd Year	600
IIIrd Year	800
IVth Year	530
Internship	**1150**
Total Hours	**3180**

First Year

Subjects

1. General Psychology and Sociology
2. Anatomy
3. Physiology
4. Biochemistry And Pharmocology
5. Basic Principles of Occupational Therapy
6. English & Basics Of Computer Science
7. Environmental studies
8. Disaster Management

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 approaching their dealings with patients during admission, treatment, rehabilitation, and discharge.

COURSE OBJECTIVES

The objective of this course is that after 55 hours of lectures and seminars, 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 fulfill 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 defense mechanisms and learn counseling 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, counseling, 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, Binet Kamat Test of Intelligence and Malins Intelligence Scale

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.
Social motives: 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 department. List and define the 8 stages as proposed by Erickson, 4 concepts of learning as proposed by Dollard and Miller; drive, cue, response and reinforcement.

4. Personality assessment; interview, standardised, non- standardised,exhaustive and stress interviews, list and define inventories BAI, 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; problem solving, decision making, 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: Physical 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, Counseling and religious conversion).

M. DEFENCE MECHANISMS OF THE EGO

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

Evaluation : Internal - Theory

University -Theory

Recommended Book(s) for Reference include:

1. Introduction to Psychology by Morgan and King

2 Psychology for Physiotherapists by Thangamani Ramalingam and Dibyendunarayan Bid

S O C I O L O G Y

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, seminars, 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 fulfill 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.

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.

E. 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.

H. 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 improvement of health and in rehabilitation.

J. SOCIAL CONTROL

Meaning of social control, role of norms, folkways, customs, orals, 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

Recommended Book(s) for reference include:
Introduction to Sociology by Dr. Sachdeva Vidya Bhushan
Sociology for Nursing and Allied Heath Sciences by Madhusudan, Tara

ANATOMY

A. 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 OCCUPATIONAL THERAPY in patients.

B. COURSE OBJECTIVES

The objective of this course is that after 250 hours of lectures, demonstrations, and practical's, the student will be able to demonstrate knowledge in human anatomy for the study and practice of OCCUPATIONAL THERAPY.

In addition, the student will be able to fulfill with 75% accuracy (as measured written and oral internal evaluation) the following objectives of the course.

C. CONTENT

1) Introduction
   Define Anatomy and mention its subdivisions Name
   regions, cavities and systems of the body Define
   anatomical positions and anatomical terms.
2) Cell
   Define a cell
   Mention the shape, size and parts of a cell
   Name and give functions of organs. Names of cell bodies
   Define chromosomes, genes
   Review mitosis and meiosis. Mention the main events, but stages not necessary.

3) Tissue
   Classify tissues
   Classify and mention the microscopic structure, types of tissues such as epithelial, connective, muscular and nervous tissue. Give examples for each type of tissue.

4) Cardio-Vascular System
   a) Comprehend the external and internal features of heart and their implications,
   b) Mention position of the heart, c) Identify and name the chamber of the heart, surface and border of heart, d) Identify the venae cavae, pulmonary trunk and aorta, e) Mention the internal features of the chambers of the heart

   a) State the basic features of the blood supply and 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 a) Mention the position and general distribution of major arteries and veins and name their main branches, b) Name the types of arteries and veins; give examples and indicate basic microscopic structure of type of blood vessels.

5) Lymphatic System

Comprehend the general and regional arrangements of the lymphatic system Name the lymphatic organ and mention their location

Illustrate the basic structural features of lymphatic vessels, lymph nodes, thymus, spleen and tonsils

Assign functional role to the Lymphatic System State the position and immediate relations of spleen

6) Respiratory System

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 innervations of bronchi and lungs

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, f) Name the components of the hilum of the 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.

7) Digestive System

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 faucets, f) Identify internal features of the mouth and pharynx of the specimen

a) State the position, course and extent of oesophagus, b) Identify oesophagus of the specimen, C State the basic nerve supply

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

a) Name the subdivision of the intestine and mention their positions, b) Mention the difference between small and large intestine

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

Mention the position and gross features of the liver and biliary system

Name the position and subdivision of the pancreas

a) Name the major salivary gland, b) Indicate their positions, c) Mention the site of opening of their ducts.

8) Genito-Urinary System

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

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 innervations of the bladder, e) Name and identify the subdivision in the male urethra, f) Mention the position, extent and immediate relations of 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

a) List and locate the parts of the male reproductive system. State the anatomy and functional considerations of the testes, 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

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

Name the common, internal and external iliac arteries.

9) Nervous System

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, 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 grey 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 fibers 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

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 fiber 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 and identify the location of gyri, sulci and cortical areas, g) State and identify association, commissural and projection fibers, h) Define and identity 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.

Outline the basic structure of sensory organs-Nose, Tongue, eye, ear, and skin.

Briefly outline the nature and basis of muscle tone. Mention the anatomical pathway involved in the production and maintenance of muscle tone.

a) State the formation, circulation and drainage of CSF, b) Locate and 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) Recognize the difference between extra dural, subdural and subarachnoid hemorrhage.

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

a) Mention the position and structure of the autonomic nervous system,
b) Mention the site of origin and termination of the preganglionic and postganglionic sympathetic and parasympathetic fibers, c) Name and locate the sympathetic and parasympathetic ganglia, d) Summarise the functional difference between the sympathetic and parasympathetic system.

a) Enumerate the cranial nerves in serial order, b) Mention the nuclei of origin and termination and indicate the site of attachment to brain/brain stem, c) Explain the general distribution of the cranial nerves and the course of the 5^{th} nerve, d) Predicate the result of injury to cranial nerves.

a) Anatomy of spinal cord- review, b) Name the group of spinal nerves,
c) Explain the formation and branches of the spinal nerves and distribution of anterior and posterior rami, d) Locate and name the plexuses of nerves,
e) Indicate the course and distribution of branches of the plexuses and nerves.

10) Endocrine System

List the endocrine organs and mention their position.
Mention the hormones produced by each endocrine organ.

11) Introduction to Bones

a) Define skeleton, b) 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, c) Classify the bones and give examples, d) Enumerate the common surface feature of bones, e) Define ossification. Explain the types of ossification and give examples. Define ossification centre. Explain the growth of long bone in length and width.

When regional anatomy is taught: a) Identify, name and correctly orientate the bone, b) Identify surface, border and all other surface features, c) Mark and indicate the muscular and ligamentous attachments on the bone.

12) Introduction to Joints

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, and 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.

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.

13) Introduction to Muscles

a) Define a skeletal muscle, b) Define fasciae, 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- agonist, antagonist, synergist and fixator; shunt and spurt muscle; type of levers with examples.

When the regional anatomy is taught: a) Mention the position, origin, insertion, nerve supply and action of the skeletal muscles (for the skeletal muscles of soft palate, pharynx, and larynx, position, action, nerve supply may be sufficient), b) Indicate group of muscles by position and action, group action and nerve supply of group of muscles, c) Indicate segment innervations of muscles,
d) Predict the result of paralysis of individual and group of muscles.

14) Upper Extremity

Pectoral region: a) Outline the features of the pectoral region, b) Name, identify and correctly orientate the sternum, clavicle, scapula and humerus, c) Outline the main features of the bones of shoulder girdle, d) Identify the parts, borders and surfaces of sternum. Mention its other features, e) Identify the ends, surfaces, curvatures and other features of clavicle, f) Identify the borders, angles, surface, process, fossa and other features of scapula, g) Identify the ends, head, greater and lesser tuberosities and anatomical and surgical necks of humerus, also the capitulum, trochlea and radial, coronoid and olecranon fossa and epicondyles, h) Locate and identify the muscles of pectoral region, Mention their origin, insertion, nerve supply and action.

Scapular region: a) Comprehend the main features of the muscles in the scapular region, b) State the layer, arrangement of the muscles of the neck, c) Name and identify the muscles of the scapular region. Mention their origin, insertion, nerve supply and action, d) Demonstrate the bony landmark of scapula, humerus and clavicle.

Axilla: a) Mentions - identify the boundaries and contents of axilla. Name the branches of axillary artery. Names, identify the cords and branches of brachial plexus and mention their root value, b) Illustrate the formation of brachial plexus.

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, c) Mention the type of the joints, d) Demonstrate and name the movement of scapula. Mention the chief muscles producing these movements, e) Correlate movement of scapula, f) Assign functional role of the articular disc and sternoclavicualr joint and coracoclavicular ligament.

Shoulder joint: a) Mention the type, articular surface and ligaments of the shoulder joint, b) Define and demonstrate the movements of shoulder joint, c) Name and identify the chief muscles producing these movements. Analyze these movements and mention limiting factors, d) Mention the blood supply and nerve supply of this joint, e) Analyze the associate movement of scapula and movement of the shoulder joint, f) Mention the limiting factors and the factors for its stability. Indicate applied anatomy.

Upper arm: a) Name and identify the muscles at the front and back of the upper arm, b) Name and identify the ends, borders, surfaces and features of the humerus. Identify the head anatomical neck, tuberosities, surgical neck, bicipital groove, condyle, capitulum, trochlea, epicondyles, radial, coronoid and olecranon fossa, c) Mention the origin, insertion, nerve supply and action of muscles of front and back of upper arm, d) Indicate the course, relation and distribution of radial and musculo-cutaneous nerve.

Elbow joint: a) Mention the type, articular surface and ligaments of elbow joint, b) Define and demonstrate the movement possible and name the chief muscles producing this movement, c) Mention the factors for stability and limiting factors, d) Indicate the applied anatomy, e) Mention the applied anatomy, f) Explain the carrying angle.

Forearm, wrist and hand: a) Mention the bones of forearm, Identify the ends, borders, surfaces and features of radius and ulna, b) 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, c) Name and identify the carpal bones, metacarpal bones and phalanges in an articulated hand, d) Identify the muscles of front and back of the forearm, e) Mention the origin, insertion, nerve supply and action of these muscles, f) Indicate the course, relation and distribution of ulnar, median and radial nerves, g) 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. Analyze these movements and apply its functional role in routine day-to-day actions, h) Mention the position and distribution of ulnar and radial arteries and ulnar, median and radial nerves, i) 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, j) Predict the result of paralysis of muscles of the forearm,

k) Mention the functional implications of prehension in the surface of head,
h) Indicate the arrangement of tendons of the digits, retinaculae, fibrous flexor sheaths and synovial sheaths, m) Evaluate the hinge type of interphalangeal
joints, ellipsoid type of metacarpophalangeal joints and saddle type of carpometacarpal joints,

n) Name and identify the small muscles of the hand. Mention their position, origin, insertion, nerve supply and action, o) Mention the types of bones forming and ligaments of the joints of the hand. Define the movement and muscles producing these movements. Predict the result of paralysis of small muscles of the hand, p) Demonstrate the types of grip.

Nerves of upper limb: a) Comprehend and apply the knowledge of the position and distribution of blood vessels and lymph nodes, b) Mention the root value of the nerves, c) Identify the nerves and mention the position, course, relations and distribution of nerves of upper limb, d) Predict the result of injury to these nerves.

Blood vessels of upper limb: a) Comprehend and apply the knowledge of the position and distribution of blood vessels and lymph nodes, b) Trace the main arteries and veins, c) Indicate their position and name the main branches of tributaries, d) Name and locate the lymph nodes.

Cutaneous nerves of upper limb: a) Name the cutaneous nerves and illustrate the areas of their distribution, b) Illustrate the dermatome.

15) Lower Extremity

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 features of 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 sub sartorial 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 the femoral vein.

Medial side of thigh: a) Name and identify the muscles of the medial side of thigh. Mention their origin, insertion, nerve supply and action, b) Indicate the course, relations and distribution of obturator nerve.

Back of thigh: a) Identify and mention the position, origin, insertion, nerve supply and action of the hamstring muscle, b) Indicate the position, course, relations and distribution of sciatic nerve.

Gluteal region: a) Identify and mention the position, origin, insertion, nerve supply and action of the muscles, b) Name and mention the position, and course of the nerves found there and name the arteries there.

Hip joint: a) Mention the type, articular surface and ligaments, b) Define the movement and name the chief muscles producing these movements, c) Mention the blood supply, nerve supply factor for stability and limiting factors, d) Indicate applied anatomy.

Knee joint: a) Mention the type, articular surface and ligaments, b) Define the movement and name the chief muscles producing these movements, c) Analyse the movements, d) Mention the blood supply, nerve supply, e) Indicate applied anatomy, f) Define locking and unlocking of the joint.

Popliteal fossa: a) Indicate the boundaries and contents, b) Mention the position and branches

of tibial and common peroneal nerves.

Front of leg and dorsum of foot: a) Name and identify the tarsal bones, metatarsal bones and phalanges in an articulated foot, b) Name and identify the muscles, c) Mention the position, origin, insertion, nerve supply and action of the muscles, d) Position and distribution of the deep peroneal nerve, e) Indicate the position and attachment of extensor retinaculae, f) Mention and identify the features of tibia and fibula.

Lateral side of leg: a) Name and identify the muscles, b) Mention the position, origin, insertion, nerve supply and action of the muscles, c) State the position,course and distribution of the superficial peroneal nerve, d) Indicate the position and attachment of peroneal retinaculae.

Back of leg and sole of foot: a) Name and identify the features of the bones of the foot, b) Name and identify the muscles of back of leg, c) Mention the position, arrangement, origin, insertion, nerve supply and action of the muscles, d) State the position, course and distribution of the tibial artery, e) State the position and distribution of the posterior tibial artery, f) Indicate the position and attachment of flexor retinaculum, g) Mention the arrangement, origin, insertion, nerve supply and action of the muscles of the foot, h) Indicate the type of formation, and factors for the maintenance of the arch of foot, I) Mention the type, articular surface and 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, j) Palpate and identify the tendons around the ankle and dorsum of foot.

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

Blood vessels: a) Indicate the position of arteries and their branches, b) Indicate the position of veins and their tributaries, c) Indicate the position of lymph nodes.

16) 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 vertebra. Identify a typical vertebra.
State the form, structure and movements of joints of vertebral column. Mention the movements and the muscles producing them.
Identify the intervertebral disc and mentions 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:

a) State the main features of the bones and joints of thoracic cage. Mention the boundaries, b) State the parts and features of sternum, c) Define true, false and floating ribs. Mentions the parts of features of typical rib. Know the main features of a typical rib, c) Mention the type and formation of the joint between and vertebra, between costal

cartilage and sternum and between costal cartilages, d) Mention the type and formation of joints between costal cartilage and sternum and between costal cartilages, e) Mention the type and formation of joints between parts of sternum. Indicate the importance of sternal angle, f) Analyze pump handle and bucket handle movement of rib, g) palpate bony landmarks such as jugular notch, sternal angle, xiphisternum and spine of thoracic vertebra.

a) Define 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,
b) Name the structures passing through the diaphragm and mention the orifices in the diaphragm.

a) Define the boundaries, and subdivision of the mediastinum and list the contents. Identify the contents, b) State the features of thoracic parts of sympathetic trunk.

Abdomen:

a) Mention the main features of lumbar vertebra, sacrum and coccyx, b) Mention the formation and subdivision of bony pelvis. List the features of the female bony pelvis and their role, c) Mention the type, articular surfaces, ligaments and movements of the joints of pelvis.

a) Define a) abdominal cavity, b) List the layers of anterior abdominal wall. Name and mention the origin, insertion, nerve supply and action of muscles, and the features of these muscles, c) Explain the formation of rectus sheath and list its contents, d) Define inguinal and know its position, extent, formation and contents. Indicate its clinical importance. Define inguinal hernia, e) Name and identify the muscles of posterior abdominal wall. Give their origin, Insertion, and action. Lists the organ in the posterior abdominal wall. Name the blood vessels on the posterior wall, f) Mention the position and formation of lumbar plexus. Name its branches, g) State the anatomy of lumbar region. Understand the disposition of muscles of the layers. Mention the arrangement of lumbar fascia. Identify the muscles in the 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 capitis), h) Distinguish abdominal cavity and peritoneal cavity, I) Mention the features of lumbar part of sympathetic trunk and other sympathetic ganglia, j) Mention the branches and distribution of the abdominal aorta and iliac arteries, k) State the inferior vena cava and iliac veins and mention their tributaries.

17) Pelvis

State the main features of subdivision, boundaries, walls and floor of pelvis.
Mention the features of the pubis symphysis and sacroiliac joints.
Distinguish and mention and 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.

8) Head and Neck

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

a) State the main features of the skull and the facial skeleton, b) Identify the large skull bones and their parts, c) Identify the cranial fosse and hypophyseal fossa, d) Identify the internal and external auditory meatus, foramen magnum and stylomastoid foramen and name the main structures passing through them, e) Identify and name the main muscles of the face. Mention their nerve supply and action, f) Predict the result of paralysis to the facial muscles and sequel of injury to the facial nerve, g) Map the cutaneous distribution of the three divisions of the trigeminal nerve on the face

a) Identify the general feature of a typical cervical vertebra, atlas, axis and seventh cervical vertebra, b) Identify the erector spinae, sternomastoid and scalene muscles, glenohyoid. Mention their attachments, actions and nerve supply, c) Identify the phrenic, accessory and vagus nerves. Mention their distribution, d) Identify and state the position, distribution and root value of the nerves of cervical and brachial plexuses, e) Demonstrate the action of sternomastoid, f) Mention the type, articular surfaces, ligaments, movements and muscles producing these movements at the atlantooccipital and atlantoaxial joints. Demonstrate these movements and the movements of the cervical part of vertebral column.

a) Identify the subclavian, vertebral and carotid arteries. Mention the position and extent of these arteries, b) 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, c) Identify the internal jugular and subclavian veins, Mention their position, formation and termination.

a) State the basic organization of the autonomic nervous system, b) State the sites of craniosacral and thoracolumbar outflows, c) Define the mode of the distribution of pre and post ganglionic efferent neurons in sympathetic and

Parasympathetic nervous system, d) Name the cranial nerves containing parasympathetic fibers and mention their distribution, e) Distinguish between sympathetic and parasympathetic 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 nerve.

Name and state the nerve supply and simple actions of the extra ocular muscles. Predict the result of lesions of 3^{rd}, 4^{th} and 6^{th} cranial nerves.

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.

Temperomandibular Joint:

State the type, articular surface, ligaments, possible movements, muscles performing the movements and nerve supply of the temperomandibular 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, palate, 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 7^{th} and 12^{th} 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:

Identify the hyoid and state its parts.
Identify the larynx and name the laryngeal cartilages. State the boundaries of laryngeal inlet and glottis. Identify the vocal and vestibular folds.
State the movements of the laryngeal cartilages. Name the laryngeal muscles and mention their attachments, action and nerve supply.
Define the position, extent and gross structure of the trachea.
State the mechanics of phonation and speech, production of sound voice and speech.

Ear:

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

Cranial Nerves:

Enumerate the cranial nerves in serial order.
Relate interprets the number to the name.
Indicate the nuclei of origin of termination.
Mention the attachments of the brain and the cranial exit.
State the sensory and motor distribution.
State the position and course of 7^{th} nerve.
Predict the sequel of lesion.

REFERENCE

1. BD Chaurasia's Human Anatomy: Vol. 1 to Vol. 4 by B. D. Chaurasia
2. Gray's Anatomy by Henry Gray, Peter L. Williams
3. Cunningham's Manual of Practical Anatomy: Volume 1 to 3 by G. J. Romanes
4. Textbook of Anatomy with Colour Atlas by Inderbir Singh
5. Principles of Anatomy and Physiology, 14th Edition by Gerard J. Tortora, Bryan H. Derrickson

PHYSIOLOGY

A. 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.

B. COURSE OBJECTIVES

The objective of this course is that after 150 hours of lectures, demonstrations Lab practical's the student will be able to demonstrate an understanding of elementary human physiology.

The student will be able to fulfill with 75% accuracy (as measured by written and oral internal evaluation) the following objectives of the course.

C. CONTENTS

1) Cell Introduction

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

2) Skin

   Structure; functions; blood flow; temperature regulation.

3) Blood

   Outline of components; and their functions; RBC; WBC, Platelets, Blood groups.

   Significance of RBC and WBC counts, ESR and other related tests.
   Clotting mechanisms
   Blood volume and its regulation.

4) Circulation

   Structure and properties of cardiac muscle; cardiac cycle. ECG;
   heart sounds, Cardiac output.
   Factors regulating the action of the heart. Blood
   pressure; its maintenance and regulation.
   Cerebral circulation; renal circulation; pulmonary circulation.
   Effects of exercise; effects of postural changes.
   Lymph; factors affecting its flow.

5) Respiration

   Defense 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.

6) Digestion

Digestion in the mouth, stomach and intestine. Bile;
Pancreatic secretion.
Mechanism of control of secretions and motility. Diet
and Nutrition.

7) Excretion

Structure of the nephron.
Formation of urine.
Micturation.

8) Endocrines

Outline the various hormones and their actions with special emphasis on thyroxine and parathyroid hormone.
Homeostasis of calcium and glucose

9) Reproduction

Male reproductive system Female
reproductive system
Outline of pregnancy; functions of placenta; parturition; lactation; contraceptive measures.
Factors that affect fetal growth.

10) Nervous System

Structure of neurons.
Properties of neurons;(excitation and conduction).
Synapse and synaptic transmission; reflexes and properties of reflexes.
Sensory endings
Spinal cord; pathways in the spinal cord
Thalamus; basal ganglia; cerebellum; cerebral cortex. Control of
posture and control of voluntary motor activity. Autonomic
nervous system.
CSF and EEG

11) Special Sense

Vision
Audition; olfaction; gustation; vestibular apparatus.

12) Muscle

Structure of muscle tissue; gross structure and microscopic structure. Arrangement of myofibrils. Myoneural junction.
Chemical processes involved in muscle contraction.
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.
Exercise metabolism, Oxygen debt, Respiratory quotient.
Development of endurance, 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).
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.

Environment and exercise. Adaptation to heat and cold, Exercise in heat and in cold. Human limitation in heat, Acclimatization to heat, Exercise at high altitudes.

D. PRACTICAL

1) Determination of RBC and WBC count.
2) Examination of different types of WBC in stained blood smear.
3) Ischemic pain.
4) Muscle contraction in frog; simple muscle curve; tetany, wave summation, Quantal summation, fatigue.
5) Lung volume.
6) Effect of exercise on ventilation.
7) Physical fitness
8) Determination of BP; effect of exercise on BP.
9) Examination of sensory and motor systems.
10) Examination of superficial and deep reflexes.
11) Tests of vision (acuity and color perception) and hearing (Rhine's test and Weber's test).
12) Cold Pressure Test

REFERENCE

1. **Text book of physiology by L.prakasam Reddy.**
2. **Guyton and Hall Textbook of Medical Physiology by John E. Hall.**
3. **Text book of medical physiology by Sembulingam.**

BIOCHEMISTRY

A. COURSE DESCRIPTION

This course helps the student to understand the basis of elements of biochemistry with special emphasis on metabolism and nutrition

B. COURSE OBJECTIVES

The objective of this course is that after 100 hours of lectures, demonstrations Lab practical's the student will be able to demonstrate an understanding elements of biochemistry.

A. CONTENTS

1) Introduction to biochemistry.
2) Acids, bases, pH and Buffers
3) Chemistry of Carbohydrates: General nature, Classification, Biological importance of Monosaccharide's, Disaccharides and Polysaccharides
4) Digestion and Absorption of Carbohydrates, Fate of Glucose, Outline of metabolic pathways; Glycolysis, Citric acid cycle, Glycogenesis and Glycogenolysis and their Regulation. HMP – shunt pathway Blood Glucose – Normal level and its Regulation. Hyperglycemia and Hypoglycemia – Diabetes Mellitus, Glycosuria – types – Biochemical changes, Carbohydrate tolerance
5) Chemistry of Lipids: General nature, Classification and Biological importance of Fatty acids, neutral fat, Phospholipids, Cholesterol and lipoproteins
6) Digestion and Absorption of Plasma Lipids. Outline of metabolic pathways - β oxidation of fatty acid, Ketone body metabolism, and cholesterol metabolism – an outline. Cholesterol level and its relation to atherosclerosis. Fatty liver and lipotrophic factors.
7) Chemistry of Proteins: General nature, biological importance, classification and properties of aminoacids – Structure and peptide and other linkages – Proteins classification with examples – Physical properties – as colloids – Properties of aminoacids and Proteins
8) Digestion and Absorption of Proteins. Amino acid pool and Protein turnover. Removal of Nitrogen from aminoacids. Transamination, Deamination. Fate of Ammonia and Urea formation. Inborn errors of Metabolism
9) Chemistry of Nucleoproteins: Purines and Pyrimidine bases, Nucleotides and Nucleosides, Nucleic acids – DNA and RNA

10) Nucleic and Metabolism – an outline, Gout.

11) Enzymes: General nature, nomenclature and classification, Mechanism of Enzyme action, Factors affecting enzyme activity, Enzyme inhibition, Zymogens, Isoenzymes and Diagnostic applications

12) Biological oxidation and Oxidative phosphorylation

13) Vitamins: Fat soluble and Water soluble vitamins – Their dietary sources, Requirements, Biochemical functions and deficiency states

14) Minerals: Metabolism of Sodium, Potassium, Calcium, Phosphorous and Iron

15) Water and Electrolyte balance and imbalance

16) Acid base balance

17) Liver function test

18) Renal function test

19) Chemistry of Prophyrins (Heam). Chemical nature and functions of Hemoglobin, Abnormal Hemoglobin, Synthesis and Degradation of Hemoglobin

20) Fundamentals of Nutrition: BMR, SDA, Caloric value of foods, Caloric requirements, Carbohydrate in diet, Fat in diet, Protein in nutrition. Essential aminoacids, Nitrogen balance, Quality of Protein, Biological Value of Protein and Protein Malnutrition

REFERENCE

1. Text book of Biochemistry by Vasudevan.
Text book of biochemistry by Sathynarayana

PHARMACOLOGY

A. CONTENTS

1. General Pharmacology - General Principles of Pharmacology – Drug formulations - Routes of administration of drugs - Drug receptors - Pharmacodynamics – Pharmacokinetics - Adverse drug reactions – Drug-drug interactions

2. Drugs acting on CNS :
   - Analgesics – Narcotic and Non-narcotic agents, COX II inhibitors
   - Sedatives, Anesthetics – General Anesthetics – Gaseous and Intravenous anesthetics - Pre anesthetic medication.
   - Psychotropic drugs - Tranquillisers – Anti depressants
   - Antiepileptic

3. Drugs acting on PNS:
   - Sympathomimetic and Sympatholytic drugs
   - Parasympathomimetic and Parasympatholytic drugs
   - Skeletal muscle relaxants
   - Local anesthetics - mode of action – Dosage & toxicity.

4. Drugs acting on CVS
   - Drugs used in Congestive Cardiac Failure
   - Antihypertensive
   - Vasodilators and Vasoconstrictors
   - Pharmatherapeutic management of Shock

5. Drugs acting on Hemopoietic System:
   - Hematinics- Iron, Vit B 12 and Folic acid
   - Hemostatic agents, Anticoagulants : Fibrinolytic and Ant platelet agents

6. Drugs acting on the Urinary System:
   - Diuretics - Acidifiers and Alkalinizers – Antiseptics

7. Drugs acting on Endocrine system:
   - Hypothalamic and Pituitary hormones
   - Thyroid and Antithyroid Drugs
   - Corticosteroids
   - Insulin and Anti-diabetic drugs
   - Sex hormones and Contraceptives

8. carticoids:
   - Histamine & Antihistaminics
   - Drugs used to prevent Motion sickness

9. Drugs acting on GIT: Drugs for Peptic Ulcer - Emetics & Antiemetics – Antidiarrhoeals – Anorexic agents

10. Drugs acting on Respiratory system: Bronchodilators - Antitussive agents

11. Antimicrobials & Antineoplastic agents :
    - Sulphonamides – Penicillins - Betalactam antibiotics – Quinolones-Aminoglycosides – Macrolides – Tetracylines – Chloramphenicol
    - Antifungal agents
    - Antiamoebic agents
    - Antiviral agents – including Drugs used in HIV and Hepatitis B
    - Antineoplastic chemotherapeutic agents.

REFERENCE

Text book of pharmacology bhathmaja Udyakumar.
Oxford text book of clinical pharmacology and drug therapy by J.K Aronson.

Basic Principles of Occupational Therapy and Therapeutic Activities

Examination at the end of 1st year
Instruction hours: Basic Principles 60
Therapeutic Activities **420**

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 **60** 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 Occupational Therapy

5.Occupation: Definition, philosophy ,Concept, Consequences of Occupational Loss

6. Muscle contractions and therapeutics movements as relevant to Occupational Therapy

- Isotonic, isometric muscle contractions
- Passive, Active, Active assisted and resistive movements

7. Define the characteristic of Activities used as treatment media ,Analysis of

Activities – for physical , psychological and general aspects ,Gradation and Adaptation of Activities

8. 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.

9. General Outline of Department: : Orientation to equipments and referral system..

10. 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.

11. Definition of Model , Frame of Reference and Approaches

12. Models of Practice : Model of Human Occupation, Canadian Model of Occupational Performance, Person Environment Occupational Performance

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 OBJECTIVIES

The objectives of this course is that after **420** hours 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 First year examination.

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

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. Symmography
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
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 prepartation - compiling of methods samples for each activitiy. 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 also be given for projects and files.

C. 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
7. Play

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

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. Home Activities

A. Plan and prepare simple meals.
B. Gardening

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

ENGLISH AND BASICS OF COMPUTER SCIENCE

ENGLISH

COURSE DESCRIPTION: This course is designed to help the student acquire a good command and comprehension of the English language through individual, papers and conferences**. Lecture hours -50**

THEORY

Behavioral Objectives:
The student at the end of training is able to
d Read and comprehend English language
e Speak and write grammatically correct English
f Appreciates the value of English literature in personal and professional life,

UnitI
Introduction: Study Techniques
Organization of effective note taking and logical processes of analysis and synthesis
The use of the dictionary
Enlargement of vocabulary Effective diction

Unit - II:
Applied Grammar:
Correct usage
The structure of sentences
The structure of paragraphs
Enlargements of Vocabulary

Unit - III:
Written Composition:
Precise writing and summarizing
Writing of bibliography
Enlargement of Vocabulary

Unit - IV
Reading and comprehension
Review of selected materials and express oneself in one's words.
Enlargement of Vocabulary. .

Unit - V
The Study of Various Forms of Composition Paragraph, Essay, Letter, Summary, Practice, writing

Unit - VI
Verbal Communication: Discussions and Summarization, Debates, Oral reports, use in teaching

Reference

1. English Grammar Collins, Birmingham University, International Language Data Base, Rupa & Co. 1993

2. Wren and Martin - Grammar and Composition, 1989, Chanda.& Co, Delhi
3. Letters for all Occasions A S Myers. Pub - Harper Perennial
4. Spoken English V Shasikumar and P V Dhanija_ Pub. By: Tata Mcgraw Hill, New Delhi

BASICS OF COMPUTER SCIENCE

Course Description:

1. To study the various components of a personal computer.
2. To have working Knowledge of hardware and software.
3. To practice the operational skill of common computer application including works processing & spread sheet software .
4. To have a basic knowledge of utility of multi- media.
5. To learn skills of web surfing-For literature, research relevance to the field of medicine. –

Lecture hours -50

Introduction to computer- Characteristics of computer, History of Computer,

Generation of Computer, Classification of Computers, IT Applications

Parts of a computer- Input Devices, Output Devices, Central Processing Unit,

Components of CPU, Memory Unit, CISC and RISC, Peripheral Devices

Working principle of a computer- LANGUAGES AND PROGRAMMING,

NUMBER SYSTEM, DATA AND ELECTRONIC DATA PROCESSING,

COMMUNICATION AND NETWORKING, OPERATING SYSTEMS

Importance of computer in physiotherapy

MS-Office – Word, Power Point, Excel, Publisher, outlook Corel Draw Photoshop Web Designing

Internet and its application- Packet switched networks, what is Internet? ,Types of Information

Available on internet ,Internet Address, Organizational Domains, Internet Protocol Address,

Getting Connected to Internet, Types of Internet Access, Direct Connections, Internet Services,

ISDN (Integrated Services Digital Network), NICNCT, Archie

Wide Area Information Server (WAIS), World Wide Web (WWW) Tele Conferencing, Video Conferencing.

REFERENCE

Learning to Use Your Computer by Angela Besant

Teach Yourself Basic Computer Skills by Moira Stephen

ENVIRONMENTAL STUDIES

LECTURE HOURS=100 Hours

Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance
Need for public awareness.

Unit 2 : Natural Resources :

Renewable and non-renewable resources :

Natural resources and associated problems.

a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.
f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
• Role of an individual in conservation of natural resources.
• Equitable use of resources for sustainable lifestyles.

Unit 3 : Ecosystems
• Concept of an ecosystem.
• Structure and function of an ecosystem.
• Producers, consumers and decomposers.
• Energy flow in the ecosystem.
• Ecological succession.
• Food chains, food webs and ecological pyramids.
• Introduction, types, characteristic features, structure and function of the following ecosystem :-
a. Forest ecosystem
b. Grassland ecosystem
c. Desert ecosystem
d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 4 : Biodiversity and its conservation
• Introduction – Definition : genetic, species and ecosystem diversity.
• Bio-geographical classification of India

• Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values
• Biodiversity at global, National and local levels.
• India as a mega-diversity nation
Hot-sports of biodiversity.
• Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
• Endangered and endemic species of India
• Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.

Unit 5 : Environmental Pollution
Definition
• Cause, effects and control measures of :-
a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards
• Solid waste Management : Causes, effects and control measures of urban and industrial wastes.
• Role of an individual in prevention of pollution.
• Pollution case studies.
• Disaster management : floods, earthquake, cyclone and landslides.

Unit 6 : Social Issues and the Environment

• From Unsustainable to Sustainable development
• Urban problems related to energy
• Water conservation, rain water harvesting, watershed management
• Resettlement and rehabilitation of people; its problems and concerns. Case Studies
• Environmental ethics : Issues and possible solutions.
• Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies.
• Wasteland reclamation.
• Consumerism and waste products.
• Environment Protection Act.
• Air (Prevention and Control of Pollution) Act.
• Water (Prevention and control of Pollution) Act
• Wildlife Protection Act
• Forest Conservation Act
• Issues involved in enforcement of environmental legislation.
• Public awareness.

Unit 7 : Human Population and the Environment
• Population growth, variation among nations.
• Population explosion – Family Welfare Programme.

• Environment and human health.
• Human Rights.
• Value Education.
• HIV/AIDS.
• Women and Child Welfare.
• Role of Information Technology in Environment and human health.
• Case Studies.

Unit 8 : Field work

• Visit to a local area to document environmental assets river/Forest/grassland/hill/mountain
• Visit to a local polluted site-Urban/Rural/Industrial/Agricultural
• Study of common plants, insects, birds.
• Study of simple ecosystems-pond, river, hill slopes, etc.

DISASTER MANAGEMENT
(Non-credit)

Didactic30hrs+Practical 15hrs=45hrs

COURSE DESCRIPTION

The course gives an overview of issues related to disaster management including a history of the field, comprehensive emergency management and integrated emergency management, risk reduction and management and current issues in the field.

OBJECTIVES:

At the end of the course, the candidate will be able to:

Cognitive:

a. Defining disaster and the brief history of disasters and its classification
b. Understanding the various approaches to disaster risk reduction and disaster management skills.
c. Comprehending the relationship between disaster and development

Psychomotor

a. To be able to present various disaster and relate it to development and analyse the same.
b. Field work on minimizing the disaster and building the culture of safety.
c. Performing project work, which is creatively designed based on the geographical location and hazard profile of the region where the college is located.

Affective

In the view of disaster, the student should be able to understand and volunteer towards the needs of the society based on the requirements.

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Affective

In the view of disaster, the student should be able to understand and volunteer towards the needs of the society based on the requirements.

Sr. No.	Topics	Didactic Hours	Practical/ Laboratory Hours	Total Hours
1	**Introduction to Disasters**	03		03
2	**Disasters**	05		05
3	**Approaches to Disaster Risk reduction**	06		06
4	**Inter-relationship between Disasters and Development**	08		08
5	**Disaster Risk Management in India**	08		08
6	**Project Work: (Field Work, Case Studies)**		15	
Total		30	15	45

SYLLABUS

Sr. Num	Topic	Didactic Hrs	Practical/labo ratory Hrs	Total Hrs
1	**I. Introduction to Disasters**	**03**		**03**
	Concepts, and definitions (Disaster, Hazard, Vulnerability,Resilience, Risks)			
2	**II.Disasters**	**05**		**05**
	Classification, Causes, Impacts (including social,economic, political, environmental, health, psychosocial, etc.) Differential impacts- in terms of caste, class, gender, age, location, disability Global trends in disasters.urban disasters, pandemics, complex emergencies,Climate Change			
3	**III. Approaches to Disaster Risk reduction**	**06**		**06**
	Disaster cycle - its analysis, Phases, Culture of safety, prevention, mitigation			

	and preparedness community based DRR, Structural- nonstructural nesures, roles and responsibilities of- community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), states, Centre, and other stake-holders.			
4	**IV. Inter-relationship between Disasters and Development**	**08**		**08**
	Factors affecting Vulnerabilities, differential impacts, impact ofDevelopment projects such as dams, embankments, changes in Land-use etc.Climate Change Adaptation. Relevance of indigenousknowledge, appropriate technology and local resources .			
5	**V. Disaster Risk Management in India**	**08**		**08**
	Hazard and Vulnerability profile of India Components of Disaster Relief: Water, Food, Sanitation, Shelter,Health, Waste Management Institutional arrangements (Mitigation, Response and Preparedness,DM Act and Policy, Other related policies, plans, programmesand legislation).			
6	**VI. Project Work: (Field Work, Case Studies)**		**15**	
	The project /fieldwork is meant for students to understand vulnerabilities andto work on reducing disaster risks and to build a culture of safety. Projectsmust be conceived creatively based on the geographic location and hazardprofile of the region where the college is located.			
	Total	**30**	**15**	**45**

Suggested Reading list:

- Alexander David, Introduction in 'Confronting Catastrophe', OxfordUniversity Press, 2000
- Andharia J. Vulnerability in Disaster Discourse, JTCDM, Tata Institute of Social Sciences Working Paper no. 8, 2008
- Blaikie, P, Cannon T, Davis I, Wisner B 1997. At Risk Natural Hazards,Peoples' Vulnerability and Disasters, Routledge.
- Coppola P Damon, 2007. Introduction to International Disaster Management,
- Carter, Nick 1991. Disaster Management: A Disaster Manager's Handbook.Asian Development Bank, Manila Philippines.
- Cuny, F. 1983. Development and Disasters, Oxford University Press.
- Document on World Summit on Sustainable Development 2002.Govt. of India: Disaster

Management Act 2005, Government of India, NewDelhi.

- Government of India, 2009. National Disaster Management Policy,
- Gupta Anil K, Sreeja S. Nair. 2011 Environmental Knowledge for DisasterRisk Management, NIDM, New Delhi Indian Journal of Social Work 2002. Special Issue on Psychosocial Aspects of Disasters, Volume 63, Issue 2, April.
- Kapur, Anu& others, 2005: Disasters in India Studies of grim reality, RawatPublishers, Jaipur
- KapurAnu 2010: Vulnerable India: A Geographical Study of Disasters, IIAS and Sage Publishers, New Delhi.

- Parasuraman S, AcharyaNiru 2000. Analysing forms of vulnerability in adisaster, The Indian Journal of Social Work, vol 61, issue 4, October

Prof. tanki B. AndhariaDr:Anil Kumar GuptaDrThuryaPrakashPelting Mark, 2003 The Vulnerability of Cities: Natural Disaster and SocialResilience Earthscah publishers, London
Reducing risk of disasters in our communities, Disaster theory, Tearfund,2006.

UNISDR, Natural Disasters and Sustainable Development: Understanding thelinks between Development, Environment and Natural Disasters, BackgroundPaper No. 5. 2002.IFRC, 2005. World Disaster Report: Focus on Information in Disaster, pp.182-225.
Publications of National Institute Of Disaster Management (NIDM) and
National Disaster Management Authority (NDMA)

Second Year

Subjects

1. Microbiology & Pathology
2. General Medicine, General Surgery, Pediatrics, ENT, Ophthalmology
3. Biomechanics, Applied Anatomy and Physiology
4. Fundementals for Occupational Therapy practice
5. Clinical Orthopedics and Radiodiagnosis
6. Clinical Neurology and Radiodiagnosis

Pathology and Microbiology

Examination at the end 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 25 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 fulfill 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. Hemorrhage, 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 anamolies, 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. Sclerodema and Psoriasis

P. Diseases of muscle including poliomyelitis, Myopathies.

Q. Volkmann's lschaemia

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 agents 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.

Pathogenic yeasts and fungi. (LD)

Virology – virus infections, with special mention of Hepatitis, Poliomyelitis & Rabies. (LD)

EVALUATION Internal tests and University Examination on Theory.

REFERENCE

1. Text book of microbiology by Anantha narayan and paniker..
2. Essential pathology by harsh mohan.

General Medicine, General Surgery and Paedaitrics

Examination at the end of 2nd year Instruction hours: 140

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.N.T. and Ophthalmology.

COURSE OBJECTIVES

The objectives of this course is that after 140 hours of lectures and seminars 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 fulfill the following objectives of the course.

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 , Hepatits B, AIDS. Protozoal- Filaria

B.IMMUNOLGOCIAL FACTORS:

Immune deficiency, inflammatory response, Auto immune disease, allergy

C .HAEMATOLOGY

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

2. List types of bleeding diathesis.

3. Describe the clinical features of Haemophilia

D.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 ofpneumonia.

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.

E.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 goal 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 Tetrology, and PDA,and briefly outline the pathologic anatomy.

F.BONE, JOINT AND CONNECTIVE TISSUE DISORDERS

1. Brief introduction to concept of autoimmune disease.

2. Define: systemic lupus erythmatous , Polymyositis, Dermatomyositis, polyartheritis Nodusa, 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.

G. RENAL DISEASES

1. Define and briefly outline acute and chronic renal failure.

2. Urinary tract infection. Pathogenesis. Outline common clinical conditions complicated by UTI

H. 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.

2. Obesity- Define ,Outline management.

3. Hypothyroidism Hyperthyroidism. Cushing's syndrome, Hypo addrenalism or Addison's disease

I. GERIATRICS

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.

J. ICU CARE

Nosocomial infections, shock, Ventilatory management and poisonings

K. GASTRO INTESTINAL DISEASE

Gastrooesophageal reflux disease, Swallowing disorders Acute hepatitis, chronic liver disease

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. Herniorraphy
d. Mastectomy
e. Thyroidectomy
f. Colostomy
g. Adrenalectomy
h. Cystectomy
i. Hysterectomy
j. Prostatectomy
k. Cholecystectomy
l. Illeostomy

PAEDIATRICS

1. Describe growth and development of a child from birth to 12years: 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 immunization 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.Spinabifida, 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.

OPHTHALMOLOGY

Instruction Hours : 10 Hrs

Briefly outline the following:

1. Eye lesions in leprosy, including causes, treatment and complications Of lagophthalmus.

2. Field defects arising from lesions in the visual pathway, theirclinical symptoms and methods of testing.

3. Effects of paralysis of the occular muscles and treatment.

4. Causes ,clinical features and treatment of disorders of Occular movement occurring in diseases such as myasthenia gravis, progressive supranuclear palsy and lower motor neuron diseases.

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. Definition of 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

Instruction Hours: 5 Hrs

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.

EVALUATION

Internal : Theory
University : Theory

REFERENCE

Davidson's principles and practice of medicine
Text of pediatric by op ghai
Baileys and love short practice of surgery
Text book of pharmacology bhathmaja Udyakumar.
Oxford text book of clinical pharmacology and drug therapy by J.K Aronson.

BIOMECHANICS, APPLIED ANATOMY & APPLIED PHYSIOLOGY

Examination at the end of 2rd Year Instruction Hours: 100

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 application in musclo- skeletal function and dysfunction.

COURSE OBJECTIVES

The objectives of this course is that after 100 hours of lectures, demonstrations and practical the student will be able to demonstrate anunderstanding 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. Describes 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 and line of gravity of the human body, stability and center of gravity, relocation of the centre of gravity.

4. Describe 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. Muscles action lines, Total muscles force vector, Divergent muscle pulls, and Anatomic pulleys.

8. Describe parallel force system:- 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 gravity of the human body.

4. The action line of a 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 of muscles 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, given the original centres of gravity.

3. The resultant vector in a linear force system, a concurrent force 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 forces and which are joint compression forces. What is 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 lever.

2. Work done by muscles in a second and third class lever.

3. Stability of an object in two 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 a muscle.

2. The rotatory 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 tissues present in human joints; including dense fibrous tissue, bone, cartilage and connective tissue.

3. Classify Joint - synarthrosis, Amphiarthrosis, Diarthrosis, subclassification of synovial joints.

4. Describe joint function, kinematic chains, range of motion.

5. Describe the general effects of injury and disease.

RECALL THE FOLLOWING:

1. The elementary principles of joint design.

2. The three main classifications 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 degrees 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 an amphiarthrosis on the basis of methods, materials, and function.

2. A synathrosis 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. Describes elements of muscles 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 & Isokinetic exercise.

4. Summarize 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 a muscle.

5. Isokinetic exercise.

DEFINE THE FOLLOWING:

1. Active and passive insufficiency.

2. Active and passive tension.

3. Concentric, eccentric and isometric contractions.

4. Reverse action

5. Agonists, antagonists and synergists. RECALL THE FOLLOWING:

1. Factors affecting muscle tension

2. Characteristics of different fibre types.

3. Characteristic of motor units.

4. Factors affecting angular

velocity.

DIFFERENTIATE THE

FOLLOWING:

1. A spurt from a shunt muscle.

2. A phasic from a tonic muscle.

3. Agonist from an antagonist.

4. Active from passive insufficiency.

5.Concentricfromeccentric contractions.

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. Describe the general structure and function of the vertebral column including: Primary and secondary course. 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 characteristic 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.

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 vertebralcolumn.

E. 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 and Rhomboids).

4. Describe the muscles of depression(Latissimus dorsi, Pectoralis, Teres major, Rhomboids).

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 of 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 or 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.

F. 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.

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- humero-ulnar, 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 brachioradialis 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 extensors 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 resistances 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.

G.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 Thumb Musculature 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

9. Functional position of wrist and hand.

DESCRIBE THE FOLLOWING:

1. The articular surfaces of the joints 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 joints, 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 neural.

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 by someone without any active hand musculature; what are the pre-requisites: for each?

H. THE HIP COMPLEX

1. Describe the general features of the hip joint including the articulating surfaces of the pelvis & the femur; Angulations; Angle of inclination, Angle of Torsion; Internal architecture of femur and pelvis ; joint 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. Summarize the pelvic motions in the static erect posture.

4. Describe femoral motion.

5. Describe Hip Stability in Erect Bilateral stance, sagital 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 planes 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 at 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 reduce

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 valga with coxa vara on the basis of hip stability and mobility.

3. The motions that occur at the hip, pelvis and lumbar spine during forward trunk bending with the motions that occur during anterior and posterior tilting of the pelvis in the erect standing position.

4. Antroversion 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.

I. THE KNEE COMPLEX

1. Describe the structure of the Tibiofemoral joint: Articulating surfaces of femur and tibia, the menisci, Joint capsule and bursae, Ligaments and other supporting structures. Anterior - posterior and Medial – Latera 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; Function 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 Tibio-femoral 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 at 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 quadriceps at the following degree of knee flexion: 90 deg., 130 deg., 30 deg., 10 deg.

3. The action lines of vastus lateralis and thevastus medialis oblique.

LOCATE:

1. The origins and insertions 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. Structures 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.

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 rotatory 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 of the hamstrings as knee flexors in each of the following hip positions: - hyperextension, ten degrees of flexion and full flexion (open kinematic chain).

6. The effectiveness of the rectus femoris as a knee extensor at sixty degrees of knee flexion with its effectiveness at ten degrees of knee flexion.

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 prepatellor 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.

J.THE ANKLE - FOOT COMPLEX

DESCRIBE the structure, ligaments, axis and function of the following: ankle joint, tibiofibular joints, subtalar joints, Talocalcaneonavicular joints, Transverse Tarsal joint, Plantar arches, Metatarsophalangeal joints, Interphalangeal joints.

Define the terminology unique to the ankle foot complex including inversion -
eversion, pronation - supination, dorsiflexion - plantar flexion, flexion-extension and adduction and abduction.

DESCRIBE

1. The compound articulators of the ankle, subtalar, talo-calcaneonavicular, transverse tarsal and tarsometatarsal joints.

2. The role of the tibiofibular joints and supporting ligaments.

3. The degree of freedom and range of motion available at the joint of the ankle and the foot.

4. The significant ligaments that support 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 subtalar joint during inversion-eversion.

7. The relationship between tibial rotation and subtalar / talocalcaneonavicular inversion-eversion.

8. The relationship between hind foot inversion -eversion and mobility-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 toe extension on the plantar arches.

15. The general function of the extrinsic muscles of ankle & foot.

16. The general function of the intrinsic muscles of foot.

K. POSTURE

1. Describe the effects of gravity and indicate the location of the gravity line in the sagital plane in optimal posture.

2. Analyse posture with respect to the optimal alignment of joints in the antero-posterior and lateral views.

DESCRIBE:

1. The position of hip, knee and ankle joints in optimal erect posture.

2. The position of body's gravity line in optimal erect posture, using appropriate points of reference.

3. The effects of gravitational moments on body segments in optimal erect posture.

4. The gravitational moments acting around the vertebral column, pelvis, hip, knee and ankle in optimal erect posture.

5. Muscles and ligamentous structures that counter balance gravitational moments in optimal erect posture.

6. The following postural deviations: pesplanus, halluxvalgus, pes cavus, idiopathic scoliosis, kyphosis and lordosis.

7. 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 affect gravitational moments acting around specified joints axes.

2. How changes in the alignment of body segments will affect either the magnitude or the deviation of the gravitational moments.

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

L. 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
A. Joint motion at the hip, knee and ankle for one extremity during a gait cycle.
B. The location of line of gravity in relation to the hip, knee, and ankle during the stance phases of gait.

C. The gravitational moments of force acting at the hip, knee and ankle during the stance phase.

EXPLAIN

D. Muscle activity at the hip, knee and ankle throughout the gait cycle, including why and when a particular muscle is active and the type of contraction required.

E. The role of each of the determinants of gait.

F. The muscle activity that occurs in the upper extremity and trunk.

COMPARE:
1. Motion of upper extremities and trunk with motion of pelvis and lower extremities.

2. The traditional gait terminology with the new terminology.

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

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

EVALUATION

Internal: Theory and orals
University: Theory and orals

Recommended books for reference :
Joint Structure and Function by Cynthia Norkins

APPLIED PHYSIOLOGY

Examination at the end of 2nd year Instruction hours: 30

COURSE DESCRIPTION

The objective of this course is that after 30 hours of lectures demonstrations, 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 fulfill the following objectives of the course.

A. THE HEART AND CIRUCLATION

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 and hypotension
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 and tone. Abnormalities in tone
8. Outline of voluntary movement.
9. Cutaneous, deep and superficial sensation.
10. Synaptic transmission.
11. Neuro Muscular transmission.
12. Properties of muscles, contractile responses, type's of contraction,electrical phenomena and tonic reflexes, tetanic contractions, clonus . wave summation, fatigue

C. RESPIRATION

1. Mechanics of respiration
2. Breath sounds.
3. Properties of gases
4. Exchange of gases
5. Lung volumes and capacities
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. COPD and Asthma

EVALUATION.

Internal : Theory and Orals
University: Theory and Oral

CINICAL ORTHOPAEDICS

Examination at the end of 2rd year Total Instruction hours: 55 hrs.

COURSE DESCRIPTION

Following the basic science and clinical science courses this course introduces the student to the orthopaedic conditions which commonly caus 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 and seminars along with clinical practice 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 fulfill the following bjectives of the course.

COURSE OUTLINE

A. INTRODUCTION TO ORTHOPAEDICS

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, Athroplasty, 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:

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.

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) meningeomyelocoele and Arthrogryphosis multiplex congenita.

Q. PERIPHERAL NERVE INJURIES

utline 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.

RADIODIAGNOSIS FOR ORHTOPEDICS Instruction Hours: 10 Hrs

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 Spinal cord in diagnosis, recognize some of the normal and abnormal features.

Outline the value of MRI of 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.

EVALUATION
Internal: Theory, Orals
External: Theory,

REFERENCE

Text of orthopaedics with traumatology by Natrajan
Clinical orthopedic rehabilitation by Brotzman

CLINICAL NEUROLOGY

Examination at the end of 2rd year Instruction hours: 55 Hrs

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 OBJECTIVIES

The objective of this course is that after 55 hours of lectures, demonstrations, and seminars along with clinical practice 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 fulfill 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 Neurophysiologic 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,.
Cerebral Palsy.

Hydrocephalus.
Spinal Bifida.

2. Cerebrovasular accidents.
General classification: thrombotic, embolic, hemorrhagic &"vasculitis/ arteritis - infectious and inflammatory strokes.
Gross localization and sequelae.
Detailed rehabilitative programme.

3. Trauma - broad localization, first aid and management of sequelae of head injury and spinal cord injury.

4. Diseases of the spinal cord.Craniovertebral junction anomalies Syringomyelia
Cervical and lumbar disc disease.
Tumours,Spinal arachnoiditis.

5. Demyelinating diseases (central and peripheral)
Guillain - Barre syndrome.
Acute disseminated encephalomyelitis. Transverse myelitis. Multiple sclerosis.

6. Degenerative disorders.

Parkinson's disease. Dementia.
7. Infections

Pyogenic Menignitis sequelae.
Tuberculous infection of central nervous system. Poliomyelitis.

8. Disease of the muscle -classification, signs, symptoms, progression and management.

9. Peripheral nerve disorders.

Peripheral nerve injuries: localisation and management. Entrapment neuropathies.
Peripheral neuropathies.

10. Miscellaneous.
Epilepsy : Definition, classification and management.
Myasthenia Gravis: Definition, course and management.
Intracranial tumours: Broad classification, signs and symptoms.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.

RADIODIAGNOSIS FOR NEUROLOGY

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

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.

Evaluation: Internal: Theory and
Orals:
University: Theory and Orals

REFERENCE

1.Neurology and neuro surgery illustrated by Kenneth w. Lindsay

Fundamentals for Occupational Therapy Practice

Examination at the end of 2nd year Instruction Hours 100 hours

COURSE DESCRIPTION

This course consists of theory classes and practical sessions and will introduce the students to the concepts of Model, Frame of References, and Approaches. It includes specific models, frames of references and approaches used in intervention for Physical, Paediatric and Psychiatric conditions. It also includes theory and practical sessions on Assessment methods in Occupational Therapy for Physical ,Paediatric and Psychiatric conditions.

COURSE OBJECTIVES

The objectives of this course are that after 100 hours of lectures, demonstrations and practicals, the students will gain knowledge and skill in the Models, Approaches, Frames of reference and Assessments used in Occupational Therapy .The students will also gain knowledge and practical skills in Assessing patients with Physical, Psychiatric and Pediatric conditions .

Section I Instruction Hours 60 hours

1. Model, Frame of Reference and Approaches

- An overview of Model, Frame of Reference and Approaches
- Model of Human Occupation
- Canadian Model of Occupational Performance
- Ecological Model in Occupational Therapy

2. Approaches used in Occupational Therapy

- Biomechanical approach
- Neuro Developmental Treatment (NDT) approach (Adults & Paediatrics)
- Roods approach (Adults & Paediatrics)
- Brunnstrom approach
- Proprioceptive Neuromuscular Facilitation (PNF) approach
- Affolter's approach
- Motor Relearning
- Programme
- Task Oriented Approach
- Sensory Integrative Therapy (Paediatrics & Psychiatry)

- Behavioural frame of reference
- Peto's Conductive Education
- Rehabilitative approach
- Cognitive Behavioural approach.
- Psychoanalytical- Include expressive media used in OT Occupational Behaviour and Model of Human Occupation
- Developmental groups and developmental approach.
- Cognitive Disability FOR
- Acquisitional FOR

Section II: Assessments in Occupational Therapy
Instruction Hours: 40 hours
Assessments in Occupational Therapy for the following areas of dysfunction:
A. Paediatric

- Gross motor
- Fine motor
- Cognition

Perception including Visuo-motor skills

Oromotor evaluation

- Play

B. Physical

- Functional Ability Hand functions
- Cognition and Perception
- Basic ADL and IADL
- Cranial Nerves
- Cerebellar functions
- valuation Procedures including:
- Reflexes (superficial and deep tendon reflexes),
- Muscle tone
- Range of Motion
- Muscles strength
- Voluntary control
- Co-ordination
- Sensation (cutaneous and cortical)

- Cognitive - Perceptual functions
- Hand functions

C. Psychiatric:

- History
- Sensory Perceptual
- Task skills
- Intraand Inter personal skills
- Social and group skills
- Group level
- Roles and Routines

EVALUATION
Internal: Theory, Orals and Practical
University: Theory, Orals on section I and II
Practical on section II only

Recommended book(s) for Reference:

1. Pedretti's Practice skills for physical dysfunction edited by Heidi McHugh Pendleton ,Winifred Schultz Krohn

2. Occupational Therapy for Physical Dysfunction by Mary Vining Radomski, Catherine A Trombly

3. Occupational Therapy and Physical Dysfunction, Principles, Skills and Practice by Ann Turner, Margaret Foster, Sybil E Johnson

4. Introduction to Occupational Therapy by Hussey Subonis ,Chafea O Brien

5. Occupational Therapy and Mental Health edited by Jennifer Creek, Lesley Lougher

6. Mental Health Concepts and Techniques for the Occupational Therapy Assistant by Mary Beth Early

7. Frames of Reference in Psychosocial Occupational Therapy by Mary Ann Bruce, Barbara Borg

8. Willard & Spackman's Occupational Therapy

9. Occupational Therapy for children by Jane Case Smith

10. Frames of Reference for Pediatric Occupational Therapyby Paula Kramer , Jim Hinojosa

Third Year

Subjects

1. Community Medicine, Basic Nursing and First Aid.

2. Clinical Psychology, Health Psychology and Clinical Psychiatry

3. Occupational Therapy in Psychiatry

4. Occupational Therapy in Orthopaedics & Neurology

5. Occupational Therapy in Paediatrics

6. Bio-statistics and research methodology

COMMUNITY MEDICINE

Examination at the end of 3rd year 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 fulfill 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, local trends and resource.

D.Outline selected national health programmes including current programmes (Eg.SSA Sarva Siksha Abhiyan)

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.

J. Describe the following communicable diseases with reference to reservoir, mode of transmission, route of entry and levels of prevention. a. Poliomyelitis, b. Meningitis, c. Encephalitis, d. Tuberculosis, e. Filariasis, f. Leprosy, g. Tetanus & h. Measles.

K. Describe the epidemiology of rheumatic heart disease, cancer, Chronic degenerative disease and cerebrovascular accidents.

L. Outline the influence of nutritional factors such as protein Energy Malnutrition, Anaemia, Vitamin deficiency and minerals on disability.

M. List the principles of health education, methods of communication and role of health education in rehabilitation services.

N. Define the role of community leaders and health professionals in health education.

O. Outline the role of international health agencies in rehabilitation of the disabled.

P. Role of Occupational Therapy in meeting the health care needs of India

EVALUATION.

Internal : Theory

University: Theory

Basic Nursing and First Aid

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 fulfill 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 utilize 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

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

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)

J. BANDAGES
Bandaging, basic turns, bandaging extremities; triangular bandages and their application

EVALUATION

Unit tests, term examinations, assignments, term examinations by doctor
1. Theory tests
2. Final Practical + Oral test

Recommended Books for reference include

First Aid Manual: St John Ambulance

BASIC NURSING

A. INTRODUCTORY CLASS

What is nursing? Nursing principles. Inter personal relationship

B. NURSING POSITION

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

C. LIFTING AND TRANSPORTING PATIENTS

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

D. 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.

E. METHODS OF GIVING NOURISHMENT

Feeding, tube feeding, drips, transfusions

F. Vital Signs

G. SURGICAL DRESSING

H. INFECTION CONTROL

Recommended Books for reference include:

A New Text book for Nurses in India, volume II , BNESIB NL, CMAI

Evaluation :

Internal: Theory and practical

University :Theory (along with community Medicine)

CLINICAL PSYCHOLOGY

Examination at the end of 3rd 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 year.

COURSE OBJECTIVES

The objective of this course is that after 35 hours of lectures, demonstrations, seminars 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 fulfill the following objectives of the course:

A. To evaluate attention, concentration, perception and briefly mention the 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 briefly mention the 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 defense mechanisms in normal and abnormal conditions.

COURSE OUTLINE

A. Definition of Clinical Psychology. : General and historical introduction to Abnormal Psychology, Psychology in relation to medicine, different schools. Methods of Clinical Psychology: Case History method, Interview Techniques, Clinical observation, Situational tests, Questionnaires.

B. Concepts of normality and abnormality: Causes of abnormality, Criteria for abnormality. Broad classification of Current model of

abnormal behaviour - Medical model, Psychodynamic model, Behaviouristic model & Humanistic model ,and Cognitive model

C. Functional units of mind: Id, ego and super ego - their functions and interactions. Role of Defense mechanisms in normal and abnormal behaviour.

D. Evaluation of attention and concentration, perception, memory, thinking etc

E. Intelligence and Mental Retardation: Intelligence test - .Measurement of intelligence - children & adults (demonstrations)

F. Mental Retardation and it's psychosocial management

G. Personality Assessment: Questionnaires, inventories, projective techniques.

H. Behaviour techniques in Therapy -application of learning principles to modify behaviour

I. Counselling: Definition, Aim, Difference between counselling and

guidance, principles in counselling, personality qualities of counsellors

J. Psychotherapy:

Basic Principles .Different types of Psychotherapy: Psychodynamic (including Brief psychotherapy) ,Humanistic (client-centred) and Cognitive Behavioural Therapy

HEALTH PSYCHOLOGY

Examination at the end of: 3rd 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, burn out.

D. COMMUNICATIONS

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

E. COMPLIANCE

Nature, factors contributing to non-compliance, methods of 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.

G. GERIATRIC PSYCHOLOGY

Specific psychological reactions and needs of geriatric patients.

H. PAEDIATRIC PSYCHOLOGY

Specific psychological reactions and needs of paediatric patients.

K. SUBSTANCE ABUSE

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

L. PERSONALITY STYLES

Different personality styles of patients.

CLINICAL PSYCHIATRY

Examination at the end of 3nd year Instruction Hours: 35

COURSE DESCRIPTION

In this course students will study abnormality of behaviour and its effect on functioning. It parallels the study of Health 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 seminars and 5 hours of clinical experience in case studies and discussion.

COURSE DESCRIPTION

The objective of this course is that after 35 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 fulfill 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

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.

3. Preventive measures: In relation to consanguineous marriages, adequate ante-natal care, obstetric care, mother and child services, psychological services (e.g. child guidance, counseling services)

B. Symptoms of mental illness:

1. Disturbances of consciousness.

2. Disturbances of reasoning and judgment.

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,

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

F. Legal aspects related to psychiatric patients.

1. Civil responsibility.

2. Criminal responsibility.

3. Testamentary capacity.

G. Clinical teaching, case studies and discussion.

To be posted in psychiatry to attend the out patient clinics

EVALUATION:

Internal :Theory

University :Theory

Occupational Therapy in Psychiatry

Examination at the end of 3rd year Instruction Hours: 75

Clinical Hours : 400

COURSE DESCRIPTION

This course parallels 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 at least 475 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 psychiatric conditions.

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

A. Describe the history of Psychiatric Occupational Therapy, and its development up to the present day.

B. Define OT in relation to psychiatry, and the role of an Occupational Therapist in the psychiatric team.

C. Discuss the treatment media used in Psychiatry including the role of activities. Analyze activities with reference to Psychiatry

D. Frames of Reference in the treatment of psychiatric conditions:

a. Cognitive Behavioural.

b. Behavioural.

c. Psychoanalytical- Include expressive media used in ot

d. Occupational Behaviour and Model of Human Occupation

e. Developmental groups and Developmental approach.

f. Sensory Integrative approach.

g. Cognitive Disability Frame of Reference

h. Acquisitional Frame of Reference

F. List and describe the various attitudes applied by the therapist in different conditions.

H. Describe in detail the assessment of a client including specific methods used in the following:

1. Observation

2. Structured, semi structured and unstructured interviews

3. Specific assessments used in Occupational Therapy

I. Help students to identify their client's psychiatric problems in relation to the practical situations observed in OT

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

- Schizophrenic and other Psychotic disorders Mood disorders
- Obsessive Compulsive Disorder, Anxiety & Phobic disorder Somatoform disorders
- Dissociative & Factitious disorders
- Eating and sleep disorders
- Psychosomatic illness
- Personality disorders
- Substance related disorders
- Seizure disorders
- Organic Brain Syndrome
- Autism Spectrum Disorder
- Specific Learning Disorder
- Intellectual Disability
- Social Communication Disorder
- Attention-Deficit/Hyperactivity Disorder
- Conduct Disorder
- Gender Dysphoria

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 & materials and grouping of patients.

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 : Theory , Practical and Oral Tests and case study file.

Univesity: Theory, Practical and Orals

Recommended book(s) for Reference:

1. Occupational Therapy and Mental Health edited by Jennifer Creek , Lesley Lougher

2. Frames of Reference in Psychosocial Occupational Therapy by Mary Ann Bruce, Barbara Borg

3. Occupational Therapy in short Term Psychiatry by Moya Willson

4. Occupational therapy in Long Term Psychiatry by Moya Willson

5. Willard & Spackman's Occupational Therapy

6. Mental Health Concepts and Techniques for the Occupational Therapy Assistant by Mary Beth Early

Occupational Therapy in Neurology & Orthopaedics

Examination at the end of 3rd year Instruction Hours: 110 Clinical Hours: 550

COURSE DESCRIPTION

This course follows the study of application of Occupational Therapy approaches & techniques to Neurological and Orthopaedic conditions.

COURSE OBJECTIVES

The objective of this course is that after at least 660 hours of lectures, demonstrations, clinical placements and case presentations, 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 fulfill 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. Application of occupations & activities appropriately for clients' with neurological and orthopaedic conditions

4. Outline the principles and goals in design, indications, and fitting of hand splints, prostheses, calipers and mobility aids.

COURSE OUTLINE

A. Application of the occupation & activity, selection criteria and grading methods appropriately for the following performance components:

- ROM
- Muscles strength
- Muscle tone
- Co-ordination
- Control of movement
- Sensation (cutaneous and cortical),
- Cognitive Perceptual functions
- Hand function
- Activities of daily living (ADL)
- Functional abilities

B. Application of following approaches to the neurological and orthopaedic problems: Biomechanical, Roods, NDT (for adults), Brunnstrom Approach, Proprioceptive Neuro muscular Facilitation, Motor Relearning Program and Rehabilitative approach, Affolter's approach and Task oriented approach.

C. Application of Approaches and Occupational Therapy principles and

techniques in evaluation and treatment of the neurological and orthopaedic conditions based on the following;

- Identification of dysfunction
- Potential for function and improvement
- Planning of long term and short term treatment goals
- Selection and implementation of appropriate treatment techniques

Orthopaedic & Neurological conditions include:

1. Injuries to upper limb and hand

a. Peripheral nerve injuries
    - Median nerve injury
    - Ulnar nerve injury
    - Radial nerve injury

b. Tendinitis/Tendinosis - Tennis elbow, Golfer's elbow, DeQuervain's syndrome, Intersection syndrome, EPL tendinitis, ECU tendinitis, FCR tendinitis, FCU tendinitis, trigger finger.

c. Stiff hand

d. Flexor tendon injury, Extensor tendon injury, Collateral ligament injury

e. Complex Regional Pain Syndrome (CRPS)

2. Brachial plexus injury

3. Fractures, with emphasis on upper limb and complications

a. Shoulder & Humerus fractures

- Clavicle Fractures
- Scapula Fractures
- Shoulder Dislocations (Glenohumeral Joint) Humerus Fractures

b. Elbow & forearm fractures

- Supra condylar fracture and Volkman's ischemic contracture Radius fractures

- Ulna fractures
- Fractures of radius and ulna

c. Wrist and hand fractures

- Colle's & Smith's fracture
- Carpal fractures and phalangeal fractures

4. Hansen's disease

Clinical features and deformities, early treatment, prevention of deformity,treatment of neuritis reaction, rehabilitation measures for chronic disabilities.
Reconstructive surgery and muscle re-education and Sensory compensation.

5. Amputations - Upper limb and lower limb pre prosthetic and prosthetic training

6. Low Back Pain

7. Poliomyelitis: Post polio residual paralysis and post polio syndromes

8. Spondylitis, Spondylosis, spondylolisthesis

9. Total Hip and Knee replacements

10. Arthritic conditions - Rheumatiod arthritis, osteoarthritis

11. Work related Musculo Skeletal Disorders

12. Burns

13. Muscular dystrophy

14. Parkinson's disease

15. Motor Neuron disease

16. Multiple sclerosis

17. Cerebellar ataxia.

18. Cerebro Vascular Accident (CVA) and it's complications such as Shoulder hand syndrome and shoulder subluxation.

19. Intra cranial tumours.

20. Brain injuries including Traumatic (TBI) and hypoxic ischemic encephalopathy (HIE).

21. Guillain Barre Syndrome.

22. Spinal Cord Injuries.

23. Diabetic Neuropathy

24. Myasthenia gravis

D. Hand Splinting

- Describe goals of splinting. Explain classification of hand splint and their application to treatment. Identify splint types and materials used.
- 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 opponens, 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.

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

E.Spinal Orthosis

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

F.Lower extremity orthosis

- Hip, knee, ankle, foot orthosis (HKAFO)
- Knee, ankle, foot orthosis (KAFO)
- Ankle, foot orthosis (AFO)
- Floor reaction orthosis (FRO)
- Foot drop splint - static and dynamic

Evaluation:

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

University: Theory, Practical and Orals

Recommended book(s) for Reference:

1.Pedretti's Practice skills for physical dysfunction edited by Heidi McHugh Pendleton ,Winifred Schultz Krohn

2. Occupational Therapy for Physical Dysfunction by Mary Vining Radomski, Catherine A Trombly

3. Occupational Therapy and Physical Dysfunction , Principles ,Skills and Practice by Ann Turner, Margaret Foster, Sybil E Johnson

4.Willard & Spackman's Occupational Therapy

Occupational Therapy in Paediatrics

Examination at the end of the 3rd year Instruction hours : 100 Clinical Hours : 400

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 at least 500 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of:

- Areas of abnormal and delayed development in children from birth to 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 + Practicals.

3. Perceptual, Cognitive, Social, emotional, Language and Selfcare and Play development

4. Practicals (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 MEDIA

1. Play Therapy.

2. Creative activities.

D. FRAMES OF REFERENCES AND TREATMENT APPORACHES

1. Bobath NDT.

2. Rood's neuromuscular facilitation.

3. Ayre's Sensory Integration .

4. Biomechanical frame of reference

5. Behaviour modification

6. Acquisitional frame of reference

7. Motor skills frame of reference

8.. Peto's - conductive Education.

9.Special Education principles of education for perceptual and cognitive training.

E. OCCUPATIONAL THERAPY APPLICATION (including review of each condition)

1. Cardio respiratory conditions of childhood.

2. Cerebral palsy

3. Visuo perceptual and Visuo motor dysfunction

4. Muscular dystrophy

Erb's palsy

6. Poliomyelitis / Post Polio Residual Paralysis

7. Spina bifida and hydrocephalus.

8. Arthrogryphsis and other congenital orthopaedic disorders.

9. Stills 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

17. Behaviour disorders.

18. Visual / auditory loss.

19. Speech and communication disorders.

20. Acquired Immuno Defficiency Syndrome.

21. Seizure disorders

22. Haemophillia

23. Oncology and Palliative care

F.OCCUPATIONAL THERAPYFOR SPECIFIC AREAS OF DYSFUNCTION

1. Oromotor dysfunction:

Evaluation of Oral structures, Oromotor development and eating skills, sucking and drinking, swallowing, coordination of suck swallow and breathing, biting and chewing, Self feeding, Contextual factors

Intervention: Postural alignment, Handling techniques, Intervention for Sucking, swallowing, biting and chewing, self feeding, oral structural problems and nutrition

2. Pre writing and writing skills

3. Psychosocial dysfunction

4. School based intervention:

Types of schools where OT's provide services Categories of disability

OVT Evaluation: level of participation. Assessment of performance: motor, sensory, perceptual Cognitive Psychosocial School Environment Teacher curriculum expectation

Individualized Education Programme: Developing and components Intervention: education academic and Functional goals
Integrated therapy

Consultation

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 : Theory , Practical and Oral Tests, Child Development file and case study file.

Univesity: Theory, Practical and Orals

Recommended book(s) for reference:

1. Occupational Therapy for children by Jane Case Smith

2. Frames of Reference for Pediatric Occupational Therapy
by Paula Kramer , Jim Hinojosa

3.Willard & Spackman's Occupational Therapy

BIO-STATISTICS AND RESEARCH METHODOLOGY

Objective

The objective of this course is that after 100 hours of lectures & demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of statistics and reaserch in the field of OCCUPATIONAL THERAPY.

Course content

1.Introduction to research

Importance of research in OCCUPATIONAL THERAPY

Ethical considerations in OCCUPATIONAL THERAPY research

2.Research methods and methodology

Conceptual phase

Empirical phase

Interpretive phase

3.Research process

Concept and variables

Hypothesis-functions of hypothesis in quantitative research,types,characteristics and hypothesis testing

4.Research design

Basic designs

Factorial design

Repeated measures design

Advantages and disadvantages of experiments

Quasi experimental research

5.Collection of data

Methods of data collection

Observational methods

Biophysiological measures

6.Sampling methods

Populations

Non probability and probability sampling

7.Introduction to statistics

8.Types of variables

9.Probability and proportion

10.Sampling distribution of estimates

Parameters and estimates

Standard errors of differences

Students t- distribution

11.Significance testing

Types of hypothesis-research,null,alternate

REFERENCE

Research methodology methods and techniques C.R. Kothari.

Bio-statistics a methodology for the health sciences by Patrick.

Fourth Year

SUBJECTS

1. Clinical Cardio Respiratory and Work Physiology
2. Rehabilitation Medicine
3. Orgnization, Administration & Work Study in Occupational Therapy
4. OT in Rehabilitation
5. Group process in OT
6. Project

Clinical Cardio-Respiratory

Examination at the end of 4th year along with Work Physiology Instruction Hours: 50

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, clinics and seminars, 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 fulfill 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:

C.CLINICAL FEATURES & MANAGEMENT

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.

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, Haemopneumothorx, 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: Segementectomy, 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. Systemic Hypertension, Pulmonary Hypertension, Syncope and their management.

2. Briefly outline the management of a patient with chronic obstructive airway disease.

3. Ischemic Heart Disease and risk factors and its management.

4. Heart failure, Cardiomyopathies

EVALUATION

Internal: Theory

University : Theory and Oral

WORK PHYSIOLOGY SYLLABUS

COURSE OBJECTIVES

The objective of this course is that after 50 hours of lectures and seminars, the student will be able to demonstrate an understanding of the following learning objectives:

A. Physiology of exercise

- Define exercise
- Recognise the two types of muscle contraction - (a) Isotonic (b)

Isometric

- Define and give examples of (a)Aerobic/Endurance exercise and

(b)Anaerobic/Strengthening/Glycolytic/Resistance exercise

- Differentiate between Aerobic/Endurance exercise and

Anaerobic/Resistance exercise

- State the formula for computing the maximal heart rate of an individual
- Define metabolic equivalents or METs. Explain the relationship

between METs, oxygen consumption and energy expenditure

- Express the level of exercise/physical activity in terms of % of Maximal

heart rate, % of VO2 max, power output and energy expenditure in METs

- Recognise the classification of physical activity/exercise based on

intensity of exercise (example: light, moderate, heavy etc. exercise)

- Describe the benefits of exercise

B. Acute effects of exercise on different systems:

Specific learning objectives:

1. Cardiovascular system :

- Describe the acute changes in heart rate, cardiac output,
- systolic and diastolic blood pressures with different levels of exercise
- Describe the changes in the distribution of blood (muscle, renal, gut, brain, heart circulations etc.) with exercise
- Recognise the difference in the effects of upper limb alone,
- lower limb alone and whole body exercise on the cardiovascular system
- Recognise the difference in the effects of aerobic and anaerobic exercise on the cardiovascular system
- Recognise the limitations to exercise in patients with cardiac failure and myocardial infarction

2. Respiratory system:

- Describe the acute changes in respiratory rate, pulmonary ventilation, and pulmonary blood flow with exercise

3. Neuro-muscular system:

- A.Recognise the immediate effect of exercise on neural circuits and muscle strength
- Metabolism :
- List the sources of energy for different intensities and duration of exercise
- Describe oxygen consumption during exercise and during recovery
- Define oxygen deficit and oxygen debt

Explain what is meant by maximal oxygen consumption/VO2 max /maximal aerobic capacity and discuss its importance

C. Long term effect of exercise on different systems:

1. Circulatory adaptations to exercise training:

2. Describe the effects of exercise training on heart rate, stroke volume, cardiac output, blood pressure, microcirculation of skeletal muscle and cardiac muscle

3. Differentiate between the training effects of aerobic and anaerobic exercise on the cardiovascular system

2. Biochemical adaptations to exercise training:

- List the skeletal muscle metabolic adaptations with aerobic and anaerobic exercise training

3. Morphological adaptations to exercise training

- Describe the adaptations in skeletal muscle structure, fibre type and blood supply
- List the adaptations in tendons and ligaments, bones, cardiac muscle and body composition
- Differentiate between adaptations due to aerobic training and anaerobic training

EVALUATION

Internal: Theory

University : Theory and Oral

REHABILITATION MEDICINE

Examination at the end of 4th year Instruction hours: 55

COURSEDESCRIPTION

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 are that after 55 hours of lectures and seminars and clinics the stuent will be able to:

A. Understand the concept of team approach in rehabilitation through practical demonstrations, with contributions from all members of the team.

B. Develop skills in identification of diagnostic features in various clinical conditions leading to disability.

C. Understand the role of medical and surgical aspects in a rehabilitation programme

D. Understand role of each member of the Rehabilitation team in maximizing the residual potential of persons with disability.

E. Formulation of appropriate goals (long &short term) in treatment and rehabilitation of individuals with disability.

COURSE OUTLINE

A. INTRODUCTION

Define the term rehabilitation. Explain its aims and principles

B. PRINCIPELS AND MANGEMENT OF THE FOLLOWING CONDITIONS

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

C. THERAPEUTIC TECHNIQUES

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

1. Joint mobilization.

2. Reducing spasm and management of spasticity

3. Assisting weak muscles.

4. Increasing endurance.

5. Muscle re-education following muscle transfer surgery.

6. Strengthening muscles.

7. Increasing co-ordination.

8. Improving balance.

9. Gait training.

D. ELECTRO THERAPY MODALITIES: Brief introduction, indications and contra Indications

E. COMMUNICATION PROBLEMS

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

F. BEHAVIOURAL PROBLEMS

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

G. 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.

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.

Brief over view of the following:

• Upper and lower extremity Orthoses

• Spinal Orthoses

• Hand orthoses

I. PROSTHETIC DEVICES

Describe types, prescription, fitting and checking of Upper Extremity and Lower Extremity Prostheses. Demonstrate methods of training in their use. .
Prescription and designing foot wear modifications.

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. INTERNATIONAL CLASIFICATION OF FUCNTIONING

O. LEGAL ASPECTS

Outline legal aspects of disability in terms of compensation for disability and

benefits available to the disabled.

P. SOCIAL IMPLICATIONS

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

Q. COMMUNITY BASED REHABILITATION MODULE

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

R .BIOENGINEERING

Define and describe role of bioengineering in rehabilitation.

EVALUATION.

Internals : Theory
University : Theory

Organization, Administration & Work Study in Occupational Therapy

Examination at the end of 4th year Instruction Hours: 70

COURSE OBJECTIVES

The objective of this course is that after 70 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 healthcare delivery system, patient treatment and training.

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

I. ORGANIZATION AND ADMINISTRATION

A.Define- Organization, Administration and Management. Outline Principles of administration

Describe four major functions of management: Planning, Organizing and staffing, Directing and ControllingOutline the purpose of organization, administration and management in relation
to OT.

B. Describe the following aspects of administration in general and in relation to OT work situations.

1. Referrals: Purpose and types of referral.

2. Documentation:

Purposes for documentation, fundamental elements in documentation

Documentation of Initiation of OT Services: initial evaluation, re evaluation, records, reports, intervention plans: short term and long term goals.

Selecting /planning assessment forms eg. Pre-vocational, ADL, hand function & cognitive functions for initial evaluation and progress recording with respect to different conditions

Documentation of Continuing OT Services: Progress notes: Problem Oriented Medical Records (POMR) SOAP notes, check list notes, narrative notes descriptive notes, SMART, RUMBA, Progress check lists or flow sheets

Documentation of Termination of OT Services: Discharge reports

Administrative documentation and records including attendance, statistics, inventory records, stock (store keeping)

Electronic documentation

Confidentiality in Documentation

3. Purchase Ordering

4. Maintenance: of equipments, materials, furniture and buildings

5. Correspondence and Filing: a) Types of correspondence b) Methods of filing.

6. Financial Management - including types of Budgets, Petty cash accounting, Costing of splints / aids / equipment / articles made in OT.

7. Annual Reports and Statistics. Method of calculating monthly and annual statistics. Outline method of writing OT department annual reports. Making plans for future requirements based on statistics: eg. Staff patient ratio, equipment and staff requirements.

8. Considerations for construction of a new department, and modification of an old department including: a) Space required b) Allotment of space, e.g. Suitability for access, plumbing requirements, & circulation of air.

9. Safety precautions in OT

Discuss considerations relating to the following:

General Safety Recommendations in the OT department: eg. Moving patients, training attenders and "helpers", while doing activities outside, when using sharp hand tools, while using machinery and electrical equipments.

Fire Safety

Safety precautions in relation to patients with physical conditions like Leprosy, Hemiplegia, Paraplegia, back injuries, Cerebellar dysfunction; psychiatric disorders like Epilepsy, Mental Retardation, suicidal patients and paediatric conditions like ADHD, Haemophilia.

10. Infection control, Incidents and Emergencies:

Universal Precautions, Standard Precautions, Transmission based Precautions, Effective hand washing techniques, Isolation

Cardio Pulmonary Resuscitation, Falls, Burns, Bleeding, Shock, Seizures Respiratory distress, Insulin related Illness, Choking and Cardiac arrest

11. Legal aspects related to rehabilitation: Mental health act, Medico legal cases, Workmen's Compensation Act & Insurance facilities and other financial benefits available for the disabled.

12. Staff Management, Supervision and Development

Supervision: Methods and Types of Supervision: Formal/Informal, Direct /Indirect, Administrative, Clinical etc.

Mentoring,

Performance evaluation and appraisal Leadership

Professional development

Staff Meeting: Purpose of staff meetings.

13. Planning Teaching methods for assistants and OT students in the clinical situation.

14. Organizing programmes for patients: picnic, sports and other events

C. Practical work to be carried out under supervision, during clinical postings in the fourth year. Eg. Maintaining records, stores requests, care of equipment, inventory check, costing of aid, adaptations, and petty cash records.

II.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

Work Study: Definition and Components (Method Study and Work Measurements)

Method Study: Definition, Objectives Steps in method study

Recording information and recording techniques: Flow Process Chart- including symbols used in a process chart, Flow Diagram, String Diagram

Work measurement: Definition, Brief outline of techniques of Work measurements: Time study and Work Sampling

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. ERGONOMICS

1.. Define ergonomics. Describe scope of ergonomics in Occupational Therapy.

2.Objectives of Ergonomics

3. Work simplification and energy saving techniques.

4. Joint protection techniques

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

a. Selfcare

b. Home-making

c. School

d. Occupation including work station, seating and tools

e. Recreation.

6. Application of ergonomics 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

G.Practicals :

1, 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.

2. 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.

3. 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 to be submitted with recommendations.

EVALUATION

Internals : Theory and Practical Assignments University : Theory

Recommended book(s) for Reference:

1. Willard & Spackman's Occupational Therapy

2. Occupational Therapy and Mental Health -Jennifer Creek

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

4. Occupational Therapy and Physical Dysfunction Principles Skills and Practice by Ann Turner, Margaret Foster, Sybil. E Johnson

5. O.T. Practice skills for Physical Dysfunction by L.W. Pedretti

Occupational Therapy in Rehabilitation

Examination at the end of 4th year Instruction hours: 110 Clinical Hours :540

COURSE DESCRIPTION

This course covers rehabilitation methods in detail and the application of O.T. to physical conditions and specific dysfunctions 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 at least 650 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the Occupational Therapy role in medical and surgical conditions, and rehabilitation methods for people with residual disability.

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

A. Explain the role of Occupational Therapy in rehabilitation of Neurology, Orthopaedic and Psychiatric conditions, and habilitation of Paediatric conditions. Describe in detail ADL and functional assessment, training and planning methods of mobility.

B. Explain in detail the O.T. objectives and principles and appropriate treatment media for the following.

1.. Cardiac and Pulmonary disease and rehabilitation

2.. Cancer

3.. Geriatric conditions, including social implications.

4.. Haemophillia (adults)

5.. Terminal illness and Hospice care- Adults and Children

6.. Visually and Hearing Impaired - Adults

C. Occupational Therapy Management for pain

Application of superficial and mechanical modalities as preparatory measures to manage pain and improve occupational performance.

Underlying principles, Indications and contraindications, Precautions.

Monitoring, Re assessment and discharge in collaboration with patient and care givers

D Swallowing Disorders and Management

Normal swallowing and Disorders in swallowing,

indicators of eating and swallowing dysfunction ,Dysphagia assessment ,

DyspahgIa intervention including non-oral feeding, positioning, oral hygiene, progression, swallowing therapy and caregiver training

E.Mobility:

Functional Ambulation - Basics of Ambulation, mobility devices, Ambulatory techniques, Safety aspects

Wheel Chair: Prescriptions, Wheelchair components, Wheel chair measurements Wheel chair adaptations, Wheel chair safety

Wheel chair skill Training: basic and advanced

Public Transportation; Private Transportation

Transfer Techniques with walking aids and wheelchair

Indoor: Bed Chair, Toilet, Floor

Outdoor: Car, Bus Auto Tricyle

Community Access: Recommendations and Training in techniques to enhance community mobility

Driver Rehabilitation Evaluation: Assessment of performance skills and client

factors in comprehensive driver evaluation. Knowledge of primary and secondary controls. Suggest appropriate modification. Regulations for drivers with disability in India.

F.Work Evaluations and Work Programmes:

Functional Capacity evaluation, Vocational Evaluation (General or Prevocational and Specific) ,Job Analysis, Work Hardening ,Work Conditioning, Sheltered Work shops

Home based Programmes, Transitional and supported employment

G.Evidence Based Practice

Models and approaches to Evidence and inquiry based practice. Step in Evidence Based Practice.

Systematic Occupational Therapy Practice Model (SOTP): brief overview

H. Client Centered Therapy

I.Physical Agent Modalities:

Superficial thermal agents:

Treatment planning, primary effects, Selection, Clinical use of thermotherapy Awareness of the following modalities of treatment

Whirl pool baths and hydrotherapy fluidotherapy, hot packs paraffin Cryotherapy : purpose, effects, indication, precautions
Therapeutic ultra sound:

Physical principles clinical use phosphoresis, precautions

Electrotherapy:

Principles of Electrotherapy

Physiology of nerve and muscle Education .propagation of electrically stimulated nerve

Treatment planning specific to electro therapy : parameter of electrical stimulation devices, electrodes, Electrode site , Electrode placement

Clinical use of electro therapy :Electrical stimulation ,Neuro muscular Electrical stimulation, Functional Electrical Stimulation,Transcutaneous Electrical Nerve Stimulation

Basic Principles in application of Functional Electrical Stimulation as adjuncts to therapy, Clinical uses

I.Biofeedback Basic Principles in application of Biofeedback and as adjuncts to therapy Surface Electro myographic Biofeed back. Clinical uses including muscle re-education .

J.Assistive Technology: Design ,fit ,and train in assistive technology

and devices required for seating ,positioning, daily living which would enhance occupational performance ,self maintenance and self advancement roles. Also including Environmental Control units , Augmentative and Alternative Communication devices communication devices ,Mobile arm supports and slings ,reachers, mouse and keyboard adaptations, writing, feeding and toilet aids.

K.Fabrication of Hand splints:

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

Including Thumb spica, Resting hand, Gutter splints, anti claw, Ulnar drift

L.Disability evaluation for physical conditions. mention the legal aspects relating to compensation and insurance.

Disability evaluation of upper & lower extremity
Disability percentages in the following conditions:

- Amputation
- Intellectual impairment
- Altered sensorium
- Monoparesis, monoplegia, paraparesis, paraplegia, hemiparesis, hemiplegia, quadriparesis, quadriplegia

M. Introduction to International classification of functioning, disability and health (ICF)

International classifications: ICD, ICIDH & ICF

Components: Functioning and Disability and contextual factors

Functioning and Disability: Body structures & functions, Activity & Participation
Contextual factors: Personal & environmental factors

Qualifiers

O.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

P. Architectural barriers, Discuss the removal of architectural barriers and use of appropriate adaptive devices. Explain purposes and methodology in home situation evaluation.

Q. Home and work site modifications for persons with disability which includes appropriate working levels, accessibility, types of stoves, storage levels. Hygiene and safety measures at home.

R. 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. Leisure

7. Play

S. Plan Assessment forms: Eg prevocation, ADL, Hand Function and Higher functions for initial evaluation and progress recording

T. Selecting and Critiquing Assessments: Theoretical Context, Clinical Utility, Test Construction, Standardized Tests, Reliability, Validity, Cultural Relevance

U. Psychological reactions in patients: 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.

Recommended book(s) for Reference:

1. Willard & Spackman's Occupational Therapy

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

3.Occupational Therapy and Physical Dysfunction Principles Skills and Practice by Ann Turner, Margaret Foster, Sybil. E Johnson

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EVALUATION:

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

GROUP PROCESS IN OCCUPATIONAL THERAPY

Examination at the end of 4th year Instruction hours: 40

Practical hours: 40

COURSE OBJECTIVES

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

COURSE OUTLINE
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 & 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

i) Leadership roles & styles

ii) 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) Task oriented groups.

ii) Stress management groups.

iii) Care givers Support Groups

iv) Self help groups.

v) Anger management groups.
vi) Assertiveness training group.
vii) Drama therapy groups.
viii) Social skills training groups.
ix) Sensory Integration Groups

EVALUATION : Internal Theory
University Theory

PROJECT

(Special study)

Course Description
HOURS: 170

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 are: 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 tall within the interest areas of physiotherapy or occupational therapy services. Students are encourages 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.

CLINICAL PRACTICE

INSTRUCTION HOURS: 2030

Course Objective: After 2030 hours of clinical experience the student will be able to demonstrate an understanding of the basic requirements of occupational therapy in each O.T section.

1ST YEAR CLINICAL POSTING: 100 Hours

GOAL:

To orient students to different clinical areas.

OBJECTIVES:

The student will be able to fulfill the following objectives.

1. The students will be oriented to the various departments & wards of the Hospital .

2. Orientation to the PMR department including(Physiotherapy, Prosthetic & orthotic department & speech therapy)

3. At Occupational therapy, orientation to all kinds of patients, sections, equipments, assessment & treatment services provided.

4. Clinical observation of patients - Identify the common physical / mental / emotional problems

5. Identify media used by therapists during treatment.

6. Developing rapport with patients.

7. Muscle testing and goniometry

8. Surface Anatomy.

EVALUATION:

Files - To record media & equipment used in Occupational Therapy.

II YEAR CLINICAL POSTING: 600 hrs

GOAL:

The student will be able to take detailed history & evaluate relevant performance components.

OBJECTIVES:

1. The student will be posted on rotation in the inpatient and outpatient sections of Orthopedics, Neurology, Neurosurgery, Psychiatry and Pediatrics Unit.

2. The student will take detailed history through interview; obtain details of investigations & medical treatment from case records.

3. To evaluate performance components relevant to client's diagnosis i.e tone R.O.M, muscle power,voluntary control,

sensation,coordination,DTR,superficial reflexes,TCD,cranial nerve testing.

4. To Identify problems to be addressed in Occupational Therapy.

EVALUATION:

Files: Case submission - 2 cases per posting.
Case presentation - 1 case per posting

III YEAR CLINICAL POSTING: 800 hrs

GOAL:

The students will master history taking & learn the skills of Occupational Therapy assessment in respective clinical areas & problem identification & goal setting and intervention The students will be posted on rotation in Occupational Therapy inpatient and outpatient units, in the areas of Psychiatry, Paediatics.,Ortopaedics and Neurology.

OBJECTIVE:

Students will be able to fulfill the following objective:

1. Be proficient in history taking.

2. Learn occupational therapy assessment skills such as observation, palpation, clinical testing & examination.

3. They will learn to do mental status examination, assess relevant performance components & detailed functional assessment.

4. The students will learn to identify patient's problems to be addressed Occupational therapy.

5. The students will learn to prioritize short term & long term goals for the patient.

6. The students will learn to choose and apply treatment approaches and implement Occupational Therapy intervention with supervision.

7. The students will have hands on practice on wheelchair & crutch transfers, one handed techniques and mat activities.

8. The students will learn to plan for prescribing splints, adaptive & assistive devices.

EVALUTION:

Files: 1. Normal development of child file - 1year - 5 years of age

2. Hand splint file - 5 hand splints, paper pattern & fabrication description.

3. Case submission - 2 cases per posting

4. Case presentation - 1 per posting

IV YEAR CLINICAL POSTING 530 hours

GOAL:

The student should be proficient in Rehabilitation of all clients relevant to occupational therapy .Emphasis is on assessment, treatment plan and involvement in patient care.

OBJECTIVES:

1. The student will have placements to include the following: Clinical Cardio

Respiratory, Neurology, Orthopedics & Rheumatology, Plastic surgery, Burns and Geriatric conditions , Hand therapy, Prosthetic & Orthotics, Speech therapy & Physiotherapy units, Community based rehabilitation.

2.Student should be able to do specialized assessments on specific performance components.

3. Demonstrate competency in assessment, clinical reasoning & treatment planning.

4. The student should be able to conduct groups in Occupational Therapy.

5. Take responsibility for at least one administrative or organizational duty in the treatment area eg. Care of equipment / materials, billing & record maintenance.

6. Students will learn to conduct a job site and job analysis of workers in industrial setups.

7. In CBR student will learn to conduct survey, identify disability, plan home

based therapy and low cost aids and adaptations.

EVALUATION:

1. Files case submission - 2 cases / posting

2. Case presentation - 1 per student in all specialized performance components.

3. Report writing on work study & job analysis after industrial visit.

INTERNSHIP TRAINING

A student after having successfully completed the final year University Examination is qualified to commence the compulsory rotatory internship. Completion of Internship is mandatory to enable a student to obtain the degree of Bachelor of Occupational Therapy.

Aims:

The Internship program is designed to facilitate the transition from student- hood to becoming a competent professional. It is meant to instill in the students clinical practice skills which would encompass the following qualities.

• Time management and Punctuality

• Work behaviours, roles & routines

• Communication and interaction skills with patients, colleagues, supervisors & other professionals of multi disciplinary team.

• Plan & cooperate with other members of the treatment team for achieving objectives of treatment.

• Take responsibility for at least one administrative or organizational duty in the treatment area e.g. care of equipment, therapy sessions & patient care.

• Ability to write concise, relevant evaluation and progress notes on patients treated in consultation with therapist.

• Ability to present their patients to the treatment team at clinical rounds conferences etc, - clearly demonstrating progress made and present treatment objectives.

Duration & Description:

The internship program is of the six months duration. A student doing internship has to work under supervision of experienced staff in the following areas.

1. Paediatrics - One month

2. Orthopaedics and Hand, Burns
& Plastic surgery - One month

3. Community based Rehabilitation - One month

4. Neurology - One month

5. Psychiatry - One month

6. Physical Medicine & Rehabilitation - One month

(Rheumatology, Cardio Respiratory and Prosthetic & Orthotics unit)

All the above mentioned postings and durations are compulsory

Ordinances:

• The intern will be eligible for 1 day casual leave in each month and can carry over the leave to next months, but he cannot avail the next month leave in advance.

• The intern should conduct themselves in a manner befitting the profession.

• The intern should dress appropriately in the clinical areas.

• It is mandatory for the intern to wear the white apron with nametag when in the clinical area/ wards.

The intern can avail medical leave on producing a medical certificate, but will have to compensate for the number of days of absence from internship

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