# REGULATIONS 2016
# BACHELOR OF OCCUPATIONAL THERAPY (B.O.T.)

**For students admitted from 2016-2017**

SRM COLLEGE OF OCCUPATIONAL THERAPY, SRM IST

**FACULTY OF MEDICINE AND HEALTH SCIENCES**
**SRM UNIVERSITY**
**SRM Nagar, Kattankulathur, Kancheepuram District,**
**Tamilnadu– 603203**

**SRM COLLEGE OF OCCUPATIONAL THERAPY**
**SRM University**
**Deemed University, Chennai – 603 203**

## Regulations for BOT course

In exercise of the powers conferred by the S.R.M Institute of Science and Technology Deemed university, standing academic board of the S.R.M Institute of Science and Technology Deemed university, hereby makes the following regulations: -

### SHORT TITLE AND COMMENCEMENT

These regulations shall be called "THE REGULATIONS FOR THE BACHELOR OF OCCUPATIONAL THERAPY (B.O.T) DEGREE COURSE OF THE S.R.M INSTITUTE OF SCIENCE AND TECHNOLOGY DEEMED UNIVERSITY.

They shall come into force from the academic year 2016-2017 session onward. The regulations and Syllabus are subject to modification by the Standing Academic Board from time to time.

### REGULATIONS

### 1. ELIGIBILITY

1.1 Age Limit: The student should have completed the age of 17 years on or before 31" December of the year of admission to the course.

1.2 The required subjects at the HSC or equivalent: Physics, chemistry and Mathematics /Biology/Botany and zoology

1.3 Qualifying Examination and selection of Students: students should have successfully completed HSC examinations of any recognized board/ university of India or equivalent of 10+2 education in India or abroad with minimum of 60% in relevant subjects.

1.4 Lateral entry admission

The candidates who possess the Diploma in Occupational Therapy awarded by any Recognized school of Occupational Therapy are eligible to apply for Lateral entry admission to the third Academic year of Bachelor of Occupational Therapy.

### 2. PHYSICAL FITNESS CERTIFICATE

Every candidate before admission to the course shall submit to the Head of the Institution a certificate of medical fitness from an authorized medical officer that the candidate is physically fit to undergo the academic course and does not suffer from any disability or contagious diseases.

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**3. REGISTRATION**

A candidate admitted to the course shall register his/her name with this University by remitting the prescribed fee 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.

**4. DURATION OF THE COURSE**

The duration of the course shall extend over a period of four academic years and six months of compulsory Internship (4 ½ years).

**5. MEDIUM OF INSTRUCTIONS**

English shall be the medium of instructions for all the subjects of study and for examinations of the Bachelor of Occupational Therapy Course.

**6. CURRICULUM**

The curriculum and the syllabus for the course shall be as prescribed by the standing academic board from time to time.

**B.O.T. CURRICULUM**

| Subject Code | Subject Title | Hours of Study per Week | Examination/Non Examination | Total Hours per Academic Year |
|---|---|---|---|---|
| **BOT FIRST YEAR** | | | | |
| BOT16101 | Anatomy | 7 | E | 200 |
| BOT16102 | Physiology | 4 | E | 150 |
| BOT16103 | Psychology | 2 | E | 60 |
| BOT16104 | Sociology | 2 | E | 50 |
| BOT16105 | Analyzing Occupations and Activities | 3 | E | 110 |
| | Nursing and First Aid | 2 | NE | 40 |
| | English | 1 | NE | 10 |
| **BOT SECOND YEAR** | | | | |
| BOT16201 | General Medicine, General Surgery and Pediatrics | 6 | E | 150 |
| BOT16202 | Pathology and Microbiology, | 4 | E | 50 |
| BOT16203 | Biomechanics and Applied Anatomy | 3 | E | 110 |
| BOT16204 | Health Psychology, Clinical Psychology | 3 | E | 50 +50+ 50 Total=150 |

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| Subject Code | Subject Title | Hours of Study per Week | Examination/Non Examination | Total Hours per Academic Year |
|---|---|---|---|---|
| | and Clinical Psychiatry | | | |
| BOT16205 | Fundamentals for Occupational Therapy Practice | 3 | E | 115 |
| | Biochemistry | 1 | N/E | 50 |
| | Pharmacology | 1 | N/E | 50 |
| | Ophthalmology /ENT | 2 | N/E | 30 |
| **BOT THIRDYEAR** | | | | |
| BOT16301 | Clinical Orthopedics | 3 | E | 60 |
| BOT16302 | Clinical Neurology | 3 | E | 60 |
| BOT16303 | Community Medicine | 2 | E | 60 |
| BOT16304 | OT in Orthopedics and Neurology | 3 | E | 100 |
| BOT16305 | OT in Pediatrics | 3 | E | 100 |
| | Obstetrics and gynecology, Radio diagnosis | 1 | N/E | 20 |
| **BOT FOURTH YEAR** | | | | |
| BOT16401 | Clinical Cardio respiratory and Work Physiology | 3 | E | 60 |
| BOT16402 | Rehabilitation Medicine | 1 | E | 60 |
| BOT16403 | OT in Organization andAdministration | 3 | E | 80 |
| BOT16404 | OT in Rehabilitation | 3 | E | 85 |
| BOT16405 | Group Process in OT | 3 | E | 70 |
| BOT16406 | OT in Psychiatry | 3 | E | 80 |
| | Research Methodology and Biostatistics | 2 | N/E | 50 |
| | Basic life support | - | N/E | 10 |

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## 7. COMMENCEMENT OF THE COURSE

August of every academic year

## 8. COMMENCEMENT OF EXAMINATIONS

8.1 University Examination will be held in August for regular batch of every academic year. And arrear examination will be held in February of every academic year.

8.2 If the date of commencement of Examination falls on Saturdays, Sundays or declared Public Holidays, the examination shall begin on the next working day.

## 9. WORKING DAYS DURING ACADEMIC YEAR

Each academic year shall consist of not less than 200 working days which will be spreaded over a period of 12 months

## 10. ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATIONS

10.1 No candidate shall be permitted to appear for the University Examinations, unless he/she attends the course for the prescribed period and produces the necessary certificate of attendance and satisfactory conduct from the Head of the Institution.

10.2 Every candidate is required to put in minimum of 80% of attendance both in theory and practical separately in each subject before admission to the examination.

10.3 A candidate lacking in the prescribed attendance in any subject in theory and practical shall not be permitted for admission to the entire examinations.

10.4 A candidate lacking in the prescribed attendance in any one subject in the first appearance shall be detained for all the subjects of the year.

**10.5** Detained candidates due to lack of Attendance, who are not promoted to the next year of study are required to put in minimum 80% of attendance during the extended period of study before appearing for the next examination. These detained candidates shall move as additional batch for the subsequent year examinations.

## 11. CONDONATION OF LACK OF ATTENDANCE

11.1 Discretionary power of condonation of shortage of attendance up to a maximum of 10% of minimum attendance prescribed for admission to the examination rests with the Vice-chancellor. A candidate lacking in attendance should submit an application in the prescribed form 15 days prior to the commencement of the theory examination to the University through the Head of the Institution.

11.2 The Head of the Institution should satisfy themselves on the reasonableness of the candidate‘s request while forwarding the application of the candidate to the Controller of Examinations who would obtain the vice Chancellor’s approval for

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admission to the examination. No application shall be considered if it is not forwarded through proper channel.

11.3 The Head of the Institution, while recommending and forwarding the application for condonation should take into consideration the following circumstances:-

11.3.1 Any illness affecting the candidate:-he/she, should have submitted to the Head of the Institution, a medical certificate from a registered medical practitioner of SRM General Hospital soon after returning to the institution after treatment.

11.3.2 Any unforeseen tragedy in the family: - The parent/ guardian should have given in writing the details of the ward's absence to the Head of the Institution.

11.3.3. Participation in NCC/NSS and other co-curricular activities representing the Institution or University: A certificate issued by the Officer-in-charge of the student activities concerned certifying the participation of the student in the event which necessitation the student's absence duly endorsed by the Head of the Institution should be enclosed.

## 12. CLASS ADVISOR

There shall be a class advisor for each class. He / She will be appointed by the Head of the Department concerned. The responsibilities for the class advisor shall be:

12.1 To act as the channel of communication between the Head of the Department and the students of the respective class.

12.2 To collect and maintain various statistical details of students.

12.3 To monitor the academic performance of the students including attendance and to inform the Head of the Department

12.4 To attend to the student's welfare activities like Cultural, Sports and Conference industrial visits.

## 13. INTERNAL ASSESSMENT MARKS

13.1 A minimum of three written examinations shall be conducted in each subject during a year and the marks of these three examinations shall be summated for the award of Internal marks. 50 Marks will be awarded by internal assessment (IA), which will include IA I, IA II, Model exam including Attendance, File submission, assignment, designing assistive device.

13.2 A failed candidate in any subject in University examination shall be provided an opportunity to improve his Internal marks by conducting a minimum of two examinations in theory and practical separately.

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13.3 The internal assessment marks shall be submitted to the University endorsed by the Head of the Institution 15 days prior to the commencement of the theory examinations.

**INTERNAL ASSESSMENT**

| Sl.NO | Split-up components | December | April | July |
|---|---|---|---|---|
| A | Written Exam | IA I | IA II | Model |
| B | Practical /Oral | IA I | IA II | Model |
| C | Case file / splint paper pattern<br>Record/ Activity file submission | | | |
| D | Assignment | | | |
| E | Attendance | | | |

| Attendance Percentage Range | Marks to be Awarded |
|---|---|
| 0-75 | 0 |
| 76-80 | 1 |
| 81-85 | 2 |
| 86-90 | 3 |
| 91-95 | 4 |
| 96-100 | 5 |

Attendance Marks out of 95

Internal Assessment = A+B+C+D+E =50

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## INTERNAL ASSESSMENT MARKS

**BOT – 1ST YEAR** **Maximum Marks : 50**

| Sl. No | Subject Code | Subject | Theory | | | Activity Analysis file | Assignment | Attendance | Practical/Viva (15) | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1st Internal Test | 2nd Internal Test | Model Exam | | | | IA | IIA | MO | |
| 1 | BOT 16 101 | Anatomy | 10 | 10 | 10 | - | | 5 | 5 | 5 | 5 | 50 |
| 2 | BOT 16 102 | Physiology | 10 | 10 | 10 | - | | 5 | 5 | 5 | 5 | 50 |
| 3 | BOT 16 103 | Psychology | 10 | 15 | 15 | - | 5 | 5 | - | - | - | 50 |
| 4 | BOT 16 104 | Sociology | 10 | 15 | 15 | - | 5 | 5 | - | - | - | 50 |
| 5 | BOT 16 105 | Analyzing Occupations and activities | 5 | 10 | 10 | 5 | | 5 | 5 | 5 | 5 | 50 |

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**BOT SECOND YEAR**

| Sl. No | Subject Code | Subject | | Theory | | | Case presentation | Assignment | Attendance | Practical/Viva (15) | | | Total I.A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 1st Internal Test | 2nd Internal Test | Model Exam | | | | IA | IIA | MO | |
| 1 | BOT 16 201 | General Medicine, | | 5 | 5 | 5 | - | - | 5 | - | - | - | 50 |
| | | General Surgery and Paediatrics, | | 5 | 5 | 5 | - | - | | | | | |
| | | | | 5 | 5 | 5 | - | - | | | | | |
| 2 | BOT 16 202 | Pathology | 25(m) | 5 | 5 | 8 | - | 5 | 5 | - | - | - | 50 |
| | | Microbiology | 25(m) | 5 | 5 | 7 | - | 5 | | | | | |
| 3 | BOT 16 203 | Biomechanics and applied Anatomy | | 5 | 10 | 10 | - | 5 | 5 | 5 | 5 | 5 | 50 |
| 4 | BOT 16 204 | Health Psychology, Clinical Psychology | | 8 | 8 | 8 | - | - | 5 | - | - | - | 50 |
| | | Clinical Psychiatry | | 7 | 7 | 7 | - | - | | | | | |
| 5 | BOT 16 205 | Fundamentals for Occupational therapy practices | | 5 | 10 | 10 | 5 | | 5 | 5 | 5 | 5 | 50 |

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**BOT IIIrd Year**

| Sl.No | Subject Code | Subject | Theory | | | Clinical Record | Assignment | Attendance | Practical/Viva(15) | | | Total I.A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1st Internal Test | 2nd Internal Test | Model Exam | | | | IA | IIA | MO | |
| 1 | BOT 16 301 | Clinical Orthopedics | 10 | 10 | 10 | | - | 5 | 5 | 5 | 5 | 50 |
| 2 | BOT 16 302 | Clinical Neurology | 10 | 10 | 10 | | - | 5 | 5 | 5 | 5 | 50 |
| 3 | BOT 16 303 | Community Medicine | 10 | 15 | 15 | | 5 | 5 | - | - | - | 50 |
| 4 | BOT 16 304 | OT in Orthopedics and Neurology | 5 | 10 | 10 | 5 | - | 5 | 5 | 5 | 5 | 50 |
| 5 | BOT 16 305 | OT in Pediatrics | 5 | 10 | 10 | 5 | - | 5 | 5 | 5 | 5 | 50 |

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**BOT 4th Year**

| Sl. No. | Subject Code | Subject | Theory | | | Clinical Record | Assignment | Attendance | Practical/Viva (15) | | | Total I.A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1st Internal Test | 2nd Internal Test | Model Exam | | | | IA | IIA | MO | |
| 1 | BOT 16 401 | Clinical Cardiorespiratory and Work Physiology | 10 | 10 | 10 | | - | 5 | 5 | 5 | 5 | 50 |
| 2 | BOT 16 402 | Rehabilitation Medicine | 15 | 15 | 15 | | - | 5 | - | - | - | 50 |
| 3 | BOT 16 403 | OT in Organization and Administration | 10 | 15 | 15 | 5 | - | 5 | - | - | - | 50 |
| 4 | BOT 16 404 | OT in Rehabilitation | 5 | 10 | 10 | 5 | - | 5 | 5 | 5 | 5 | 50 |
| 5 | BOT 16 405 | Group Process in OT | 10 | 15 | 15 | 5 | - | 5 | - | - | - | 50 |
| 6 | BOT 16 406 | OT in Psychiatry | 5 | 10 | 10 | 5 | - | 5 | 5 | 5 | 5 | 50 |

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**14. UNIVERSITY EXAM MARKS QUALIFYING FOR A PASS**

A candidate shall be declared to have passed the examination if he/she obtains the following qualifying marks:

14.1 40 % in University Theory examinations

14.2 50% in university practical examinations

14.3 50% in University Viva Voice

14.4 50% aggregate in overall theory and practical / oral and internal assessments marks together

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| MARKS DISTRIBUTION TABLE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Subject Code | Subject Title | Marks Allotted | | | | | | | | |
| | | Internal Assessment | University Exam | | | | | | Total (I.A+Theory+Practical/ Oral) | |
| | | | Theory | | Practical | | Oral | | | |
| | | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| BOT FIRST YEAR | | | | | | | | | | |
| BOT16101 | Anatomy | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16102 | Physiology | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16103 | Psychology | 50 | 40 | 100 | - | - | | | 75 | 150 |
| BOT16104 | Sociology | 50 | 40 | 100 | - | - | | | 75 | 150 |
| BOT16105 | Analyzing occupations and Activities | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |
| BOT SECOND YEAR | | | | | | | | | | |
| BOT16201 | General Medicine, General Surgery and Pediatrics, | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16202 | Pathology and Microbiology | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16203 | Biomechanics and Applied Anatomy. | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16204 | Health Psychology, Clinical Psychology and Clinical Psychiatry | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16205 | Fundamentals for Occupational Therapy Practice | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |

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**INTERNAL ASSESSMENT MARKS**

| Subject Code | Subject Title | Marks Allotted | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Internal Assessment | University Exam | | | | | | Total (I.A+Theory+Practical/Oral) | |
| | | | Theory | | Practical | | Oral | | | |
| | | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| **BOT THIRD YEAR** | | | | | | | | | | |
| BOT16301 | Clinical Orthopedics | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16302 | Clinical Neurology | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16303 | Community Medicine | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16304 | OT in Orthopedics and Neurology | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |
| BOT16305 | OT in Pediatrics | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |
| **BOT FOURTH YEAR** | | | | | | | | | | |
| BOT16401 | Clinical Cardiores-piratoryand Work Physiology | 50 | 40 | 100 | - | - | 25 | 50 | 100 | 200 |
| BOT16402 | Rehabilitation Medicine | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16403 | OT in Organization and Administration | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16404 | OT in Rehabilitation | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |
| BOT16405 | Group Process in OT | 50 | 40 | 100 | - | - | - | - | 75 | 150 |
| BOT16406 | OT in Psychiatry | 50 | 40 | 100 | 38 | 75 | 13 | 25 | 125 | 250 |

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## 15. CARRY-OVER OF FAILED SUBJECTS

15.1 For a candidate to become eligible for enrollment to a next year, the candidate shall have registered and appeared in the university examinations of at least ONE course in previous year.

15.2 Candidates are allowed to carry over failed subjects up to 3 ½ years.

15.3 Candidates are not permitted to take up final year examinations unless he / she clears all the previous year subjects.

15.4 The duration of BOT course is for 4 ½ years. He / She may be allowed two-year period beyond the normal duration to clear their backlog papers to be qualified for the degree which includes the internship period of six months.

## 16. RE-ADMISSION AFTER BREAK OF STUDY

16.1 Candidates having a break of study of five years and above from the date of admission will not be considered for re-admission.

16.2 Candidates having break of study shall be considered for re-admission provided that they are not subjected to any disciplinary action and no charges are pending or contemplated against them.

16.3 All re-admission of candidates are subject to the approval of the Vice-Chancellor.

16.4 The candidates having a break of study below six months shall apply for re-admission in the prescribed form and remitted the stipulated fee for condonation to the Registrar of the University. The candidates may be re-admitted in the corresponding course of study at the commencement of the session and shall undergo the period of study as prescribed. After fulfillment of the regulations of the University be admitted for the examination. The candidates shall be granted exemption in the subjects they have already passed.

16.5 The candidates having break of study of three years but less than five years shall apply for re-admission in the prescribed form and remitting the stipulated fee for condonation to the Registrar of the University. The candidate may be permitted to re-join the course as the case may be.

## 17. MIGRATION / TRANSFER OF CANDIDATES

17.1 Migration/Transfer of candidates from one recognized institution to another institution of this University or from another University shall not generally be considered.

17.2 However, under extraordinary circumstances, the Vice-Chancellor shall have the powers to place any migration/transfer he deems fit in the Governing council and get its approval for grant of permission migration/transfer to candidates undergoing course of study in affiliated institutions of this University.

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## 18. VACATION

The Head of Institution shall declare vacation not exceeding 60 days in an academic year.

Summer = 30 days (May)

Winter =15 days (December)

## 19. COMPULSORY INTERNSHIP

19.1. Every candidate admitted to the BOT degree shall undergo 6 months of compulsory internship in the institute he/she has studied after successful completion of the final year examination. Student should take up small project, or simple studies based on the area of interest and formally document the report in order for the student to complete the internship program.

19.2 Candidates are not permitted for internship unless he/she clears all the subjects of the BOT course.

19.3 Minimum of five students can form a group and do group projects.

19.4 Students should complete the study and submit to the institution to complete their internship program.

19.5 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.

19.6 In case the candidate enters break of internship regulation for readmission after break of internship training for Medical, Dental and Allied Health Science laid by SRM University shall be followed.

| S.NO | CLINICAL AREAS | DURATION |
|---|---|---|
| 1 | Pediatrics | 1 Month |
| 2 | Orthopedics | 1 Month |
| 3 | Neurology | 1 Month |
| 4 | Mental Health | 1 Month |
| 5 | Physical Medicine Rehabilitation | 1 Month |
| 6 | Community Based Rehabilitation | 1 Month |

All the above mentioned postings and durations are compulsory

## 20. AWARD OF DEGREE

The Degree shall be awarded by the University only after the completion of the all four year and six months of compulsory internship.

## 21. CLASSIFICATION OF SUCCESSFUL CANDIDATES

| Category | First attempt within the course duration | Passed in more than one attempt within the course duration | Passed after the course duration |
|---|---|---|---|
| BOT | 75% ≤100% -First class with distinction | N/A | N/A |
| | 60% ≤ 75% - First class | 60% ≤ 100% - First class | N/A |
| | 50% ≤ 60% - Second class | 50% ≤ 60% - Second Class | 50% ≤ 100% - Second class |

## 22. AUTHORITY TO ISSUE TRANSCRIPT

The University / College shall be the authority for issuing transcript after remitting the prescribed fee.

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**23. Question Paper Pattern:**

**BOT DEGREE EXAMINATION** **Total Marks =100**

**Time =3 Hours**

**Part –A (2x15=30Marks)**

**Answer ANY TWO Questions**

**1.**
**2.**
**3.**

**All Questions carry equal marks.**

**Part-B (10x5=50 Marks)**

**Write short notes on ANT TEN of the following**

**4.**
**5.**
**6.**
**7.**
**8.**
**9.**
**10.**
**11.**
**12.**
**13.**
**14.**
**15.**

**All Questions carry equal marks.**

**Part –C (20x1= 20 Marks)**

**The MCQ Booklet contains 20 Multiple choice Questions.**

**Answer ALL questions. All Questions carry equal marks.**

**MCQ time : 20 Minutes**

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## BOT FIRST YEAR
**University Exam at the end of I year**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16 101 | Anatomy | 7 | 200 |

**COURSE DESCRIPTION**

The study of Anatomy will include identification of all gross anatomical structures. Particular emphasis will be placed on description of bones, joints, muscles, brain, cardio-pulmonary and nervous systems as these relate to the application of Occupational Therapy.

**COURSE OBJECTIVE**

The objective of this course is that after 200 hours of lectures, demonstrations and practicals, the student will be able to demonstrate knowledge in human anatomy as in necessary for the study and practice of Occupational Therapy.

**Course Outline**

**UNIT I**

**A. INTRODUCTION**

1. Define Anatomy and mention its sub-divisions
2. Name regions, cavities and systems of the body
3. Define anatomical position and anatomical terms

**B. CELL**

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

**C. TISSUES**

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

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**D. CARDIO-VASCULAR SYSTEM**

1.
   a. Comprehend the external and internal features of the structure of the heart and their implications.
   b. Mention position of the heart
   c. Identify and name the chambers of the heart, surfaces and borders of the heart
   d. Identify the venae cavae, pulmonary trunk and aorta
   e. Mention the Internal features of the chambers of the heart

2.
   a. State the basic features of the blood supply and nerve supply of the heart.
   b. State the basic arrangement of the pericardium
   c. Identify the coronary arteries and coronary sinus
   d. Name the parts of the conducting system of heart

3.
   a. Mention the position and general distribution of major arteries and major veins and name their main branches
   b. Name the types of arteries and veins. Give examples and indicate a basic microscopic structure of types of blood vessels.

**E. LYMPHATIC SYSTEM**

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

**UNIT II**

**F. RESPIRATORY SYSTEM**

1. a. List the parts of respiratory system
   b. Comprehend the functional anatomy of the parts of the respiratory system
   c. Mention the basic features of innervation of bronchi and lungs
2. a. State the position, extent and gross and microscopic structure of the parietal pleura
   b. Comprehend the arrangements of pleurae. 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 bronchopulmonary segments
   g. Illustrate the main features of the microscopic structure of the lung

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h. Identify the borders and surfaces of the lung on the specimen.

**G. DIGESTIVE SYSTEM:**

1. a. List the parts of the digestive system
   b. Mention the boundaries and features of the mouth
   c. Classify teeth
   d. Mention position, extent, sub-division, communication, internal features and muscles of pharynx
   e. Identify internal features of the mouth and pharynx in the specimen

2. a. State the position, course and extent of oesophagus.
   b. Identify oesophagus in the specimen
   c. State its basic nerve supply

3. a. Mention the position and gross structure of the stomach
   b. Identify the stomach and its borders, the surfaces and sub-divisions
   c. Enumerate the immediate relations of the stomach
   d. State the basic nerve supply of the stomach

4. a. Name the sub-divisions of intestine and mention their positions
   b. Mention the difference between small and large intestine

5. a. Name the arteries arising from abdominal aorta
   b. Name and mention positions of the principal autonomic visceral nerve plexuses in the abdomen and pelvis and the organs supplied by them.
6. Mention the position and gross features of the liver and biliary system
7. Name the position and sub-divisions of the pancreas
8. a. Name the major salivary glands
   b. Indicate their positions
   c. Mention the site of openings of their ducts

**H. Genito-Urinary System**

1. a. Comprehend the basic functional implications 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 a kidney
   e. Identify the ureter and indicate the position of the ureter
2. a. State the anatomy of the bladder and urethra
   b. Mention the position, shape, size and surfaces of the bladder
   c. Indicate the immediate relations of the bladder

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d. Mention the basic innervation of the bladder
e. Name and identify the sub-divisions of 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

3. a. List the parts of male reproductive organs and its location. State the anatomy and functional considerations of the testes, male accessory organs of reproduction and external organs.
b. Name the constituent structure of the spermatic cord
c. Mention the position of the inguinal canal
d. Name the component structures and parts of the penis

4. a. List the female reproductive organs and their location. 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.

**UNIT III**

**I. NERVOUS SYSTEM**

1. a. Define the sub-divisions of nervous system. Define central, peripheral and autonomic nervous systems and name their sub-divisions. Comprehend the position and formation of the spinal cord, its structure and functions 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 multi synaptic 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, sites of crossing of fibres of these tracts and functions of each tract.
g. State the main consequences of spinal cord transection and hemisection and explain the rationale of cordotomy.
h. Indicate the blood supply and meninges of spinal cord

2. a. Name the sub-divisions of brain. Identify and mention the external features of parts of the brain.

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

3. Outline the basic features of sensory organs, nose, tongue, eye, ear and skin.

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

5. a. State the formation, circulation and drainage of CSF.
b. Locate and identify the ventricles
c. Identify and name the meninges and spaces around and locate cisterns
d. Define lumbar puncture and cisternal puncture
e. State the features of the meninges
f. Recognise the differences between extradural, subdural and subarachnoid heamorrhage.

6. 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 they supply.
d. Predict the result of blockage or rupture of central deep branches
e. Predict the result of occlusion of cerebral arteries
f. Predict the result of occlusion of vertebral basilar arteries
g. Identify and mention the connections of dural venous sinuses
h. Name and identify the parts of the limbic system. Mention their function in emotion and behaviour.

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7. a. Mention the position and structure of the autonomic nervous system.
   b. Mention the site of origin and termination of preganglionic and post ganglionic sympathetic and parasympathetic fibres.
   c. Name and locate the sympathetic and para-sympathetic ganglia.
   d. Summarize the functional differences between sympathetic and parasympathetic system

8. 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 VII nerve.
   d. Predict the result of injury to cranial nerves

9. a. Anatomy of Spinal cord-review
   b. Name the groups 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 of nerves

**J. ENDOCRINE SYSTEM**

1. List the endocrine organs and mention their positions
2. Mention the hormones produced by each endocrine organ

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**UNIT IV**

**K. INTRODUCTION TO BONES (OSTEOLOGY)**

1. a. Define Skeleton
   b. Mention the sub-divisions of skeleton. Name the bones in each sub-division. Mention the number of bones in each sub-division and total number of bones.
   c. Classify the bones and give examples
   d. Enumerate the common surface features of bones
   e. Define ossification. Explain the types of ossification and give examples. Explain the growth of a long bone in length and width.
   f. Indicate blood supply and nerve supply of a bone

2. a. Identification and orientation of bones
   b. Identify surfaces, borders and all other surface features
   c. Mark and indicate the muscular and ligamentous attachments on the bone

**L. INTRODUCTION OF JOINTS (SYNDESMOLOGY/ARTHROLOGY)**

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

2. When regional anatomy is taught
   a. Mention the type, the articular surfaces, ligaments, movements, axes of movements, chief muscles producing the movements, limiting factors and nerve supply and blood supply of all individual joints.
   b. Mention the factors for stability
   c. Articulate the bones correctly
   d. Explain applied anatomy for all joints.

**M. INTRODUCTION TO MUSCLES (SKELETAL MUSCLE) (MYOLOGY)**

1. a. Define a skeletal muscle
   b. Define faciae, tendon, aponeurosis
   c. Classify the skeletal muscles by shape etc and give examples.
   d. Define origin, insertion, muscle work (contractions), type of muscle work, range of muscle work, group actions agonists, antagonists, synergists and fixators, shunt and spurt muscles, types of lever with examples.
2. When regional anatomy is taught

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a. Mention the position, origin, insertion, nerve supply and actions of the skeletal muscles.
(For the skeletal muscles of soft palate, pharynx and larynx, position, action and nerve supply may be sufficient).
b. Indicate group of muscles by position and group action and nerve supply of group of muscles.
c. Indicate segmental innervation of muscles
d. Predict the result of paralysis of individual and group of muscles.

**N.UPPER EXTREMITY**

1. **Pectoral region**

a. Outline the features of pectoral region
b. Name and identify 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, surfaces, processes, fossae and other features of scapula.
g. Identify the ends, head, greater and lesser tubercles 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.

**2. SCAPULAR REGION**

a. Comprehend the main features of the muscles in the scapular region
b. State the layered arrangements of the muscles of the back
c. Name and identify the muscles of scapular region. Mention their origin, insertion, nerve supply and actions
d. Demonstrate the bony landmarks of scapula, humerus and clavicle

**3. AXILLA**

c. Mention and identify the boundaries and contents of axilla. Name the branches of axillary artery'. Name and identify the cords and branches of brachial plexus and mention their root value.
d. Illustrate the formation of brachial plexus

**4. SHOULDER GIRDLE**

a. Comprehend the main features of joints of the shoulder girdle.
b. Name the joints of shoulder girdle. Identify the articular surfaces and name the ligaments and movements of sternoclavicular and acromioclavicular joints. Mention the type of the joints.

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c. Demonstrate and name the movements of scapula. Mention the chief muscles producing these movements. Correlate movements of scapula.
d. Assign functional roles of the articular disc, costoclavicular ligament of sternoclavicular joint and coracoclavicular ligament.

**5. SHOULDER JOINT**

a. Mention the type, articular surfaces 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. Analyse these movements and mention limiting factors.
d. Mention the blood supply and nerve supply of this joint.
e. Analyse the association of movements of scapula and movements shoulder joints.
f. Mention the limiting factors and the factors for its stability. Indicate applied anatomy.

**6. 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, tubercles, surgical neck, bicipital groove, condyles, capitulum, trochlea, epicondyles, radial, coronoid and olecranon fossae.
c. Mention the origin, insertion, nerve supply and actions of the muscles of the front and back of upper arm.
d. Indicate the course, relations and distribution of radial and musculo-cutaneous, nerves.

**7. ELBOW JOINT**

a. Mention the type, articular surfaces and ligaments of elbow joint.
b. Define and demonstrate the movements possible and name the chief muscles producing these movements.
c. Mention the factors for stability and limiting factors.
d. Indicate the applied anatomy.
e. Mention the blood supply and nerve supply.
f. Explain the carrying angle.

**8. 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.

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e. Mention the position, origin, insertion, nerve supply and action of these muscles.
f. Indicate the course, relations and distribution of median, ulnar and radial nerves.
g. Mention the type, articular surface and ligaments of radioulnar joints. Define the movements and muscles producing these movements. Analysis and functional application of these movements in daily activities.
h. Mention the position and distribution of radial and ulnar 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 its blood supply and nerve supply. Mention the visible tensions around the wrist and their synovial sheaths.
j. Predict the result of paralysis of muscles of the forearm.
k. Mention the functional implications if prehension is lost in the hand.
l. Indicate the arrangement of tensions of the digits, retinacula, fibrous flexor sheaths and synovial sheaths.
m. Evaluate the hinge type of interphalangeal joints, ellipsoid type of metacarpophalangeal joints and saddle type of carpometacarpal joint.
n. Name and identify the small muscles of the hand. Mention their position, origin, insertion, nerve supply and action.
o. Mention the type of bones forming and ligaments of joints of hand. Define the movements and the muscles producing these movements. Predict the results of paralysis of the small muscles of hand.
p. Demonstrate the types of grip.

**9. NERVES OF UPPER LIMB**

a. Comprehend the knowledge of the position distribution of nerves of upper limb and explain, the application of the same.
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.

**10. BLOOD VESSELS AND LYMPH NODES:**

a. Comprehend the knowledge of the position and distribution of blood vessels and lymph nodes and their application.
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.

**11. CUTANEOUS NERVES OF UPPER LIMB**

a. Name the cutaneous nerves and illustrate the areas of their distribution.
b. Illustrate the dermatomes.

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**UNIT V**

**O. LOWER EXTREMITY**

1. a. Name and identify the orientation of hip bone, femur, tibia, fibula and patella.
   b. Identify the components and features of hip bone. Identify the ends, borders, surfaces, head, neck, trochanters, condyles and epicondyles of femur and the features of the tibia and fibula.
   c. Identify and mention the origin, insertion, nerve supply and action of the muscles in the front and back of thigh.
   d. Mention the boundaries and contents of femoral triangle and 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 femoral vein.

2. a. Name and identify the muscles of the leg. Mention their origin, insertion, nerve supply and tibial artery distribution.
   b. Mention the position and attachment of flexor retinaculum.
   c. Mention the arrangement, origin, insertion, nerve supply and action of muscles of foot.
   d. Indicate the types and formation and factors for the maintenance of the arches of foot.
   e. Mention the type, articular surface, ligaments, movements, chief muscles for the movement, axes of movements and applied anatomy of tibiofibular joint, ankle joint, subtalar joints, M.P. joints and I.P. joints.
   f. Palpation and identification of the tendons around the ankle and dorsum of foot.

**3. MEDICAL SIDE OF THIGH**

   a. Names and identifies the muscles of the medical side of thigh. Mentions their origin, insertion, nerve supply and action.
   b. Indicates the course, relations and distribution of obturator nerve.

**4. BACK OF THIGH**

   a. Identifies and mentions the position, origin, insertion nerve supply and action of the hamstring muscles.
   b. Indicates the position, course, relation and distribution of sciatic nerve.
   c. Gluteal region
   d. Identifies and mentions the position, origin, insertion, nerve supply and action of the muscles.

Names and mentions the position and course of the nerves found there and names the arteries there.

**5. HIP JOINT**

   a. Mentions the type, particular surface and ligaments.

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b. Defines the movements and names the chief muscles producing the movements.
c. Mentions the blood supply, nerve supply, factor for stability and limiting factors.
d. Indicates applied anatomy.

**6. KNEE JOINT**

a. Mentions the type, articular surfaces, and ligaments.
b. Defines the movements and names and chief muscles for the movements.
c. Analyses the movements.
d. Knows the blood supply and nerve supply.
e. Indicates applied anatomy.
f. Defines locking and unlocking of the joint.

**7. POPLITEAL FOSSA**

a. Indicates the boundaries and contents
b. Mentions the position and branches of tibial and common peroneal nerves.
c. Front of leg and dorsum of foot
d. Names and identifies the tarsal bones, metatarsal bones and phalanges in an articulated foot.
e. Names and identifies the muscles.
f. Mentions the positions, origin, insertion, nerve supply and action of the muscles.
g. Position and distribution of deep peroneal nerve.
h. Indicates the position and attachment of extensor retinaculae.
i. Mentions and identifies the features of the tibia and fibula.

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**8. LATERAL SIDE OF LEG**

a. Names and identifies the muscles.
b. Mentions the position, origin, insertion, nerve supply and action of muscles.
c. States the position, course and distribution of superficial peroneal nerve.
d. States the position and attachment of peroneal retinacula.

**9. BACK OF LEG AND SOLE OF FOOT.**

a. Name and identifies the features of the bones the foot.
b. Names and identifies the muscles of back of leg.
c. Mentions the position, arrangement, origin, insertion, nerve supply and action of the muscles.
d. States the position, course and distribution of tibial artery.
e. States the position and distribution of posterior tibial artery.
f. Mentions the position and attachment of flexor retinaculum.
g. Indicates the types of formation and factors for the maintenance of the arches of foot.
h. Mentions the type, articular surface, ligaments, movements chief muscles for the movement. Axes of movements and applied anatomy of tibiofibular joints, ankle joints, subtalar joints and I.P. joints.
i. Palpates and identifies the tendons around the ankle and dorsum of foot.

**10. NERVES**

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

**11. BLOOD VESSELS**

a. Indicate the position of arteries and their main branches.
b. Indicate the position of veins and their main tributaries.
c. Indicate the position of lymph nodes.

**P. TRUNK-THORAX-ABDOMEN**

*Vertebral column:*

1. State the basic osteology of vertebral column.
2. Identify parts of a typical vertebra of each group of vertebrae. Identify a typical vertebra. Identify an atypical vertebra.
3. State the form, structure and movements of joints of vertebral column. Mention the movements and the muscles producing them.
4. Identify the intervertebral disc and mention its parts.
5. State the formation and ligaments of the intervertebral joints.

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6. Name and identify the curvatures of the vertebral column and indicate deformities.
7. State the contents of vertebral canal.

***Thoracic Spine***

1. State the main features of the bones and joints of thoracic cage. Mention the boundaries.
2. Identify parts of a typical vertebra. Identify and state the main features of typical vertebra.
3. State the form, structure and movements of joints of vertebral column. Mention the movements and the muscles producing them.
4. Identify the intervertebral disc and mention its parts.
5. State the formation and ligaments of the intervertebral joints.
6. Name and identify the curvatures of the vertebral column and indicate deformities.
7. State the contents of vertebral canal.

***Thoracic Cage:***

1. 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. Mention the parts and features of typical rib.
   d. Mention the type and formation of the joints between rib and vertebrae, 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. Explain pump handle and bucket handle movements of ribs.
   g. Palpate bony land marks such as jugular notch, sternal angle, xiphisternum and spines of thoracic vertebrae.

2. 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.

3. a. Define the boundaries and sub-divisions of the mediastinum and list the contents. Identify the contents.
   b. State the features of thoracic parts of sympathetic trunk.

***Abdomen:***

1. a. Mention the main features of lumbar vertebrae, sacrum and coccyx.
   b. Mention the formation and sub-divisions of the bony pelvis. List the features of the female bony pelvis and their roles.

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

2. a. Define abdominal cavity.
   b. List the layers of anterior abdominal wall. Name and mention the origin, insertion, nerve supply and action of the muscles and the feature of these muscles.
   c. Explain the formation of rectus sheath and list its contents.
   d. Define inguinal canal and explain 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. List the organs on 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. Explain the muscles of the back in layers. Mention the arrangements of lumbar fascia. Identify the muscles in lumbar region. Explain the lumbar routes to abdomen. Identify and mention the attachments and actions of the large muscles of back.
   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.

**Q. PELVIS**

1. State the main features, sub-divisions, boundaries, walls and floor of pelvis.
2. Mention the features of the pubic symphysis and sacroiliac joints.
3. Compare the major differences between the male and female pelvis.
4. Identify the muscles of the pelvic floor and mention their attachments, actions and nerve supply.
5. Mention the structure of the urogenital diaphragm.

**R. HEAD AND NECK**

Musculoskeletal and neurovascular features. Identify and explain the anterior and posterior triangles of neck. Name the sub-divisions. List the contents.

1. 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 fossae and hypophyseal fossa.
   d. Identify the internal and external auditory meatuses, foramen magnum and stylomastoid foramen and name the main structure passing through them.
   e. Identify the name of main muscles of the face. Mention their nerve supply and action.

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f. Predict the result of paralysis of the facial muscles and sequel of injury to the facial nerve (VII nerve).
g. Map the cutaneous distribution of the three divisions of the trigeminal nerve (V nerve) on the face.

2. a. Identify the general feature of atypical cervical vertebra atlas, axis and seventh cervical vertebra.
b. Identify the erector spinae, sternomastoid and scalenei muscles. 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 values of the nerves of cervical and brachial plexus.
e. Demonstrate the action of sternomastoid.
f. Mention the type, articular surfaces, ligaments, movements and muscles producing these movements and the movements of the cervical part of vertebral column.

3. 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.
d. State the basic organisation of the autonomic nervous system.
e. State the sites of craniosacral and thoracolumbar outflows.
f. Define the modes of distribution of pre and post ganglonic efferent neurons in sympathetic and parasympathetic nervous system.
g. Name the cranial nerves containing parasympathetic fibers and mention their distribution.
h. Distinguish between sympathetic and parasympathetic systems in relation to their functions.

**EYE**

1. State the position of the lacrimal apparatus, the functional implications of structure of the eye and the lacrimal apparatus.
2. Name and illustrate the coats, their sub-divisions, the refractive media, the chambers of the eye and the optic nerve.
3. Mention the structure of retina and optic pathway.
4. Briefly explain the basic information of the light and accommodation reflexes (omitting the pathways).
5. Mention the distribution of the three divisions of trigeminal nerve (V nerve).
6. Name and state the nerve supply and simple actions of the extraocular muscles.

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7. Predict the results of lesions of III, IV and VI cranial nerves.

**NOSE**

1. Name the bony components of the nose
2. Mention the parts and boundaries of the nose
3. State the main features of the nasal cavity
4. Name and identify the paranasal air sinuses and locate their openings.

**TEMPOROMANDIBULAR JOINT**

1. State the type, articular surface, ligaments, possible movements, muscles performing the movements and nerve supply of the temporomandibular joint.
2. Palpate and identify the joint and its articular surfaces
3. Identify and name the muscles of mastication. Mention their actions and nerve supply.

**MOUTH**

1. State the main features of the mouth cavity, tongue, palate, salivary glands, teeth and gums.
2. Mention the sensory and motor innervation of the tongue.
3. Identify the salivary glands.
4. Demonstrate movements of the tongue and palate.
5. Test and produce the swallowing (gag) reflex.
6. Predict the sequelae of lesions of the VII and XII cranial nerves

**PHARYNX**

1. State the position and extent of the pharynx
2. State the three sub-divisions and the features of each sub-division.
3. Name the muscles of pharynx and their action.
4. Mention the sensory and motor innervation of the pharynx.

**LARYNX AND TRACHEA**

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

**EAR**

1. State the basic structural plan of the organs of hearing and equilibrium.

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2. Mention the three sub-divisions of the ear.
3. Mention the nerve endings for hearing and equilibrium.

**CRANIAL NERVES**

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

**Evaluation: Class Tests and Unit Tests**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCES**


1. Ross and Wilson – "Anatomy and Physiology in Health and IIIness".
2. Ranganathan T.S.- "Text book of Human Anatomy"
3. Gray's Anatomy 38th Edition for Reference only


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**Physiology**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16 102 | Physiology | 4 | 150 |

**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, musculo-skeletal and nervous systems.

**COURSE OBJECTIVE**

The objective of this course is that after 150 hours of lectures, demonstrations and practicals the student will be able to demonstrate an understanding of elementary human physiology and Bio-Chemistry.

The student will be able to show their proficiency based on written oral and internal evaluation.

**COURSE OUTLINES**

**UNIT I**

**A. CELL INTRODUCTION**

Outline of basic concepts of cell structure, functions of components transport across membranes.

**B. SKIN**

Structure, functions, blood flow, temperature regulation.

**C. BLOOD**

1. Outline the components and their functions: RBC, WBC, Platelet, blood groups.
2. Significance of RBC and WBC count, ESR and other related tests.
3. Clotting mechanisms.
4. Blood volume and its regulation.

**UNIT II**

**D. CIRCULATION**

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

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**E. RESPIRATION**

1. Defence mechanisms in the respiratory tree, mucociliary transport. Mechanics of respiration.
2. Transport of blood gases. Acid-base balance.
3. Lung function tests (including lung volumes) Artificial ventilation.
4. Nervous and chemical regulation of respiration.
5. Hypoxia - types and causes.
6. Effects of exercise on respiration.

**UNIT III**

**F. DIGESTION**

1. Digestion in the mouth, stomach and intestine.
2. Bile, pancreatic secretion.
3. Mechanisms of control of secretions and motility.
4. Diet and nutrition.

**G. EXCRETION**

1. Structure of the nephron
2. Formation of urine
3. Micturition.

**UNIT IV**

**H. ENDOCRINES**

1. General metabolism, carbohydrate, protein and fat metabolism.
2. Outline of the various hormones and their actions with special emphasis on thyroxine and parathyroid hormone. Abnormalities in function.

**I. REPRODUCTION**

1. Male reproductive system
2. Female reproductive system
3. Outline of pregnancy, function of placenta, parturition, lactation, contraceptive measures.
4. Physiology of the fetus, factors that affect fetal growth.

**UNIT V**

**J. NERVOUS SYSTEM**

1. Structure of neurons.
2. Properties of neurons (excitation and conduction).
3. Synapses and synaptic transmission, reflexes and properties of reflexes.
4. Sensory endings.
5. Spinal cord, pathways in the spinal cord in detail.
6. Brain stem, thalamus, basal ganglia, cerebellum, cerebral cortex.

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7. Control of posture and control of voluntary motor activity.
8. Autonomic nervous system.

**K. SPECIAL SENSES**

1. Vision
2. Audition, olfaction, gustation, vestibular apparatus.

**L. MUSCLE**

1. Structure of muscle tissue: Gross structure and microscopic structure, arrangement of myofibrills, myoneural junction.
2. Chemical processes involved in muscle contraction.
3. Physiology of muscle contraction, single muscle twitch, temperature changes, all or none law, fatigue etc.
4. Exercise metabolism, oxygen debt, respiratory quotient.
5. Development of endurance, factors affecting endurance and muscle strength, factors affecting general and cardiorespiratory endurance, aerobic and anaerobic work, efficiency of muscular activity, aerobic versus anaerobic (e.g. speed work load, fatigue, diet, obesity).
6. Age and exercise, age changes in muscle function, age changes in CVS, age changes in pulmonary function, and physical work capacity, age changes in NS.
7. Environment and exercise; adaption to heat and cold, exercise in heat and cold, human limitation in heat, acclimatization to heat, exercise at high altitudes.

**UNIT V PRACTICAL DEMONSTRATION**

A. Determination of RBC and WBC counts.
B. Examination of different types of WBC in stained blood smears.
C. Circulation in the web of the frog's feet.
D. Ischaemia pain.
E. Muscle contraction in frog, simple muscle curve, tetanus, wave summation, quintal summation, fatigue.
F. Lung Volumes.
G. Effects of exercise on ventilation.
H. Physical fitness.
I. Determination of BP. effects of exercise on BP.
J. Examination of sensory and motor systems, examination of superficial and deep reflexes.
K. Tests of vision (acuity and colour perception) and hearing (Rinne's test and Weber's test).

**Evaluation: Class tests and unit tests**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCE**

SRM SCHOOL OF OCCUPATIONAL THERAPY, SRMIST

1. Text book of Medical Physiology – Aurthur C. Guyton
2. Text book of Physiology for Dental Students Sembulingam

**Psychology**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16 103 | Psychology | 2 | 60 |

**COURSE DESCRIPTION**

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

**COURSE OBJECTIVES**

The objective of this course is that after 60 hours of lectures, the student will be able to recognize and help with the psychological factors involved in disability, pain, disfigurement, unconscious patients, chronic illness, death, bereavement and medical-surgical patients/conditions. They should also understand the elementary principles of behavior for applying in the therapeutic environment.

In addition, the students will be able to show their proficiency based on written and internal evaluation.

**OBJECTIVES**

1. Psychosocial assessment of patients in various developmental stages.
2. Concept of stress and its relationship to health, sickness and one's profession.
3. Ego defense mechanisms and learn counseling techniques to help those in need.
4. Reasons for non-compliance among patients and improving compliance behavior.

**UNIT I**

**A. DEFINITION OF PSYCHOLOGY**

Definition of Psychology. Basic information in relation to the following schools, methods and branches:

a) **Schools** : Structuralism, functionalist, behaviorism, psychoanalysis, gestalt psychology.
b) **Methods** : Introspection, observation, and experimental method.
c) **Branches** : Child, social, abnormal, industrial.

**B. HEREDITY AND ENVIRONMENT**

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

**C. DEVELOPMENT AND GROWTH BEHAVIOUR**

Infancy, childhood, adolescence, adulthood, middle age, old age.

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**D. INTELLIGENCE**

**Definitions**: IQ, Mental Age, list of various intelligence tests: WAIS, WISC, Bhatia's performance test. Raven's progressive Matrices.

**UNIT II**

**E. MOTIVATION**

**Definitions:** Motive, drive, incentive and reinforcement. Basic information about primary needs hunger, thirst, sleep, elimination activity, air, avoidance of pain, attitude to sex. Psychological needs-information, security, self-esteem, competence, love and hope.

**F. EMOTIONS**

Definitions, differentiate from feelings, physiological changes of emotion, role of RAS, hypothalamus, cerebral cortex, sympathetic nervous system, adrenal gland, heredity and emotion, nature and control of anger, fear and anxiety.

**G. PERSONALITY**

1. Definition - List of Components: Physical characteristics, character, abilities, temperament, interests and attitudes.
2. Discuss briefly the role of heredity, nervous system, physical characteristics, abilities, family and culture on personality development.
3. Basic concepts of Freud, unconscious, conscious, Id Ego and Superego. List and define the oral, anal and phallic stages of personality development. List and define the 8 stages of personality development as proposed by Erickson. 4 concepts of learning as proposed by Dollard and Miller, drive, cue response and reinforcement.
4. Personality assessment: interview, standardized, non-standardized. Exhaustive and stress interview, list and define inventories, BAI, CPI and MMPI. Projective tests: Rorschach, TAT and Sentence Completion Test.

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**UNIT III**

**H. LEARNING**

Definition. List the laws of learning as proposed by Throndike. Types of learning. Briefly describe classical conditioning, operant conditioning, insight, observation and trial and error type. List the effective ways to learn: Massed vs. Spaced, Whole Vs. Part, Recitation Vs. Reading, Serial Vs. Free recall, knowledge of results, Association, Organization, Pneumonic methods, Intentional learning, role of language.

**I. THINKING**

Definition: Concepts, creativity, steps in creative thinking list the traits of creative people, delusions.

**J. FRUSTRATION**

Definition: Sources, solution, conflict: approach-approach, avoidance-avoidance and approach-avoidance, solution.

**K. SENSATION, ATTENTION, 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 interests, 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, communication, specific communication techniques.

**L. DEMOCRATIC AND AUTHORITARIAN LEADERSHIP**

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, counselling and religious conversion).

**M. DEFENSE MECHANISM OF THE EGO**

Denial, rationalization, projection, reaction formation, identification, repression, emotional, insulation, undoing, introjection, acting out, depersonalization. Behaviour modification for patients.

**EXAMINATION METHOD**

**Internal marks (50)** **:** class tests, model exams and assignment

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**University Theory exam :** 100 Marks

**REFERENCE**

1. Mangal S.K. General Psychology

**Sociology**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16 104 | Sociology | 2 | 50 |

**COURSE DESCRIPTION**

This course will introduce to the student, the basic sociological concepts, principles and social processes. 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 OBJECTIVE**

The objective of the course is that after 50 hours of lectures, the students 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 Occupational Therapy.

In addition, the student will be able to show their proficiency based on written and internal evaluation.

**OBJECTIVES**

A. Understand the role of family and community in the development of behaviors.
B. Develop a holistic outlook toward the structure of society and community resources.
C. Identify the subtle influence of culture in the development of human personality, the role of beliefs and values as determinants of individual and group behaviors.
D. Understand the social and economical aspects of community that influence the health of the people.
E. Learn to assess the social problems and participate in social planning.
F. Identify social institutions and resources.
G. Understand the significance of social interactions in the process of rehabilitation.
H. Appreciate the role of therapist as a member of society and the interdependence between individuals and society.

**COURSE OUTLINE**

**UNIT I**

**A. INTRODUCTION**

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Definition of Sociology. Sociology as a science, uses of the study of Sociology, application of knowledge of sociology in Occupational Therapy.

**B. SOCIOLOGY AND HEALTH**

Social factors affecting the 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 health and the people.

**C. SOCIALIZATION**

Meaning of socialization, influence of social factors on personality, socialization in hospital and socialization in rehabilitation of patients.

**UNIT II**

**D. SOCIAL GROUPS**

Concepts of social groups influence of formal and informal groups on health and sickness, the role of primary groups and secondary groups in the hospital and rehabilitation settings.

**E. FAMILY**

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

**F. COMMUNITY**

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

**G. CULTURE**

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

**H. CASTE SYSTEM**

Features of the modern caste system and its trends.

**UNIT III**

**I. SOCIAL CHANGE**

Meaning of social changes, factors of social change, human adaptation and social change, social change and stress, social change and deviance, social change and health programs, the role of social planning in the improvement of health in rehabilitation.

**J. SOCIAL CONTROL**

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

**UNIT IV**

**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

**UNIT V**

**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 marks (50)** | **:** | class tests, model exams and assignment |
| **University Theory exam** | **:** | 100 Marks |

**REFERENCES**


1. Sachdeva. D.R.and Bhshan. V.: *"An Introduction to Sociology*", Allahabad, Kitab Mahal Limited - 1974.
2. Madan, G.R.: *"Indian Social Problems*", Vol-I, Madras. Allied Publications


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## ANALYZING OCCUPATIONS AND ACTIVITIES

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16 105 | Analyzing Occupations And Activities | 3 | 110 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 54 | 10 | 46 |

**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 110 hours of lectures and 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.

**Unit I - History and overview of Occupational therapy**
**Unit II - Objective and media in Occupational therapy**
**Unit III - Analyzing occupations and activities**
**Unit IV - Leisure**
**Unit V - Basics in technology with reference to occupational therapy**

**UNIT I -HISTORY AND OVERVIEW OF OCCUPATIONAL THERAPY**

1.1. Describe the history and development of Occupational Therapy internationally.
1.2. Describe the present development of O.T in India, including organization of All India Occupational Therapist's Association.
   a) Professional organization which includes life membership, NBCOT, ACOT
1.3. Define Occupational therapy. Discuss the scope of O.T in a major hospital and in the community.
1.4. Orientation to equipments
1.5. Professional conduct.
1.6. Need for confidentiality in treatment of patients.
1.7. Inter-staff and therapist-Patient relationships. (Therapeutic rapport with client)
1.8. General Outline of Department and Outline the ethics and etiquette relevant to O.T
1.9. Referral systems

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**UNIT II - OBJECTIVE AND MEDIA IN OCCUPATIONAL THERAPY**

2.1 Describe Occupational therapy's contribution as part of the total rehabilitation team. Briefly outline the roles of the different team members.

2.2 Briefly explain objectives and media used in O.T. Outline the meaning "Occupation" in relation to treatment objectives for all ages.

2.3 Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL)
- a) Purpose of evaluation, Content of ADL and IADL evaluation
- b) Parameters of ADL and IADL evaluation
- c) ADL and IADL evaluation methods

2.4 Define the characteristic of activities used as treatment media plan activity analysis for physical, psychological and general aspects.

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

2.6 Outline treatment objectives for physical conditions: remedial (physical and mental), ADL, prevocational, resettlement

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

2.8 Outline of Model of Human Occupation.

*2.9 Therapeutic movements and exercises in OT
- a) Principles of therapeutic exercises
- b) Types of muscle contractions
- c) (Isotonic, isometric muscle contractions) Types of therapeutics movements
- d) (Passive, Active, Active assisted and resistive movements) Briefly outline isometric, progressive resistive and regressive resistive exercises

* 2.10 Evaluation of ROM / Muscle power both U/E and L/E

**UNIT III ANALYZING OCCUPATIONS AND ACTIVITIES**

**3.1 Wood work or Carpentry**

a. Introduction to Carpentry - Students will be able to describe different types of wood, including care and storage.

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

c. Joints – Students will be able to identify and make 2 different types of joints. T joints and Half flap joint

d. Application - Students will be able to explain therapeutic values and application for O.T. They will analyze at least 2 processes and describe methods of adaptations of tools.

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**3.2. Leather work**

a. Outline – History
b. Types of hides and skins used in leather work.
c. Describe and use tools – basic tools, cutting tools, sewing tools, tools for special effects.
*d. Carryout techniques – cutting, thronging, punching, fastenings (rivets, eyelets, press buttons, buckles, zips and Velcro), decorating leather articles, use of paints, dyes and finishes.
*e. prepare finger loop, universal cuff and thumb spica of. Application: Activity analysis, therapeutic values and use to the Client

**3.3. Tailoring**

a. Tailoring machine parts
b. Types of seams and their uses
c. Types of opening and fastening
*d. To make Three types of stitches

***3.4. Design**

a. Painting (Blow, Spray, blotch, finger, oil, wax, thread, charcoal, etc.)
b. Montage
c. Paper mat
d. Macramé
e. Simple card weaving
f. Ball decoration and paper bead
g. Aluminum wire pictures
h. Embroidery
i. Lettering and posters

**UNIT IV LEISURE**

***4.1 Home Activities**

a. Plan and prepare simple meals

**4.2 Recreational Activities**

a. Outline the use of the following recreational activities as a therapeutic medium Plan the following activities for various patient groups.
    - Sports
    - Games
    - Picnic
    - Drama
    - Leisure and Hobbies
    - Music

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**UNIT V - BASICS IN TECHNOLOGY WITH REFERENCE TO OCCUPATIONAL THERAPY**

**5.1 Hand Splinting**

a. Definition
b. Uses
c. Naming and identification of two Hand splints .Explain its parts and its uses , Resting hand splint and cock up splint

**5.2 Computer Science** **Instruction Hours: 20 hrs**.

a. Key board usage
b. Hardware:
c. Knowledge of the following terminology – Microprocessor (CPU) , Memory, Monitor, Keyboard, storage device, floppy discs, hard discs, printers, Microcomputers.
d. Switching on and switching off the computer and printer.
e. Accessory management: Explorer and Outlook Express
f. Printers, Modem, CD Floppy use.
g. Simple trouble shooting
h. Simple preventive maintenance techniques (dust, mouse pad maintenance, gentle use of keys)
i. Software:

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

**Word Processing Software**: E.g. MS Word star office, Lotus. The students should be able to use any one.

**Spread sheet software**: E.g. MS Excel, Star Office, and Lotus. The students should be able to use anyone

**Browser/Mail**: Netscape Communication, Internet

**Internet:** Searching Medline and related research – Key terms, privacy issues and ethics.

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

*** Topics should be Demonstrated.**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Activity Analysis of File, Assignment, during the end of first year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |

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| | | |
|---|---|---|
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |
| **Total Marks** | **:** | **250 Marks.** |

**Recommended Book(s) for Reference:**


1. Muscle Testing and Function by F.P. Kendall, (3rd edition)
2. Measurement of Joint motion : a Guide to Goniomentry by C.C. Norkin and D.J.White (3rd edition)
3. Pedretti's Practice skills for physical dysfunction edited by Heidi McHugh Pendleton ,Winifred Schultz Krohn (4th edition), (7th edition)
4. Occupational Therapy for Physical Dysfunction by Mary Vining Radomski, Catherine A Trombly (7th edition)
5. Occupational Therapy and Physical Dysfunction , Principles ,Skills and Practice by Ann Turner, Margaret Foster, Sybil E Johnson (4th edition)
6. Willard and Spackman's Occupational Therapy (12th edition)
7. Principle of Exercise Therapy by Dena Gardiner (4th edition)
8. Therapeutic Exercises by J. Basmajian and Wolf (1st edition)


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**NON EXAM PAPER FOR I YEAR**

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## NURSING AND FIRST AID

**Instruction Hours: 40**

**COURSE DESCRIPTION**

This course enables a student to have a better understanding and development of 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, practical 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.

**UNIT I**

**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 and 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 intrusion :* Eye, ear, nose, throat, stomach and lungs.
4. *Bites :* First aid, signs, symptoms and treatment.
   a) Dog bite : rabies
   b) Snake bite : neurotoxin, bleeding diathesis

**UNIT II**

**C. SKELETAL INJURIES**

Definition: Types of fractures of various parts of the body. Causes, Signs and Symptoms. Rules of treatment, Transportation of patient with fracture and spinal cord injuries. 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.

**UNIT III**

**E. WOUNDS AND HEMORRHAGE**

1. Broad outline of Anatomy and Physiology of the circulatory system.
2. Wounds: Classification, management.
3. Hemorrhages: Classification, signs and symptoms, rules for treatment of hemorrhage.

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4. Treatment of hemorrhage from special areas (Scalp, mouth, nose, ear, palm and various veins).
5. Internal hemorrhages: 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.

**UNIT IV**

**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.

**UNIT V**

**H. COMMUNITY EMERGENCIES**

Role of first aider (immediate and late) in fires, explosions, floods, earthquakes.

**I.COMMUNITY RESOURCES**

Police Assistance, Voluntary agencies (local, National, International). Ambulance services (Functions).

**EVALUATION**

Unit tests, and assignments, are conducted to evaluate a student.

**REFERENCES**


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


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## ENGLISH

**OBJECTIVES** **INSTRUCTION HOURS: 8**

After the course the students will develop .ability to speak and write grammatically correct English. Effective skill in reading and understanding the English language. Skill in reporting

**COURSE OUTLINE**

- Review of grammar, vocabulary and effective use of dictionary
- The ability to understand selected passage and express meaning in one's own words.
- Reading and comprehension of the prescribed books.
- Verbal communication
- Oral reports
- Summarization of discussion
- Debate
- Listening comprehension
- Film, Cassette and Radio

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**BOT SECOND YEAR**
**University Exam at the end of II year**

**GENERAL MEDICINE,**
**GENERAL SURGERY and PEDIATRICS**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16201 | GENERAL MEDICINE, GENERAL SURGERY and PEDIATRICS | 6 | 150 |

**COURSE DESCRIPTION**
It covers relevant aspects of General Medicine, General Surgery, Paediatrics, Plastic Surgery.

**COURSE OBJECTIVES**
The objective of this course is that after 150 hours of lectures and demonstrations, in addition to clinics 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 etiology and pathology, the patient's symptoms and the resultant functional disability. This would help the students to understand the limitations imposed by the diseases on any therapy.

Broad outline of goals of pharmacological and surgical therapy should be imparted in those diseases in which Occupational Therapy will be an important component of overall management.

In addition, the student will be able to demonstrate proficiency by written internal evaluation.

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**GENERAL MEDICINE**

**A) General Medicine** **Total No. of Hours: 50**

**Course Outline**

**UNIT I**

**1.1. INFECTIONS**

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

Bacterial – Tetanus, Viral - Herpes simplex, zoster, varicella, measles, German measles, Hepatitis AIDS, Protozoal - Filaria

**UNIT II**

**2 HEMATOLOGY**

a. Define and briefly describe clinical aspects of iron deficiency, Vitamin $B_{12}$ and folic acid deficiency anaemia.
b. List types of bleeding diathesis.
c. Describe the clinical features of Hemophilia.

**UNIT III**

**a. RENAL DISEASES**

3.1 Define and briefly outline acute and chronic renal failure.

3.2 Urinary tract infection, pathogenesis, outline common clinical conditions complicated by UTI.

**a. METABOLIC DISEASES**

3.3 Diabetes - define and outline etiology. List types of diabetes and complications and briefly outline use of insulin, diet and oral hypoglycemic agents in management of diabetes.

3.4 Obesity - Define and outline management. Types of Obesity, various methods to measure obesity and complication of obesity.

**UNIT IV**

**4.1. GERIATRICS**

Various physiological changes encountered in elderly population. Theories of aging. List diseases commonly encountered in the elderly population and their role in causing disability; Hypertension, Ischaemia Heart disease, cerebrovascular accidents, benign prostatic hyperplasia, cataracts and other causes of failing vision.

**4.2 DERMATOLOGY CONDITIONS**

Diseases of skin - leprosy, pigmentary anomalies, vasomotor disorders, trophic ulcers, their classifications and management, dermatitis, coccal and fungal parasitic and viral infections, skin diseases related to rheumatology, tropical skin diseases, and hyperhydrosis. Psoriasis skin changes in vitamin D deficiency, alopecia, acne vulgaris.

**UNIT V**

**5.1 RESPIRATORY TRACT**

a. Bronchitis – Define, list etiological factors and describe symptoms.
b. Pneumonia – List types of pneumonia (lobar, broncho, aspiration pneumonia.)
c. List etiologic agents and briefly outline symptoms and complications of pneumonia.
d. Asthma – Define, describe briefly the etiological factors and clinical features during acute exacerbation.
e. Chronic obstructive airway diseases – Define emphysema and chronic bronchitis. Briefly describe the pathology, symptoms of diseases and clinical course.
f. Tuberculosis – Describe the etiology, pathology and clinical features of pulmonary TB.

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g. Bronchiectasis – Define and describe briefly the pathology, and clinical symptoms of bronchiectasis, bronchopulmonary segments and postural drainage.
h. Emphysema – Define and briefly describe etiological factors.
i. Chest wall deformities – Describe funnel chest, Pigeon chest, Barrel chest, Kyphoscoliosis of thoracic spine.
j. Briefly outline functional disability of occupational lung diseases, List pneumoconiosis.

**5.2 CARDIO – VASCULAR SYSTEM**

a. Cardiac failure – Define, List causes and symptoms.
b. Rheumatic fever – Define and briefly describe etiology and gross pathology of rheumatic heart disease.
c. Infective endocarditis – Define and outline etiology, symptoms and complications.
d. Ischaemic heart disease – Outline pathology of IHD, define angina pectoris and Myocardial infarction. Describe clinical features and broadly outline medical and surgical treatment.
e. Hypertension – Define and outline the clinical features, complications and goals of therapy.
f. Outline pathogenesis and clinical features of: Pulmonary embolism, Deep vein thrombosis, pulmonary infarct.
g. Congenital heart disease – List ASD, VSD, Fallot's Tetralogy and PDA and abriefly outline the pathologic anatomy

**5.3 BONE, JOINT AND CONNECTIVE TISSUE DISORDERS**

a. Brief introduction to concept of autoimmune disease
b. Define Systemic lupus erythematous, Polymyositis, Dermatomyositis, Polyarthritis, Nodosa, Scleroderma.
c. Rheumatoid arthritis - describe etiology, Clinical features and complications, drug therapy and non pharmacological therapy.
d. Osteoarthritis – Describe Etiology, Clinical features and complications and review non steroidal anti inflammatory drugs and steroids.

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**EVALUATION**
Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCE**
Principles and Practice of Medicine - Davidson

**B. PAEDIATRICS** **Total No. of Hours: 50**

**UNIT I**

1.1 Describe growth and developments of a child from birth to 12 years including physical, social adaptive development.

1.2. List the maternal and neonatal factors contributing to high risk pregnancy. The neonate : 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 to mother at any trimester.

1.3. 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.

**UNIT II**

**2.1 CEREBRAL PALSY :**

a. Define and briefly outline etiology of prenatal, perinatal and postnatal causes:briefly mention pathogenesis, types of cerebral palsy (classification) findings on examination; general examination of C.N.S. Musculoskeletal and respiratory system.

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

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

**2.2 MUSCULAR DYSTROPHY :**

a. Outline various forms modes of inheritance and clinical manifestation; physical finding in relation to disabilities progression of various forms and prognosis. Describe treatment goals in forms which are and are not fatal.

**UNIT III**

3.1 Spinabifida, meningomyelocele : Outline development; clinical features – lower limbs, bladder and bowel control; complications - UTI and hydrocephalus; medical treatment and surgical treatment.

3.2 Still's disease: Classification, pathology in brief, physical findings, course and prognosis. Outline treatment, prevention and correction of deformity.

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

**UNIT IV**

4.1 Normal diet of new born and child: List dietary calorie, 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.

4.2 Lung infections: Outline the clinical findings, complications and medical treatment of bronchiectasis, lung abscess and bronchial asthma, cystic fibrosis, primary complex in infant and children.

**UNIT V**

5.1. Acute paediatric respiratory distress syndrome intensive paediatric care.
5.2 Intensive neonatal and paediatric surgical care.
5.3 Congenital cardiovascular problems - management.
5.4 Cardio and respiratory rehabilitation in children.

**EVALUATION**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCE**

*1.* Ghai O.P., "*Essential Paediatrics"*

**GENERAL SURGERY** **Total No. of Hours: 50**

**UNIT I**

1.1 Principles of General Surgery.
1.2 Principles of Post operative management including surgical ICU.
1.3 Role of Physiotherapy in General Surgery.

**UNIT II**

2.1 Describe abdominal surgical incisions.
2.2 Outline the post operative complications and management in
   a. Nephrectomy, Appendicectomy
   b. Herniorrhaphy, Mastectomy
   c. Thyroidectomy
   d. Colostomy
   e. Hysterectomy
   f. Prostatectomy
   g. Cystectomy

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h. Hysterectomy
i. Prostatectomy
j. Cholecystectomy
k. Ileostomy

**PLASTIC SURGERY**

**UNIT III**

3.1 Classify burns by depth and surface area; outline the causes, medical management and precautions in the acute stage.

**UNIT IV**

4.1 List the potential deformities due to burns, methods of prevention and precautions. Mention cosmetic and functional treatment measures.

**UNIT V**

5.1 Outline the plastic surgery procedures and management in rehabilitation of burns, including splinting methods for common deformities and prevention of burns contractures.

5.2 Reconstructive surgery for correction of deformities of upper and lower limbs.

**EVALUATION**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCES**

1. A Concise Text book of Surgery – Das,
2. A Practical Guide to operative surgery - Das

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## PATHOLOGY AND MICROBIOLOGY

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16202 | PATHOLOGY MICROBIOLOGY, | 4 | 50 |

**COURSE DESCRIPTION**

This course follows the basic courses in anatomy and physiology. Students will learn the pathological changes in various conditions, diseases and disorders, which are commonly treated by Occupational Therapy.

**COURSE OBJECTIVES**

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

In addition the students will be able to show their proficiency based on written internal evaluation.

### MICROBIOLOGY

**Total No. of Hours: 20 Hrs**

**UNIT I**

a. Introduction and history of microbiology
b. General lectures on micro-organisms
    1. Classification
    2. Shape and arrangement
    3. Special characteristics-spores, capsules, enzymes, motility, reproduction.

**UNIT II**

a. Disinfection and antiseptics.
b. Sterilization and asepsis.
c. Antibacterial agents-fundamental aspect, susceptibility tests.

**UNIT III**

a. Infection - sources of infection.-Portals of entry-Spread of infection
b. Non-specific immunity.
c. Immunity - natural and acquired.
d. Allergy and hypersensitivity.

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**PATHOLOGY** **Total No. of Hours: 30 Hrs**

**COURSE OUTLINE**

**UNIT I**

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

**UNIT II**

a. Haemorrhage, shock, embolism, thrombosis
b. Tuberculosis, leprosy, typhoid.
c. Deficiency diseases

**UNIT III**

a. Tumours: Aetiology and spread, common tumours
b. Blood: Anemia, common congenital anomalies, rheumatic and coronary heart diseases.
c. Respiratory system: Pneumonias, bronchiectasis, emphysema, chronic bronchitis, asthma.

**UNIT IV**

a. Bone and Joints: Autoimmune disease, septic arthritis, osteomyelitis.
b. Skin: Leprosy.
c. Urinary system

**UNIT V**

a. Central Nervous System: CNS infections, vascular disorders.
b. Rheumatoid arthritis.
c. Scleroderma and psoriasis.
d. Diseases of muscle including poliomyelitis, myopathies.
e. Volkmann's Ischaemia.

**UNIT IV**

Outline of common pathogenic bacteria and diseases produced by them. Treatment and prevention.

1. Respiratory tract infections.
2. Meningitis.
3. Enteric infections.
4. Anaerobic infections.
5. Urinary tract infections.
6. Leprosy, tuberculosis and miscellaneous infections.
7. Wound infections.

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8. Sexually transmitted diseases.
9. Hospital acquired infection

**UNIT V**

K. Pathogenic yeasts and fungi
L. Virology - virus infections with special mention of Hepatitis, Poliomyelitis and Rabies.

**EVALUATION**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCES**

**Text book of Microbiology**

1. Paniker C.K.J. "*Text book of Microbiology"*
2. Logeswari Selvaraj *"Text book of Microbiology"*

**Text book of Pathology**

1. Harsh Mohan *"Text book of Pathology*" (5th Edition) –
2. Datta. "*Text book of Pathology*" (2nd Edition)

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**BIOMECHANICS AND APPLIED ANATOMY**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16203 | Bio Mechanics and Applied Anatomy | 3 | 110 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 70 | 10 | 30 |

**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 musculo-skeletal function and dysfunction.

**Course Description:**

The objectives of this course is that after 110 hours of lectures, demonstrations and practical the student will be able to demonstrate an understanding of the principles of Biomechanics and Kinesiology and their application in health and disease.

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

**Unit I - Kinetics and kinematics of movement**
**Unit II - Muscle Structure and Function and Vertebral Column**
**Unit III - The biomechanics of upper limb**
**Unit IV - The biomechanics of Lower limb**
**Unit V - Posture and Gait**

**UNIT I. Kinetics and kinematics of movement**

a. Describe types of motion, planes of motion, direction of motion and quantity Of motion.
b. Define forces, force vectors, components of forces.
c. Describe gravity, segmental centers of gravity, and center of gravity of the human body, stability and center of gravity, relocation of the center of gravity.
d. Describe Reaction forces, Newton's Law of Reaction.
e. Describe equilibrium – Law of inertia and establishing equilibrium of an object.
f. Describe objects in motion; Law of Acceleration, Joint distraction in a linear force system and Force of friction.
g. Describe concurrent Force Systems: Composition of forces, Muscle Action Lines, Total muscle force vector, Divergent muscle pulls, Anatomic pulleys.
h. Describe parallel Force Systems: - First class levers second class levers – Third class levers – Torque – Mechanical Advantage.
i. Define moment Arm: Moment Arm of a muscle force. Moment arm of gravity and Anatomic pulleys.

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j. Describe equilibrium of a lever.

**1.1 Describe The Following:**

a. Three types of motion.
b. The plane in which a given joint motion occurs, and the axis around which the motion occurs.
c. The location of the centre of gravity of a solid object, the location of the centre of gravity of a segmental object, the location of the centre of the gravity of the human body.
d. The action line of a single muscle.
e. The name, point of application, direction, and magnitude of any interface, given its reaction force.
f. A liner force system, a concurrent force system, a parallel force system. The relationship between torque, moment arm and rotatory force component. Two methods of determining torque for the same given set of forces. How anatomic pulleys may change action line, moment arm, and torque of muscles passing through them. In general terms, the point in the joint range of motion at which muscle acting over that joint is biomechanically most efficient. How external forces can be manipulated to maximize torque. Friction, its relationship to contacting surfaces and to the applied forces.

**1.2 Determine The Following:**

a. The identity (name) of diagrammed forces on an object. The new center of gravity of an object when segments are rearranged, given the original centers of gravity.
b. The resultant vector in a linear force system, a concurrent force system, and a parallel force system. If a given object is in linear and rotational equilibrium. The magnitude and direction on of acceleration of an object not in equilibrium. Which forces are joint distraction forces and which are joint compression forces. What are the equilibrium force for each? The magnitude and direction of friction in a given problem. The class of term in a given problem.

**1.3 Compare The Following**

1. Mechanical advantage in a second and third class lever. Work done by muscles in a second and third class lever. Stability of an object in two given situations in which location of the centre of gravity and the base of support of the object.

**1.4 Draw the following:**

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

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**1.5 Joint Structure And Function**

a. Describe the basic principles of joint design and a human joint.
b. Describe the tissues present in human joints; including dense fibrous tissue, bone, cartilage and connective tissue.
c. Classify Joints – synarthrosis, Amphiarthrosis, Diarthrosis, sub classification of synovial joints.
d. Describe joint function, kinematic chains, range of motion.
Describe the general effects of injury and disease.

**1.6 Recall The Following:**

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

**1.7 Identify The Following:**

a. The axis of motion for any given motion at a specific joint (knee, hip, metacarpophalangeal).
b. The plane of motion for any given motion at a specific joint (shoulder, interphalangeal, wrist).
c. The degrees of freedom at any given joint.
d. The distinguishing features of a diarthrodial joint.
e. The structures that contribute to joint stability.

**1.8 Compare The Following**

a. A synarthrosis with an amphiarthrosis on the basis of methods, materials and function.
b. A synarthrosis with a diarthrosis on the basis of methods, materials and function.
c. Closed kinematic chain with an open kinematic chain.
d. Dense fibrous tissue with bone.
e. Hyaline cartilage with fibro cartilage.

**UNIT II MUSCLE STRUCTURE AND FUNCTION AND VERTEBRAL COLUMN**

**2.1 Introduction**

a. Describe Mobility and stability functions of muscles.
b. Describe elements of muscle structure – Compositions of a muscle fibre, the motor unit, types of muscle fibers, muscle fiber size, arrangement and number, Muscle tension, length – tension relationship.

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c. Describe types of muscle contraction, Speed and Angular Velocity, Applied load Voluntary control, Torque and Isokinetic exercise.
d. Summaries factors affecting muscle tension.
e. Classify muscles – spurt and shunt muscles, Tonic and phasic muscles.
f. Factors affecting muscle function: Type of joint and location of muscle attachment, number of joints, passive insufficiency, and Sensory receptors.

**2.2 Describe The Following:**

Ordering of the myofibrils in a sarcomere.
a. An alpha motor neuron.
b. The connective tissue in a muscle.
c. How tension develops in a muscle.
d. Isokinetic exercise.

**2.3 Define The Following:**

a. Active and passive insufficiency.
b. Active and passive tension.
c. Concentric, eccentric and isometric contractions.
d. Reverse action.
e. Agonists, antagonists and synergists.

**2.4 Recall The Following:**

a. Factors affecting muscle tension.
b. Characteristic of different fiber types
c. Characteristic of motor units
d. Factors affecting angular velocity.

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**2.5 Differentiate The Following:**

a. A spurt from a shunt muscle.
b. A phase from a tonic muscle.
c. Agonist from an antagonist.
d. Active from passive insufficiency.
e. Concentric from eccentric contractions.

**2.6 Compare The Following:**

a. Tension development in eccentric versus concentric contractions.
b. The angular velocity of isometric values concentric and is kinetic contractions.
c. Isokinetic exercise with concentric exercise

**2.7 The Vertebral Column:**

a. Describe the general structure and function of the vertebral column including: Primary and secondary course. Articulations, Ligaments and muscles, typical vertebra, inter-vertebral disc.
b. Describe factors affecting stability and motility.
c. Regional structure and function of cervical, dorsal, lumbar and sacral vertebrae.
d. Describe the muscles of the vertebral column – Flexors, Extensors, Rotators and Lateral flexors.
e. Describe the effects of injury and developmental deficits.

**2.8 Describe the following:**

a. The curves of the vertebral column using appropriate terminology.
b. The articulations of the vertebral column.
c. The major ligaments of the vertebral column.
d. The structural components of typical and atypical vertebrae.
e. The intervertebral disc.
f. Regional characteristics of vertebral structure.
g. Motions of the vertebral column.
h. Lumbar – pelvic rhythm.
i. Rotation of the vertebrae in each region.
j. Movements of the ribs during rotation.

**2.9 Identify The Following:**

a. Structure that provide stability for the column.
b. Muscles of the vertebral column and the specific functions of each.
c. Ligaments that limit specific motions (i.e. flexion extension, lateral flexion, rotation).
d. Forces acting on the vertebral column during specific motions.

**2.10 Explain The following:**

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

**2.11 Analyses The Following:**

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

**UNIT .III THE BIOMECHANICS OF UPPER LIMB**

**3.1 The Shoulder Complex:**

a. 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
b. Describe the function of the should complex including dynamic stability of the glenohumeral joint, musculohumeral Rhythm, Scapulothoracic and glenohumeral contributions.
c. Describe the muscles of elevation (Deltroid, Supraspinatus, Infraspinatus, Teres minor, Subscapularis, Upper Trapazius, lower Trapazius, Serratus anterior, Middle Trapazius and Rhomboides).
d. Describe the muscles of depression (Latissimus dorsi Pectoralis, Teres Major, Rhomboid's).

**3.2 Describe The Following:**

a. The articular surfaces of the joints of the complex.
b. The function of the ligaments of each joint.
c. Accessory joint structures and the function of each.
d. Motions and ranges available at each joint ad movement of articular surfaces within the joint.
e. The normal mechanism of dynamic stability of the glen humeral joint, utilizing principles of biomechanics.
f. The normal mechanism of glen humeral stability in the dependent arm.
g. Scapulohumeral rhythm, including contributions of each joints.
h. The extent of dependent or independent function of each joint in scapulohumeral rhythm.
i. How restriction in the range of elevation of the arm may occur.
j. One muscular force couple at a given joint and its function.
k. The effect a given muscular deficit may have on shoulder complex function.

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**3.3 Compare The Following:**

a. The advantages and disadvantages of coracoacromial arch.
b. The structural stability of the three joints, including the tendency toward degenerative changes and derangement.
c. Draw the action lines of muscles of the shoulder complex and the moment arm for each, and resolve each into components.

**3.4 The Elbow Complex:**

a. Describe the structure of the Humeroulnar and Humeroradial joints including articulating surfaces, joint capsule, Ligaments and Muscles.
b. Describe the function of the Humeroulnar and Humeroradial joints including the Axis of motion, Range of motion, Muscle action.
c. Describe the structure of the superior and inferior radioulnar joints.
d. Describe the function of the superior and inferior Radioulnar joints.
e. Describe the mobility and stability of the Elbow complex and its relationship to Hand and Wrist.
f. Describe the effects of injury and the resistance to longitudinal compression forces, to distraction forces and to Medial-lateral forces.

**3.5 Describe The Following:**

a. All of the articulating surfaces associated with each of the following joints- humero-ulnar, humeroradial superior and inferior radioulnar.
b. The ligaments associated with all the joints of the elbow complex.

**3.6 Identify The Following:**

a. Axes of motion for supination and apronarion and flexion and extension.
b. The degrees of freedom associated with each of the joints of the elbow complex.
c. Factors limiting the range of motion inflexion and extension.
d. Factors that create the carrying angle.
e. Factors limiting motion in supination and pronation.

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**3.7 Compare The Following:**

a. The translatory and rotatory component of the brachio-radial is and brachial is at all points in the range of motion.
b. The moment arms of the flexors at any point in the range of motion.
c. Muscle activity of the extensors in a closed kinematic chain with activity in an open kinematic chain.
d. The role of pronator terse with the role of pronator guadratus.
e. The role of biceps with that of brachial is.
f. The resistances of elbow joint to longitudinal tensile forces with its resistance to compressive forces.
g. The features of a classic tennis elbow with the features of cubical tunnel syndrome.
h. The role of and structure of the annular ligament with the role and structure of the articular disc.

**3.8 The Wrist And Hand Complex:**

a. Describe the wrist complex including Radio carpal joint Midcarpal joint and the Ligaments of the wrist complex.
b. Describe the function of the radio carpal and midcarpal joints including the movements and muscles involved.
c. Describe the Hand complex including: Structure on fingers (Carpometcarpal, Metacarpophalangeal and interphalangeal joints of fingers, ligaments Range of motion).
d. Describe the finger musculature including Extrinsic and MCP, PIP and DIP joint function, and intrinsic finger muscles.
e. Describe the structure of the Carp metacarpal, MCP and IP joints of thumb.
f. Describe the Thumb Musculature including the Extrinsic and Intrinsic thumb muscles.
g. Describe Pretension, Power, Cylindrical, Spherical and Hook grips.
h. Describe Precision handling, Pad to pad, Tip to tip and Pad to side pretension and Functional position of wrist and hand.

**3.9 Describe The Following:**

a. The particular surfaces of the joints of the wrist and hand complexes.
b. The ligaments of the joints to the wrist and hand, including the significance of each.Accessory joint structures found in the wrist and hand complex, including the function of each.
c. Types of movements and types of motion of the radio carpal joint, the midcarpal joint, and the total wrist complex.
d. 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 lunar deviation from neutral.

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e. The role of the wrist musculature in producing wrist motion.
f. Motions and ranges available to joints of the hand complex.
g. The gliding mechanisms of the extrinsic finger flexors.
h. The structure of the extensor mechanism, including the muscles and ligaments that compose it.
i. How M.C.P. extension occurs, including the muscles that produce and control it.
j. How flexion and extension of the PIP joint occur, including the muscular and ligamentous forces that produce and control these motions.
k. How flexion and extension of DIP joints occur, including the muscular and ligamentous forces that produce and control these motions.
l. The role of the wrist in optimizing length – tension in the extrinsic hand muscles.
m. The activity of reposition, including the muscles that perform it.
n. The functional position of the wrist and hand.

**3.10 Differentiate Between**

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

**3.11 Compare:**

a. 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.
b. The characteristics of power grip with those of precision handling.
c. The most easily disrupted form of precision handling that may be used someone without any active hand musculature; what are the pre-requisites: for each?

**UNIT IV – BIOMECHANICS OF LOWER LIMB**

**4.1 The Hip Complex**

a. Describe the general features of the hip joint including the articulating surfaces on the pelvis and the femur; Angulations; Angle of indication, Angle of Torsion; Internal architecture of femur and pelvis; joint capsule. Ligaments and Muscles (Flexors, Extensors – one joint extensors, two joint extensors, Adductors, Medial Rotators and Lateral Rotators).
b. Describe the function of hip – Rotation between pelvis, lumber spine and hip; Pelvic motion – Anterior posterior pelvic tilting, Lumbar pelvic rhythm, Lateral pelvic tilting, Pelvic rotation.
c. Summarise the pelvic motions in the static erect posture.
d. Describe Femoral motion.

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e. Describe Hip stability in Erect Bilateral stance, sagital plane equilibrium and Unilateral stance.
f. Describe reduction of Forces with weight shifting and using a cane and deviations from normal in muscular weakness and Bony abnormalities.

**4.2 Describe The Followings**

a. The articulating surfaces of the pelvis and femur.
b. The structure and function of the trabecular systems of the pelvis and femur,
c. The structure and function of the ligaments of the hip joint.
d. The angle of inclination and the angle of torsion.
e. 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 of the pelvis.
f. The muscle activity that produces tilting and rotation of the pelvis.
g. Motions of the femur on the pelvis including planes and axes of motion.
h. The structure and function of all the muscles associated with the hip joints.
i. The forces that act on the head of femur.
j. The position of greatest stability at the hip.

**4.3 Explain The Following:**

a. How sagittal and frontal plane equilibrium are maintained in erect bilateral stance.
b. How frontal plane equilibrium is achieved in unilateral stance.
c. How force acting on the femoral had may be reduced.
d. How the function of the two joint muscle at the hip are affected by change in the position of the knee and hip.
e. The functional and structural relationship among the hip knee, pelvis and lumbar spine.

**4.4 Compare The Following:**

a. Forces acting on the femoral head in erect bilateral stance with the forces acting on the head in erect unilateral stance.
b. Coxa valga with coax vara on the basis of hip stability and mobility.
c. 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.
d. Anterversion with retroversion on the basis of hip stability and mobility.
e. The structure and function of the following muscles; Flexors ad extensors, abductors and adductors, lateral and medial rotators.

**4.5 The Knee Complex:**

a. Describe the structure of the Tibiofemoral joint Articulating surfaces on femur and tibia, the menisci, Joint capsule and bursae, Ligaments and other supporting structures, Anterior – posterior and Medial – Lateral stability; Muscle

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structure; Knee flexors and extensors: Axes of knee complex: Mechanical axis, Anatomic axis and axis of motion.

b. 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.
c. Describe the structure of the patellotemoral joint.
d. Describe the function of the patellofemoral joint.
e. Describe the effects of injury and disease in the Tibiofemoral and patellofemoral joints.

**4.6 Describe The Following:**

a. The articulating surfaces of tibiofemoral and patellofemoral joints.
b. The joint capsule.
c. The anatomic and mechanical axes of knee.
d. Motion of the femoral condyles during flexion and extension in a closed kinematic chain.
e. Motion of the tibio in flexion and extension in an open kinematic chain.

**4.7 Draw:**

a. The Q angle when given an illustration of the lower extremity.
b. Moment arm of quadriceps at the following degree of knee flexion: 90 deg., 130deg., 30 deg., 10 deg.
c. The action lines of vastus lateralis and the vastus medialis oblique.

**4.8 Locate:**

a. The origins and insertions of all the muscles at the knee.
b. The bursae surrounding the knee.
c. The attachments of the ligaments of the medial and lateral compartments.

**4.9 Identify:**

a. Structures that contribute to the medial stability of the knee including dynamic and static stabilisers.
b. Structures that contribute to the lateral stability of the knee including dynamic and static stabilisers.
c. Structures that contribute to the posterior stability of the knee including dynamic and static stabilisers.
d. Structures that contribute to the anterior stability of the knee including dynamic and static stabilisers.
e. Structures that contribute to the rotatory stability of the knee.
f. The normal forces that are acting of the knee.

**4.10 Compare:**

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

**4.11 Explain:**

a. The function of the menisci.
b. How a tear of the medial collateral ligament may affect joint function.
c. The functions of the suprapatellar, gastrocnemius, infrapatellar and prepatellor bursae.
d. Why the semiflexed position of the knee is the least painful position.
e. Why the knee may be more susceptible to injury than the hip joint.

**4.12 Type Ankle – Foot Complex:**

DESCRIBE the structure, ligaments, axis and function of the following: ankle joint, tibiofibular joints, subtalar joint, Talocalcaneonavicular joints, Transverse Tarsal joint, Tarsometatarsal joint, Plantarexion – extension and adduction and abduction.

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**4.13 Describe:**

a. The compound articulations of the ankle, subtalar, talocalcaneonavicular, transverse tarsal and tarsometatarsal joints.
b. The role of the tibiofibular joints and supporting ligaments.
c. The degrees of freedom and range of motion available at the joint of the ankle and the foot.
d. The significant ligaments that support the ankle, subtalar and transverse tarsal joints.
e. The triplanar nature of ankle joint motion.
f. The articular movements that occur in the weight-bearing subtalar joint during inversion-eversion.
g. The relationship between tibial rotation and subtalar / talocal caneonavicular inversion-eversion.
h. The relationship between hind foot inversion-eversion and mobility-stability of the transverse tarsal joint.
i. The function of the tarsometatarsal joints, including when motion at these joints is called upon.
j. Supination – pronation of the forefoot at the tarsometatarsol joints.
k. Distribution of weight within the foot.
l. The structure and function of the plantar arches including the primary supporting structure.
m. When muscle supplement arch support, including those muscles that specifically contribute.
n. The effects of tow extension on the plantar aches.
o. The general function of the intrinsic muscle of foot.

**UNIT V POSTURE AND GAIT**

**5.1 Introduction**

a. Describe the effects of gravity and indicate the location of the gravity line in the sagitatal plane in optimal posture.
b. Analyze posture with respect to the optimal alignment of joints in the anterior-posterior and lateral views.
c. The position of hip, knee and ankle joints in optimal erect posture.
d. The position of body's gravity line in optimal erect posture, using appropriate points of reference.
e. The effects of gravitational moments on body segments in optimal erect posture.
f. The gravitational moments acting around the vertebral column, pelvis, hip, knee and ankle in optimal erect posture
g. Muscles and ligamentous structures that counter balance gravitational moments in optimal erect posture.

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h. The following postural deviations: pesplanus, halluxvalqus, pes cavus, idiopathic scoliosis, kyphosis and lordosis.
i. The effects of the above postural deviations on body structures i.e., ligaments, joints and muscles.

**5.2 Determine:**

a. How changes in the location of the body's gravity line will affect gravitational moments acting around specified joints axes.
b. How changes in the alignment of body segments will affect either the magnitude or the deviation of the gravitational moments.
c. How changes in alignment will affect supporting structures such as ligaments, joint capsules, muscles, and joints surfaces.

**5.3 Gait:**

Define:

a. The stance, swing and double support phases of gait.
b. The subdivisions of the stance and swing phases of gait.
c. The time and distance parameters of gait.

**5.4 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.

**5.5 Explain:**

a. 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.
b. The role of each of the determinants of gait.
c. The muscle activity that occurs in the upper extremity and trunk.

**5.6 Compare:**

a. Motion of upper extremities and trunk with motion of pelvis and lower extremities.
b. The traditional gait terminology with the new terminology.
c. Normal gait with a gait in which there is a weakness of the hip extensors and abductors.
d. Normal gait with a gait in which there is unequal leg lengths.

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**EXAMINATION METHOD :** Internal marks will include the summation of theory, and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal marks | : | 50 Marks |
| University Theory : | : | 100 Marks |
| Orals | : | 50 Marks |

**BOOKS RECOMMENDED**

1. Joint Structure and Function by Cynthia Norkins (4th and 5th Edition)

**Evaluation: Class Test and Unit Tests and assignment**

| | | |
|---|---|---|
| **INSTRUCTION HOURS** | **:** | **110Hrs.** |
| **EXAMINATION METHOD** | **:** | 50 Marks for Internal<br>100 Marks for University Theory<br>50 Marks for Orals |

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## HEALTH PSYCHOLOGY, CLINICAL PSYCHOLOGY AND CLINICAL PSYCHIATRY

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16204 | Health psychology, clinical psychology And clinical psychiatry | 3 | 150 |

**HEALTH PSYCHOLOGY** **Instruction Hours: 50 Hrs.**

**UNIT I**

1.1 Psychological reactions of a patient.

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

1.2 Reaction to loss.

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

1.3 Stress.

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

**UNIT II**

2.1 Communications.

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

2.2 Counseling.

Definitions, aim, differentiate from guidance, principles in counseling and personality qualities of counsellors.

2.3 Compliance.

Nature, factors contributing to non-compliance, improving compliance

**UNIT III**

3.1. Emotional needs.

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

**UNIT IV**

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4.1. Behavior modification.
Application of various conditioning and learning principles to modify patient behavior

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

**UNIT V**

5.1. Personality styles.
Different personality styles of patients.

## CLINICAL PSYCHOLOGY

**Instruction Hours: 50 hrs.**

**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 50 hours, of lectures, demonstrations and clinics the students will be able to demonstrate ability to apply their knowledge of psychology in clinical situations for assessing, understanding and treating their patients. They will learn to understand themselves, their feelings, attitudes and behavior.

a. To evaluate attention, concentration, sensation and perception and mention related abnormalities.
b. To understand and explain behavioral aspects of learning maturation and appropriately use behavioral aspects, behavioral techniques in therapy.
c. To evaluate memory, thinking and intelligence and mention related disorders.
d. To evaluate motivation emotion and personality and assess their pathological manifestations. With the concepts of conscious and unconscious mind to explain frustration and conflicts and to study the role of mental mechanisms in normal and abnormal conditions.

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**COURSE OUTLINE**

**UNIT I**

1.1 Definition of clinical psychology general and historical introduction psychology in relation to medicine.
1.2 Different schools. Methods of clinical psychology.
1.3 Case history method, interview techniques, clinical observation, situational tests questionnaires.

**UNIT II**

2.1 Concepts of normality and abnormality causes of abnormality.
2.2 Criteria for abnormality board classification of current model of abnormal behaviors medical model, psychodynamic model.
2.3 Behaviorist model and humanistic model etc.

**UNIT III**

3.1 Functional units of mind, ego and super ego – Their functions and interactions role of mental mechanisms in normal and abnormal behaviors.
3.2 Disorders of attention and concentration: Sensation and perception, memory, thinking emotion etc.
3.3 Measurement possible demonstrations and practical work to be organized.

**UNIT IV**

4.1 Intelligence and mental sub normality intelligence test – demonstrations.
4.2 Measurement of intelligence – children and adults.
4.3 Factors contributing to mental retardation.

**UNIT V**

5.1 Personality disorders.
5.2 Learning and maturation with specific reference to behavioral aspects. Behavior techniques in therapy.
5.3 Counseling, psychotherapy and psychodrama.
5.4 Brief psychotherapy psychodrama.

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**CLINICAL PSYCHIATRY** **Instruction Hours: 50 hrs**

**COURSE DESCRIPTION**

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

This will be done through 30 hours of lectures and 20 hours of experience in case studies and discussion.

**COURSE OBJECTIVES**

The objective of this course is that after 50 hours of lectures, demonstrations and clinics the student will be able to demonstrate understanding of mental illness, methods of assessment used in therapy.

**COURSE OUTLINE:**

**UNIT I INTRODUCTION**

1.1. Brief history of psychiatry, with special reference to India and to ancient Indian medicine and its relationship with psychiatry. History taking in psychiatry including mental examination and assessment.

1.2. Hereditary factors, Birth injury, Systemic diseases/accidents, Emotional factors, Embryonic developmental factors, Endocrine disease, Cerebral diseases, Stresses related to cultural factors.

1.3. Preventive measures:
In relation to consanguineous marriages, adequate antenatal care, obstetric care, mother and child services, psychological services (e.g. child guidance, counseling service).

**UNIT II SYMPTOMS OF MENTAL ILLNESS**

1. Disturbances of consciousness
2. Disturbances of memory
3. Disturbances of Volition
4. Disturbances of speech
5. Disturbances of reasoning and judgment
6. Disturbances of motor behavior,
7. Disturbances of affect,

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**UNIT III METHODS OF TREATMENT**

3.1 Individual and group psychotherapy
3.2 Physical methods
3.3 Chemotherapy,
3.4 E.C.T, Insulin therapy, Psychosurgery
3.5 Social and rehabilitation
3.6 Family interaction
3.7 environmental manipulation,
3.8 O.T: Art, creative activity, social, music and recreation therapy – outline only.

**UNIT IV**

4.1. Criteria for classification and definition of psychiatric illness.
4.2. Description of the various clinical syndromes including etiology, clinical features, course, treatment and prognosis. To include;
4.3. Psychoneuroses.
Functional Psychosis – schizophrenia, affective illness Organic status – general features of: Toxemia, epilepsy; anoxia; metabolic disorders; cerebral vascular disorders; infections, tumors; degenerative conditions; dementias; head injury; drug induced psychosis; endocrine and menopausal syndromes (acute delirious states and chronic organic psychotic states.)

**UNIT V**

5.1. Substance abuse
5.2. Personality disorders
5.2. Sexual dysfunctions and disturbances in sexual orientation
5.3. Mental deficiency including treatment of accompanying physical symptoms.
5.4. Psychiatric disorders of childhood
5.6 Legal aspects related to psychiatric patients
5.7 Civil responsibility
5.8. Clinical teaching case studies and discussion

**Evaluation: Class Test and Unit Tests and assignment**

**INSTRUCTION HOURS** **:**150 Hrs.(Health psychology 50 hrs, Clinical psychology 50 hrs, Clinical psychiatry 50 Hrs)

**EXAMINATION METHOD** **:**50 Marks for Internal, 100 Marks for University Theory.

: Separate answer book for part A (Health Psychology and Clinical Psychology)
: Separate answer book for part B (Clinical psychiatry)

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**Fundamentals for Occupational Therapy Practice**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16205 | Fundamentals for Occupational Therapy Practice | 3 | 115 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 70 | 10 | 35 |

**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 115 hours of lectures, demonstrations and practicals, the students will gain knowledge and skill in the Models,Approaches, Frames of reference and Assessments used in OccupationalTherapy .The students will also gain knowledge and practical skills in Assessing patients with Physical, Psychiatric and Pediatric conditions.

**Unit I - Occupational therapy foundations for practice**
**Unit II - Occupations in various context**
**Unit III - Model, Frame of Reference and Approaches**
**Unit IV - Assessments in Occupational Therapy**
**Unit V - Approaches used in Occupational Therapy**

**UNIT I. Occupational therapy foundations for practice**

a. History and evolution of occupational therapy practice frame work
b. Domains of occupational therapy practice frame work
c. Process of occupational therapy
d. Occupation based interaction

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**UNIT II. Occupations in various context**

**Assessing occupation in various context**

a. Culture / race and Ethnictiy
b. Social / Political / Economic factores
c. Personal values beliefs, and spirituality
d. family perspectives

**UNIT III. Model, Frame of Reference and Approaches**

a. An overview of Model, Frame of Reference and Approaches
b. Canadian Model of Occupational Performance
c. Ecological Model in Occupational Therapy

**UNIT IV. Assessments in Occupational Therapy**

***4.1 Paediatrics**

a) History taking
b) Gross motor
c) Fine motor
d) Cognition
e) Perception including Visuo-motor skills
f) Oromotor evaluation
g) Play
h) voluntary control
i) Muscle Tone

***4.2 Orthopaedics and Neurology**

a. History taking
b. Functional Ability
c. Hand functions
d. Cognition and Perception
e. Basic ADL and IADL
f. Cranial Nerves
g. Cerebellar functions
h. Reflexes (superficial and deep tendon reflexes),
i. Muscle tone
j. Range of Motion
k. Muscles strength
l. Voluntary control
m. Co-ordination
n. Sensation (cutaneous and cortical)
o. Gait
p. Balance

***4.3 Psychiatric:**

a. History

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b. Sensory Perceptual
c. Task skills
d. Intra and Inter personal skills
e. Social and group skills
f. Group level
g. Roles and Routines
h. Habit

**UNIT V. Approaches used in Occupational Therapy**

a) Biomechanical approach
*b) Roods approach (Adults and Paediatrics)
*c) Brunnstrom approach
d) Behavioural frame of reference
e) Peto's Conductive Education
f) Psychoanalytical- Include expressive media used in OT
h) Occupational Behaviour and Model of Human Occupation.
i) Development groups and developmental approach

*** Topics to be demonstrated.**

**EVALUATION**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |

**Theory will be from units I, II, III andV**
**practicals will be from unit IV**

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**Recommended book(s) for Reference:**

1. Pedretti's Practice skills for physical dysfunction edited by Heidi McHugh Pendleton , Winifred Schultz Krohn (7th edition)
2. Occupational Therapy for Physical Dysfunction by Mary Vining Radomski, Catherine A Trombly (7th edition)
3. Occupational Therapy and Physical Dysfunction, Principles, Skills and Practice by Ann Turner, Margaret Foster, Sybil E Johnson (4th edition)
4. Introduction to Occupational Therapy by Hussey Subonis, Chafea O Brien (4th edition)
5. Occupational Therapy and Mental Health edited by Jennifer Creek, Lesley Lougher (5th edition)
6. Mental Health Concepts and Techniques for the Occupational Therapy Assistant by Mary Beth Early (4th edition)
7. Frames of Reference in Psychosocial Occupational Therapy by Mary Ann Bruce, Barbara Borg (publishers SLACK, 1987)
8. Willard and Spackman's Occupational Therapy (12th edition)
9. Occupational Therapy for children by Jane Case Smith (5th edition)
10. Frames of Reference for Pediatric Occupational Therapy by Paula Kramer, Jim Hinojosa (2nd edition)

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**NON EXAM PAPER FOR II YEAR**

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## BIOCHEMISTRY

**Total No. of Hours: 50**

**UNIT I**

1. Cell - Biochemical morphology of cell.
2. Carbohydrate Chemistry - Definition, general classification structure, properties and functions.
3. Lipid Chemistry - Definition, general classification, structure properties and functions.
4. Protein Chemistry - Definition, general classification, structure, properties and functions (Proteins and amino acids).

**UNIT II**

5. Nucleic acid - definition classification, structure of DNA, Types of RNA and their functions.
6. Enzymes - Definition, classification, properties, factors affecting enzyme action various types of inhibition of enzyme action, clinical importance.
7. Vitamins - Classification, sources, chemistry, functions, deficiency manifestations and requirement.

**UNIT III**

8. Bio-energetics - Biological oxidation - Oxidative phosphorylation (Electric transport chain).
9. Carbohydrate metabolism - Digestion and absorption, glycolysis, TCA cycle, gluconeogenesis, glycogenolysis, glycogenesis, HMP shunt and its importance, hormonal regulation of blood sugar, level, diabetes mellitus, GTT and its importance, inborn errors of carbohydrate metabolism.
10. Lipid metabolism - Digestion and absorption, metabolism of TGL, metabolism of fatty acids ketogenesis, ketolysis, outlines of metabolism of cholesterol.
11. Protein metabolism - Digestion and absorption, urea cycle, outline the metabolism of aminoacids.
12. Mineral metabolism – Ca, P, Mg, Fe and function of trace elements.

**UNIT IV**

13. Hormones - Definition, mechanizing action.
14. Water electrolyte balance and acid base balance.
15. Functional tests - liver and renal function tests.

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**UNIT V**

16. Detoxification.
17. Physical - Chemical phenomenon, definition and biochemical importance of osmosis, viscosity, surface tension, absorption.
18. Common procedures used in the biochemistry - chromatography, blood-gas analysis, flame photometer, electrophoresis.

**EVALUATION**

Unit tests, term examinations and assignments are conducted to evaluate a student.

**REFERENCES**

Text Book of Medical Biochemistry - Chatterejea Shinde

**PHARMACOLOGY** **Total No. of Hours: 50**

**COURSE OBJECTIVES**

Introduce the students to basic pharmacology of various common medication used and its effects on patients in physical therapy.

**COURSE OUTLINE**

**UNIT I**

1. Terminology
2. Classification of drugs
3. Factors influencing the dosage of drugs and its actions.
4. Drug allergy
5. Principles of drug administration and routes.

**UNIT II**

Definition, action indications and contra-indications, adverse reactions of the following

1. Anti-inflammatory
2. Anti-epileptic. Sedatives, Hypnotic, Tranquilizersuscle relaxants

**UNIT III**

1 Alcohol
2 Pulmonary effects of general anaesthetic agents
3 Mucolytic agents
4 Local anaesthetic agents
5 Narcotics

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**UNIT IV**

1 Steroids
2 Vasodilator
3 Insulin and oral hypoglycemic agents
4 Antibiotics – Bacteriocidal, Bacteriostatic
5 Chemotherapeutic drugs in leprosy and tuberculosis.

**EVALUATION**

Unit tests, term examinations and assignments are conducted to evaluate the student.

**REFERENCE**

1. Tripathi "Essential of Medical Pharmacology -

**OPTHALMOLOGY**

Briefly outline the following:

**COURSE OUTLINE**

**UNIT I**

Eye lesions in leprosy including causes, treatment and complication of lagophthalmos.

**UNIT II**

Field defects arising from lesions in the visual pathway, their clinical symptoms and methods of testing. Effects of paralysis of the ocular muscles and treatment.

**UNIT III**

Causes clinical features and a treatment of disorders of ocular movement occurring indisease such, as myasthenia gravis, progressive supranculear palsy and lower motor neuron disease.

**UNIT IV**

Causes, clinical features. Treatment and prognosis in visual failure arising from cataract, inflammatory disorders, vitamin A deficiency, glaucoma and Trachoma; emphasis preventable causes and prophylactic measures.

**UNIT V**

Definition of blindness and visual disability evaluation. Investigative procedures used for testing visual failure including basic screening procedure for visual acuity suitable for community health surveys.

**ENT**

**UNIT I**

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Outline the Anatomy and physiology of hearing and the use of audiometry in assessment of hearing.

**UNIT II**

Briefly classify causes of hearing loss Outline conservative and surgical intervention, including types and availability of hearing aids.

**UNIT III**

Briefly outline the functions of the vestibular apparatus.

**UNIT IV**

Briefly outline common ENT infections and diseases, which affect hearing, breathing and speech: and their management.

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**BOT THIRD YEAR**
**University Exam at the end of III year**

**CLINICAL ORTHOPAEDICS**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16301 | CLINICAL ORTHOPAEDICS | 3 | 60 |

**COURSE DESCRIPTION**
Following the basic science and clinical science course, this course introduces the student to the orthopaedic conditions which commonly cause disability.

**COURSE OBJECTIVES**
The objective of this course is that after 60 hours of lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of orthopaedic conditions causing disability and their management.

**COURSE OUTLINE**
**UNIT I**
**1.1 INTRODUCTION TO ORTHOPEDICS**
Introduction to Orthopedic terminology, types of pathology commonly dealt with, clinical examination, common investigations and outline of conservative and operative management.

**1.2 PRINCIPLES OF OPERATIVE TREATMENT**
List indications, contraindications and briefly outline principle of : Arthrodesis, arthroplasty, osteotomy, bone grafting and tendon - transfers.

a. Pathology and clinical manifestation of trauma of the bones, of soft tissues involving musculo - skeletal system.
b. Methods of study of mechanics and causes of injury Inflammation and repair

**UNIT II**
**3.1 TYPES OF SOFT TISSUE LESIONS:**
Sprains and Muscle Strains
List common sites of sprains and muscle strains and describe the clinical manifestations and treatment. Soft tissue lesions: capsulitis, bursitis, tenosynovitis.

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**3.2 FRACTURES AND DISLOCATIONS : GENERAL PRINCIPLES**

**Outline the following**

1. Types of fractures including patterns, open and closed fractures and fracture - dislocations.
2. Differences between dislocation and subluxation.
3. General and local signs and symptoms of fracture dislocations.
4. Principles of management of fractures and dislocations.
5. Prevention and treatment of complication including Fracture - disease, Volkmann's ischaemic contracture, Sudek's atrophy, carpal tunnel syndrome, myositis ossificans and shoulder - hand syndrome.
6. Fracture healing.

**3.3 UPPER LIMB FRACTURES and DISLOCATION**

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

**3.4 LOWER LIMB FRACTURES and DISLOCATIONS**

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

**3.5 SPINAL FRACTURES AND DISLOCATIONS**

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

**3.6 RECURRENT DISLOCATIONS**

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

**UNIT III**

**3.1 AMPUTATIONS**

a. Classify amputations, list indication for surgery
b. Outline pre-operative, post-operative and prosthetic management.
c. Outline prevention and treatment of complications.

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**3.2 BONE AND JOINT INFECTIONS**
Outline the etiology, clinical features, management and complications of septic arthritis, osteomyelitis, tuberculosis (including spinal T.B)

**3.3 BONE and JOINT TUMORS**
Classify and outline the clinical features, management and complications of the following (benign/malignant) bone and joint tumors: osteochondroma, osteosarcomas, ewing's sarcoma, multiple myeloma.

**3.4 CHRONIC ARTHRITIS**
Outline the pathology, clinical features, mechanism of deformities, management of complications of Rheumatoid arthritis, osteoarthritis of major joints and spine. Ankylosing spondylitis.

**3.5 LOW BACK ACHE, PAINFUL ARC SYNDROME, TENDINITIS, FASCITIS and SPASMODIC TORTICOLIS**

**3.6 SPINAL DEFORMITIES**
Classify spinal deformities and outline the salient clinical features, management and complications.

**UNIT IV**
**4.1 POLIOMYELITIS**
Describe the pathology, microbiology, prevention, management and complications of polio. Outline the treatment of residual paralysis including use of orthoses. Principles of muscle and tendon transfers.

**4.2 DEFORMITIES (CONGENITAL and ACQUIRED)**
Outline the clinical features and management of CTEV, CDH, Flat foot, vertical talus, limb deficiency (Radial club hand and femoral, tibial and fibular deficiency, meningomyelocele, arthrogryposis multiplex congenita, osteogenesis imperfecta and other causes of deformities including rickets, polio etc.).

**4.3 PERIPHERAL NERVE INJURIES**
Outline the clinical features and management, including reconstructive surgery of
a. Radial, median and ulnar nerve lesions.
b. Sciatic and lateral popliteal lesions.
c. Brachial plexus injuries including Erb's, Klumpke's and crutch palsy.

**UNIT V**
**5.1 HAND INJURIES**

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Outline of clinical features, management and complications of skin and soft tissue injury, tendon injury, bone and joint injury of the hand and fingers.

**5.2 LEPROSY**

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

**5.3 SPORTS INJURIES - BIO MECHANICS AND MANAGEMENT**

**5.4 RECONSTRUCTIVE SURGERIES FOR THE REHABILITATION OF**

a. Diseases of bones -T.B., leprosy, osteomyelitis septic and pyogenic arthritis etc.
b. Traumatic conditions
c. Deformities following paralysis - special emphasis given to spine, hand and foot.
d. Degenerative conditions such osteoarthritis, avascular necrosis.
e. Relief of pain.

**EVALUATION**

Class tests, monthly examinations and assignments are given to evaluate the Student.

**EXAMINATION METHOD** : 50 Marks for Internal
100 Marks for External Theory
50 Marks for Orals

**REFERENCE**

1. Natarajan M.N. *Text book of Orthopaedics*

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**CLINICAL NEUROLOGY**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16302 | CLINICAL NEUROLOGY | 3 | 60 |

**COURSE DESCRIPTION**

Following the basic science and clinical science course, this course introduces the student to the neurological conditions which commonly cause disability.

**COURSE OBJECTIVES**

The objectives of this course is that after 60 hours of lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understand of neurological conditions causing disability and their management.

**COURSE OUTLINE**

**UNIT I**

**1.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 the spinal cord, segments, long tracts of the spinal cord, the brachial and lumbar plexuses and cranial nerves.

**1.2 NEUROPHYSIOLOGY**

Review in brief the Neurophysiological basis of tone and disorders of tone, posture, bladder control, muscle contraction, movement and pain.

**UNIT II**

**2.1 CLINICAL FEATURES and MANAGEMENT**

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

**2.2 CONGENITAL AND CHILDHOOD DISORDERS.**

a. Cerebral Palsy.
b. Hydrocephalus.
c. Spina Bifida

**2.3 CEREBROVASCULAR ACCIDENTS**

a. General Classification: thrombotic, embolic, hemorrhagic and inflammatory stroke.
b. Gross localization and sequelae.
c. Detailed rehabilitative programme.

**2.4 TRAUMA - BROAD LOCALIZATION, FIRST AID AND MANAGEMENT OF SEQUELAE OF HEAD INJURY AND SPINAL CORD INJURY.**

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**2.5 DISEASES OF THE SPINAL CORD.**

a. Craniovertebral junction anomalies.
b. Syringomyelia.
c. Cervical and lumbar disc diseases.
d. Tumors
e. Spinal arachnoiditis

**UNIT III**

**3.1 DEMYELINATING DISEASES (CENTRAL AND PERIPHERAL)**

a. Guillain - Barre syndrome
b. Acute disseminated encephalomyelitis.
c. Transverse myelitis
d. Multiple sclerosis

**3.2 DEGENERATIVE DISORDERS.**

a. Parkinson' disease and extrapyramidal syndromes.
b. Dementia.

**3.3 INFECTION**

a. Pyogenic meningitis sequelae
b. Tuberculosis of central nervous system
c. Poliomyelitis

**UNIT IV**

**4.1 DISEASES OF THE MUSCLE: CLASSIFICATION, SIGNS, SYMPTOMS, PROGRESSION AND MANAGEMENT.**

a. Myopathies
b. Muscular dystrophy
c. Spinal Muscular Atrophy

**4.2 PERIPHERAL NERVE DISORDERS**

a. Peripheral nerve injuries : localization and management
b. Entrapment neuropathies
c. Peripheral neuropathies

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**4.3 MISCELLANEOUS**

a. Epilepsy : Definition, classification and management.
b. Myasthenia Gravis : Definition, course and management.
c. Intracranial tumors : Broad classification, signs and symptoms.
d. Motor neuron disease.

**UNIT V**

5.1. Disorders of Autonomic nervous system
5.2 Toxic and metabolic disorders of nervous system.
5.3 Deficiency disorders.
5.4 Spinal cord lesions - Paraplegia, Quadriplegia – Management, Neurogenic bladder - Management.

**5.5 ASSESSMENT**

Clinical assessment of neurological function to be taught through bedside or demonstration clinics.

a. Basic history taking to determine whether the brain, spinal cord or peripheral nerve is involved.
b. Assessment of higher mental function as orientation, memory, attention, speech and language.
c. Assessment of cranial nerves.
d. Assessment of motor power.
e. Assessment of sensory function- touch, pain and position.
f. Assessment of tone - spasticity, rigidity and hypotonia.
g. Assessment of cerebellar function.
h. Assessment of higher cortical function.
i. Assessment of gait abnormalities.

**EVALUATION**

Class test, monthly tests, and assignments are given for internal marks

**EXAMINATION METHOD** : 50 Marks for Internal
100 Marks for External Theory
50 Marks for Orals

**REFERENCE**

1. Neurology and Neurosurgery illustrated – Kenneth W.lindsay. Ian bone.

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## COMMUNITY MEDICINE

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16303 | COMMUNITY MEDICINE | 2 | 60 |

**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 objective of this course is that after 60 hours of lectures, demonstrations 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.

**UNIT I**

a. Outline the natural history of diseases and the influence of social, economic and cultural aspects of health on diseases.
b. Outline the various measures of prevention and methods of intervention-especially for diseases with disability.
c. Outline the national health care delivery system and the public health administration system in the central and state level.

**UNIT II**

a. Outline selected national health programmes.
b. Define occupational health and list methods of prevention of occupational diseases and hazards.
c. Outline the Employees State Insurance Scheme and its various benefits.
d. Describe the social security measures for protection from occupational hazards, accidents, diseases and the workman's compensation act.

**UNIT III**

a. Outline the objectives and strategies of the National Family Welfare Programme.
b. Define community based and institution based rehabilitation. Describe the advantage and disadvantages of institution and community based rehabilitation.

**UNIT IV**

a. 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 and h. Measles.
b. Describe the Epidemiology of Rheumatic heart disease, cancer, chronic degenerative disease and cerebrovascular accidents.

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

**UNIT V**

a. List the principles of health education, methods of communication and role of health education in rehabilitation services.
b. Define the role of community leaders and health professionals in health education.
c. Outline the role of international health agencies in rehabilitation of the disabled.

**EVALUATION**

Class tests, monthly tests and assignments

**EXAMINATION METHOD** **:** 50 marks for internal
100 marks for external theory.

**REFERENCE**

1. Park K. *"Text book of Preventive and Social Medicine"*

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**OCCUPATIONAL THERAPY IN ORTHOPEDICS and NEUROLOGY**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16304 | Occupational Therapy In Orthopedics and Neurology | 3 | 100 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 65 | 10 | 25 |

**COURSE DESCRIPTION**

This course follows the study of neurology and orthopedics and involves the application of occupational therapy techniques to these conditions. Further study on aspects of rehabilitation and term involvement will be covered in OT Rehabilitation.

**COURSE OBJECTIVES**

The objectives of this course is that after 100 hours of lectures, demonstrations, practical and clinics the student will be able to demonstrate an understanding of evaluation and therapy techniques used in Occupational Therapy for neurological and orthopaedic conditions.

**Unit I - Performance components and skills for Neurological and Orthopedic conditions in Occupational Therapy**

**Unit II - Approaches and models**

**Unit III - Enhancing occupational therapy intervention in neurological conditions**

**Unit IV - Hand Splinting**

**Unit V - Enhancing occupational therapy intervention in Orthopedic conditions**

**UNIT I. PERFORMANCE COMPONENTS AND SKILLS FOR NEUROLOGICAL AND ORTHOPEDIC CONDITIONS IN OCCUPATIONAL THERAPY**:

*1.1 Review and overview of performance components which include joint range of motion muscles strength, Sensation, endurance edema and pain motor control cognitive and perceptual components, gait, balance, coordination.

*1.2 Intervention, Remediation compensatory strategies for all occupational performance skills which includes ADL, mobility, motor planning, posture and positioning, cognitive and perceptual skills. Sensory reeducation and pain management

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**UNIT II APPROACHES AND MODELS**

*2.1 Review and overview of approaches Biomechanical approach Roods approach, Brunnstrom approach
*2.2 Neuro developmental treatment approach
*2.3 Proprioceptive Neuro muscular Facilitation
2.4 Motor Relearning program
2.5 Task oriented approach

**UNIT III. ENHANCING OCCUPATIONAL THERAPY INTERVENTION IN NEUROLOGICAL CONDITIONS**

3.1 Cerebro vascular accident / Stroke,
3.2 Traumatic brain injury
3.3 Multiples sclerosis
3.4 Parkinson's disease
3.5 Alzheimer's disease
3.6 Spinal cord injury
3.7 Motor neuron disease
3.8 Cerebellar ataxia
3.9 Poliomyetlitis
3.10 GBS ( Guillain barre syndrome)
3.11 Myasthenia gravis

**UNIT IV. HAND SPLINTING**

a) Definition
b) Mechanics of hand and principles of splinting
c) Splint Classification type, purpose, Design
*d) Splint fabrication process
*e) paper pattern and practical demonstration of resting hand splint and functional resting hand splint, Gutter splint
f. Materials used and precautions to be observed

**UNIT IV. ENHANCING OCCUPATIONAL THERAPY INTERVENTION FOR ORTHOPEDIC CONDITIONS**

5.1 Review and overview of approaches Rehabilitation approach
5.2 Orthopeadics conditions and intervention methods to enhance occupational therapy performance in all domains

a) Low back pain
b) Upper extremity injuries
- Shoulder and humerus fractures
- Shoulder dislocations
- Rotator cuff injuries
- Elbow and forearm fractures

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- Supra condylar fracture and volkman's ischemic contracture
- Tennis elbow
- Dequervain's syndrome
- Trigger finger

c) Amputations and prosthetics
- General consideration of upper extremity
- *Stump care
- Pre prosthetic management

d) peripheral nerve injuries
- Median nerve injury
- Ulnar nerve injury
- Radial nerve injury including appropriate reconstructive surgery and muscle reeducation.

e) Brachial Plexus Injury

f) Complex regional pain syndrome (CRPS)

*** Topics to be demonstrated.**

## EVALUATION

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, Hand splint file, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |

**BOOKS RECOMMENDED**


1. Pedretti's Practice skills for physical dysfunction edited by Heidi McHugh Pendleton ,Winifred Schultz Krohn (7th edition)
2. Occupational Therapy for Physical Dysfunction by Mary Vining Radomski, Catherine A Trombly (7th edition)
3. Occupational Therapy and Physical Dysfunction , Principles ,Skills and Practice by Ann Turner, Margaret Foster, Sybil E Johnson (4th edition)
4. Willard and Spackman's Occupational Therapy (12th edition)
5. Low back disorders –evidence based prevention and Rehab by Mc. Gill (3rd edition)
6. Movement : Functional movement systems : screening , Assessment corrective stratergies by Gray cook


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7. Hand function (A Practical guide to Assessment) by Mehmet Tuncay Duruoz (1st edition)
8. Apleys concise system of orthopedics and fractures -3rd Ed by
9. Orthopedic Physical Assessment by David J Magee (6th edition)
10. A Practical Guide to Operative Surgery by Das by Solomon Louis (5th edition)
11. Text Book of Orthopaedics and Traumatology by Mayil Vahanan Natarajan (7th edition)
12. The Neurology Examination 7th Ed by William W Campbell Dejongs
13. Spinal cord Injury; Functional Rehabilitation: (3rd edition) byMartha Freeman somess MSPT
14. Bobath concept (Theory and clinical practice in neurological Rehabilitation; (1st edition 2009 ) by Sue Raine, Linzi meadaus
15. Neurological Rehabilitation (6th Edition) by Darcy A. Umphred

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## OCCUPATIONAL THERAPY IN PAEDIATRICS

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16305 | Occupational Therapy in Paediatrics | 3 | 100 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 80 | 10 | 10 |

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**COURSE DESCRIPTION**

This course covers the application of the principles of Occupational Therapy to physical, mental and emotional disorders of childhood.

**COURSE OBJECTIVES**

The objectives of this course is that after 100 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 Peadiatrics conditions.

**Unit I - Child development from birth to five year**
**Unit II - Treatment approaches**
**Unit III - Occupational Therapy Intervention for Pediatric Conditions**
**Unit IV - Occupational therapy evaluation for specific areas of dysfunction**
**Unit V - Pediatric splinting**

**UNIT I. CHILD DEVELOPMENT FROM BIRTH TO FIVE YEAR**

1.1 Normal development from birth to five years
1.2 Physical development
*1.3 Reflex development and practical
1.4 Perceptual, Cognitive, social emotional and play development and testing

**UNIT II TREATMENT APPROACHES**

*2.1 Review and overview of approaches Rood's neuromuscular facilitation, Peto's conductive education
2.2 Ayre's sensory motor integration
2.3 Motor learning skills
2.4 Special education principles of education for perceptual and cognitive training
2.5 Play therapy

**UNIT III.OCCUPATIONAL THERAPY INTERVENTION FOR PEDIATRIC CONDITIONS**

3.1 Cardiac condition

3.2 Visuo perceptual and Visuo motor dysfunction
3.3 Cerebral palsy
3.4 Erbs palsy
3.5 Muscular dystrophy
3.6 Poliomyelitis
3.7 Spina bifida and hydrocephalus
3.8 Arthrogryphosis and congenital orthopedic disorders
3.9 Stills disease
3.10 Early intervention for congenital neurological disorders (High risk Infants)
3.11 Nutritional disorder
3.12 Mental retardation
3.13 Learning disability
3.14 Congenital Syndromes and Chromosomal abnormalities
3.15 Pervasive Developmental Disorder
3.16 Attention Deficit Hyperactivity Disorder
3.17 Seizure disorders
3.18 Haemophillia
3.19 Burns
3.20 Behavior disorder
3.21 Visual/auditory loss
3.22 Speech and communication disorder
3.23 Psychological reaction to disability in childhood and OT
3.24 Psychological aspects of hospitalization

**UNITIV -OCCUPATIONAL THERAPY EVALUATION FOR SPECIFIC AREAS OF DYSFUNCTION**

*4.1. Oro motor dysfunction:
*4.2. Pre writing and Hand writing skills
4.3. School based intervention
4.4. Cognitive evaluation for children

**UNIT V. PEDIATRIC SPLINTING**

5.1 Use of orthoses to improve function
5.2 Use of orthoses to promote proper position
5.3 Considerations for providing orthoses to children and adolescents
*5.4 Paper pattern and practical demonstration of short opponents, Cock up splint

***Topics to be demonstrated.**

**EVALUATION**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, Hand splint file, during the end of the year.

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| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |

**BOOKS RECOMMENDED**


1. Occupational Therapy for children by Jane Case Smith (5th edition)
2. Frames of Reference for Pediatric Occupational Therapy by Paula Kramer, Jim Hinojosa(2ndedition)
3. Willard and Spackman's Occupational Therapy (12th edition)
4. Occupational Therapy practice skills for physical dysfunction by Pedretti's (4th and 7th edition)
5. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly Latham and Rebecca Robler (4th and 7th edition)
6. The Development of the Infant and the Young Child: Normal and Abnormal Kindle Edition by Ronald S. Illingworth and MKC Nair (10th edition)
7. Treatment of Cerebral Palsy and Motor Delay, 5th Edition by Sophie Levitt
8. Building Bridges through Sensory Integration, 3rd Edition: Therapy for Children with Autism and Other Pervasive Developmental Disorder.


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**NON EXAM PAPER FOR III YEAR**

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## OBSTETRICS AND GYNECOLOGY

**UNIT I**
Review the anatomy of the female pelvis and embryonic and foetal development.

**UNIT II**
Outline the physiological skeletal changes during pregnancy, delivery and post partum period.

**UNIT III**
Describe an antenatal programme in preparation for labor: antenatal training, breathing, relaxation, and pelvic, lower extremity exercises.

**UNIT IV**
Outline the mechanism of labour and post-natal management after normal delivery, forceps delivery ad caesarean sections.

**UNIT V**
Outline the pre disposing factors and the role of exercises in the management of stress incontinence and prolapse uterus.

## RADIODIAGNOSIS

**UNIT I.**
Outline the basic views used in radiography, list the different types of radio diagnostic methods using X-ray, CT scan, Ultra sonogram. Outline the guideline for interpretation.

**UNIT II.**
Demonstrate X-rays showing different anomalies of the "spinea' in comparison with a normal X-ray.

**UNIT III.**
Outline the value of C.T scan of Brain and Spinal Cord in diagnosis, recognize some of the abnormal features.

**UNIT IV**.
Outline the value of MRI of Brain and Spinal cord in diagnosis; recognize some of the normal and abnormal features.

**UNIT IV**.
Identify on X-rays: Fractures and dislocations of extremities and spine, different disorders of bone e.g.: Osteomyelitis. Osteoporosis, rickets, tumors, etc.

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**BOT FOURTH YEAR**
**Examination at the end of: IV$^{th}$ Year**
**Clinical Cardio Respiratory and Work Physiology**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16401 | Clinical Cardio Respiratory and Work Physiology | 3 | 60 |

**COURSE DESCRIPTION**

Following the basic science and clinical science course 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 objectives of this course are that after 60 hours of lectures and demonstrations. In addition to clinics, the student will be able to demonstrate an understanding of cardio thoracic conditions causing disability and their management.

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

**COURSE OUTLINE**

**CLINICAL CARDIO RESPIRATORY**

**UNIT I:**

1.1 Anatomy and Physiology.

1.2 Describe in detail the anatomy of the lungs, bronchi and bronchopulmonary segments.

1.3 List the relationship of the bony cage and lungs to each other and to the abdominal contents.

1.4 Briefly describe the variations in the bony cage in the conditions like

1.5 Cervical ribs, Ricket – ricket rosary, Pigeon chest, Funnel and Scoliosis

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**UNIT II**

2.1 Describe the movements of the thorax: Bucket handle pump handle.2

2.2 List the muscles of respirations involved in inspirations and expirations (including accessory muscles that are involved).

2.3 Describe in brief the anatomy of the heart and its blood supply and briefly outline the electrical activity of the myocardium and normal ECG.

**UNIT III**

3.1 Describe the physiological control of respiration and highlight the function of the medullary and pontine respiratory centers and peripheral chemoreceptors.

3.2 Describe the mechanism for maintenance of blood pressure

3.3 Describe in detail the cough reflex.

**UNIT IV**

4.1 List the mechanical factors involved in breathing. Describe factors affecting lung compliance and airway resistance.

4.2 List the factors affecting diffusion of oxygen and carbon dioxide in the lungs.

4.3 Explain ventilation, perfusion and their interrelationship.

4.4 Outline the energy expenditure of various common activity of daily living.

**UNIT V**

5.1 Pulmonary function assessment: Briefly describe the pulmonary function tests and their use; briefly outline the basis and value of blood gas analysis.

5.2 Briefly outline the principles of cardio vascular stress testing.

5.3 Cardiac surgery

5.4 Miscellaneous

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## WORK PHISIOLOGY

**UNIT I PHYSIOLOGY OF EXERCISE.**

**UNIT II** .Cardiac out put and cardiac work during regulation of exercise.

**UNIT III**

Cardiac rate during exercise.and Oxygen consumption of the body at rest, during exercise and after exercise.

**UNIT IV**

4.1 Effect of exercise on.

a. Calorie intake
b. Coronary circulation
c. Metabolism.
d. Renal blood flow
e. Contractility of myocardium
f. Blood pressure
g. Haemodynamics variable.
h. Increase in C.O2. tension and mixing venous blood
i. Increase in pulmonary ventilation.

**UNIT V**

5.1 Equipment for work Physiology

a. Ergometer Cycle type
b. Ergometer Hand book and Hook treadmill type.

**EVALUATION- Theory- class tests, monthly tests and assignment**

**EXAMINATION METHOD** **:** 50 Marks for Internal
100 Marks for External Theory
50 Marks for Oral

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## REHABILITATION MEDICINE

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16402 | REHABILITATION MEDICINE | 1 | 60 |

### COURSE DESCRIPTION

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

### COURSE OBJECTIVES

The objective of this course is that after 60 hours of lectures and demonstrations, in addition to clinic, the student will be able to demonstrate an understanding of:

a. The concept of team approach in rehabilitation will be discussed and implemented, through practical demonstration with contributions from all members of the team.
b. Observation and identification of diagnostic features in physical conditions will be practiced through clinical demonstration.
c. Medical and surgical aspects of disabling conditions will be explained in relation to rehabilitation.
d. Identification of residual potentials in patients with partial or total disability (temporary or permanent).
e. Formulation of appropriate goals (long and short term) in treatment and rehabilitation will be discussed.
f. Student should be able to prescribe, check - out and train the uses of various rehabilitation aids.

### COURSE OUTLINE

### UNIT I

### A. INTRODUCTION

1. Define the term Rehabilitation. Explain its aims and principles.
2. Scope of rehabilitation
3. Discuss team work involved in rehabilitation, explaining briefly the role of each team members.
4. Various methods of approach in rehabilitation.

### B.LEGAL ASPECTS OF DISABILITY

Legislation for physically handicapped (in brief).

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**C. COMMUNICATION PROBLEMS**
Identify communication problems. Classify these problems and outline principles of treatment

**D. BEHAVIORAL PROBLEMS**
Identify behavioral problems in the disabled and outline the principles of management

**UNIT II**
**E. EVALUATION AND REHABILITATION OF CONDITIONS**
Demonstrate methods of evaluation for physical dysfunction and management of disabilities with particular reference to: Spinal cord injury (paraplegia and tetraplegia), Poliomyetlits, Brain injury, (including stroke and cerebral palsy) Arthritic conditions, Muscular Dystrophy, Hansen's disease, peripheral nerve lesions, fracture disease and chronic cardio - respiratory dysfunction, congenital conditions and osteoporosis.

**F. MOBILITY AIDS**
Demonstrate knowledge of the indications for different types of mobility aids and their functions, e.g, wheelchairs, walkers, crutches.

**G. PRE - VOCATIONAL EVALUATION**
Discuss methods and team involvement in pre-vocational evaluations and training

**H. ARCHITECTURAL BARRIERS**
Describe architectural barriers and possible modifications with reference to Rheumatoid arthritis, cerebrovascular accident, spinal cord injury and other disabling conditions.

**UNIT III**
**I. DISABILITY EVALUATION**
Outline the principles and limitations of disability evaluation and discuss its use.

**J. COMMUNITY BASED REHABILITATION MODULE**
Describe a CBR MODULE and compare this with an institutional based rehabilitation system.

**UNIT IV**
**K. OUTLINE OF OCCUPATIONAL THERAPY.**
**L. OUTLINE OF SPEECH THERAPY AND HEARING AIDS.**
**M. OUTLINE OF SOCIAL AND VOCATIONAL COUNSELLING**
**N. PRINCIPLES OF BIO - ENGINEERING**
Bio mechanical requirements for aids and appliances.

**UNIT V**

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**O. CLASSIFICATION OF AIDS AND APPLIANCES.**

Measurement and P.O.P. cast techniques. Simple splints techniques.

**P. PRINCIPLES OF U.L. PROSTHETICS AND ORTHOTICS.**

**Q. PRINCIPLES OF L.L. PROSTHETICS AND ORTHOTICS.**

**R. PRINCIPLES OF SPINAL ORTHOTICS.**

Assistive devices.
Three point pressure system.
Functional electrical stimulation.

**S. INTRODUCTION TO MATERIAL SCIENCES RELEVANT TO BIO - ENGINEERING**

**EVALUATION**

Internal marks (50): class test, assignment and model exams
University theory exams: 100 marks

**REFERENCE**

1. Sundar Text Book of Rehabilitation

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**OCCUPATIONAL THEAPY IN**
**ORGANIZATION ADMINISTRATION and WORK STUDY**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16403 | Occupational therapy in Organization administration and work study | 3 | 80 |

| Lecture | Exam | Demonstration And Practical work |
|---|---|---|
| 55 | 10 | 15 |

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**COURSE DISCRIPTION**

This course introduces the student to the health care delivery system from an administrative and management perspective. This course utilizes the basic skills of administration (planning, organizing, directing, budgeting, legal and ethical issues) in the development of practice of Occupational therapy services. These services will be developed for an agency or institution that does not currently offer Occupational therapy services or for and agency or institution whose service need to be expanded.

**COURSE OBJECTIVES**

The objective of this course is that after 80 hours of lectures, demonstrations, practicals and clinics the student will be able to demonstrate an understanding of the principles and methods of organization, administration and work study as appropriate to the OT delivery system and to patient treatment and training.

**Unit I - Introduction to organization and administration**
**Unit II - Reporting and recording**
**Unit III - Management in health care system**
**Unit IV - Staff development and directing**
**Unit V - Legal and ethical aspects of occupational therapy**

**UNIT I. Introduction to organization and administration**

1.1. Outline the purpose of the subject in relation to OT. Define organization. Explain aspects of administration in general and in relation to OT work situation. Outline principles of administration.

1.2 Describe methods of administration in an OT department.

1.3 General maintenance of equipment, furniture, buildings, costing of splints/aids/equipment/ articles/made in OT.

1.4 Inter professional collaboration of health care practices

a. Multidisciplinary Model

b. Interdisciplinary Model
c. Transdisciplinary Model

**UNIT II. Reporting and recording**

*2.1 Records: Their purpose eg. Attendance, statistics, inventory, stock.
2.2 Maintenance of records. Eg., methods of community and institutional based departments
*2.3 Referrals – purpose and types of referral
*2.4 Documentation
2.5 Types of correspondence
*2.6 Methods of filing
*2.7 Store keeping materials, inventory records, purchase ordering, petty cash accounting.

**UNIT III. Management in health care system**

3.1 Describe methods for care of equipment and materials.
3.2 Discuss budgeting – including items for an annual budget.
*3.3 Discuss considerations for construction of a new department and modification of an old department including:
a. Space required
b. Allotment of space, eg., suitability for access, plumbing requirement, and circulation of air.
3.4 Plan assessment forms eg., pre vocational, ADL, hand function and higher functions for initial evaluation and progress recording.
3.5 Outline safety precautions and infection control in OT. Discuss considerations relating to the following:
a) When using small hand tools.
b) General safety in the OT department, eg., Moving patients, training attenders and "helpers", while using safety machinery, while doing activities outside. Safety precautions in relation to patients with, Leprosy, Hemiplegia, Paraplegia, Back injury, Epilepsy, M.R., Suicidal patients, Patients with incoordination.

**UNIT IV. Staff development and directing**

4.1 Discuss staff management and development, purpose of staff meetings
4.2 Outline method of writing OT department annual reports. Calculate monthly and annual statistics. Make plans for future requirements eg., Consider staff patient ratio, equipment and staff requirements.
*4.3 Plan teaching methods for assistants and OT students in the clinical situations
*4.4 Practical work to be carried out under supervision, during clinical postings in 4th year eg., maintaining records, stores requests, care of equipment, inventory check, costing of aid, adaptations, petty cash records.

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*4.5 Plan to organize picnic or sports programme for patients

**UNIT V. Legal and ethical aspects of occupational therapy**

5.1 Outline legal aspects related to rehabilitation: Medico legal cases, workmen's compensation act and insurance facilities Medicare. Other financial benefits available for the disabled.

5.2 Implementation of PWD and national trust act of disabled.

5.3 Entrepreneurship

5.4 Professionalism and social media

**WORK STUDY**

**Unit I - Work**
**Unit II - Productivity**
**Unit III - Work Environment**
**Unit IV - Ergonomics**
**Unit V - Visit**

**UNIT I. Work**

1.1 Introduction to work

a. Define work. Explain the purpose and need to work and identify its relationship to culture.

b. Describe the importance of work to a handicapped person.

c. Distinguish categories of work. Outline the importance of work study to an Occupational Therapist.

1.2 Job analysis

a. Explain the purpose of job analysis. Identify aspects to be analyzed using sample form.

*b. Gain experience in analyzing different types of job. Carry out individual assignments.

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**UNIT II. Productivity**

a. Define productivity mention factors which influence productivity and causes for decreases in productivity.
b. Perform work measurement related to productivity.
c. Carry out methods of recording and analyzing. Use process chart flow diagram accurately.
b. *d) Prepare a string diagram. Participate in problem solving – practical activity e.g., coffee making using string diagram.
c. *e) Serving of meals in a ward using flow diagram or process chart.
d. Teach different symbols used in a process chart.

**UNIT III. Work Environment**

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

**UNIT IV. Ergonomics**

a. Specify the main objectives or ergonomics, energy saving techniques, using free movements, gravity, pre-arrangement of work etc.
b. Describe energy saving and joint protection techniques in O.T. related to relevant conditions e.g., Arthritis.

**UNIT V. Visits**

*5.1 Make visits of observation to local industries for observation of how to:

a. Carry out practical job analysis and recording
*b. Assess working condition
*c. Note the use of facilities like workmen's compensation, insurance benefits.
*d. Observe distribution of work and line of responsibility
*e. Note productivity: Whether it is profit making or subsidized etc.
*f. Identify advantage and disadvantages (limitations) of including sheltered work as a part of Occupational Therapy.

5.2 Visit sheltered workshops and other sheltered work situations for physically or mentally handicapped people, in order to:

a. Enumerate organizational aspects to consider when setting up a
b. sheltered workshop for physically, emotionally or mentally handicapped people.
c. Identify advantage and disadvantages in setting up a production workshop.
d. Specify an Occupational Therapist's role in this activity.

5.3 Visit to other educational institution
5.4 Assessment on visit to be submitted

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*** Topics to be demonstrated.**

**EVALUATION**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |

**BOOKS RECOMMENDED**


1. Management skills for the occupational therapy assistant Amy Solomon, Karen Jacobs (1st edition)
2. Leading and managing occupational therapy services evidence based approach by Brentbraveman phd., (7th edition)
3. Wilard and spackman OT by H. Hopkins and H. Smith 12th edition
4. Management in Occupational therapy Z. B Maslin (1st edition)
5. Industrial Therapy, Author: Mosby (publishers : 1995)


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## OCCUPATIONAL THERAPY IN REHABILITATION

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16404 | Occupational Therapy In Rehabilitation | 3 | 85 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 60 | 10 | 15 |

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**COURSE DESCRIPTION**

This course covers rehabilitation methods in detail and the application of O.T. to physical conditions not covered in O.T. 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 exam covers both subjects.

**COURSE OBJECTIVES**

The objective of this course is that after 85 hours of lectures, demonstrations, practical and clinics the student will be able to demonstrate an understanding of the OT role in medical and surgical conditions, and rehabilitation methods for people with residual disability.

**Unit I - Occupational therapy process and practices**
**Unit II - Intervention for occupational therapy function**
**Unit III - Work evaluation and work programs**
**Unit IV - Mobility**
**Unit V - Rehabilitation to promote occupational therapy function to Conditions**

**UNIT I. Occupational therapy process and practices**

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

1.2 Evidence Based Practice

1.3 Introduction to International classification of functioning, disability and health (ICF) International classifications: ICD, ICIDH and ICF

1.4 Observe and interpret psychological reactions in patients with physical disabilities and their relatives, and plan therapeutic approaches and methods for treating such reactions.

*1.5 Plan appropriate hand splint design prepare and fit two different hand splints, and explain their use.

a) Functional dynamic splint

b) Long opponents
c) Dorsal blocking splint

**UNIT II Intervention for occupational therapy function**

2.1 Explain in detail the OT in rehabilitation the physically disabled. Describe in ADL and functional assessment, training and planning methods of mobility.

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

2.3 Strategies and recent technologies to support occupational performance

2.4 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.

2.5 Mobile arm support and suspension arm devices

**UNIT III. Work evaluation and work programes**

3.1 Functional Capacity evaluation, Vocational Evaluation (General or Prevocational and Specific) ,Job Analysis, Work Hardening, Work Conditioning Home based Programmes, Transitional and supported employment

**UNIT IV. Mobility**

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

*4.2 Wheel Chair: Prescriptions, Wheelchair components, Wheel chair measurements Wheel chair adaptations, Wheel chair safety Wheel chair skill Training: basic and advanced

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

4.4 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.

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

**UNIT V. Rehabilitation to promote occupational therapy function to conditions**

5.1. Explain in detail the OT objectives and principles and appropriate treatment media for the following.
a. Arthritis
b. Burns
c. Cardiac rehabilitation

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d. Hansen's disease early treatment, prevention of deformity, treatment of neuritis reaction, rehabilitation measures for chronic disabilities.
e. Haemophillia (adults)
f. Terminal illness and Hospice care- Adults and Children
g. Amputation, both upper and lower limb including checkout, functional training and rehabilitation measures.
h. Cancer with emphasis on terminal illness and post operative treatment.
i. Geriatric condition, including social implications.
j. Muscular Dystrophy
k. HIV/AIDS
l. Cerebral tumours
m. Disaster Management
n. Discuss the role of OT including therapeutic media, in rehabilitation of the deaf and visually handicapped

*** Topics to be demonstrated.**

**EVALUATION**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assistive/Adaptive aids, Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |

**BOOKS RECOMMENDED**

1.Willard and Spackman's Occupational Therapy (12th edition)
2. Occupational Therapy for Physical Dysfunction by C.A. Trombly (7th edition)
3.Occupational Therapy and Physical Dysfunction Principles Skills and Practice by Ann Turner,
Margaret Foster, Sybil. E Johnson (4th edition)
4. O.T. Practice skills for Physical Dysfunction by L.V. Pedretti (7th edition)
5. Physical Rehabilitation –Susan B.O'sullivan (8th edition)

**GROUP PROCESS IN OT**

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16405 | Group Process in OT | 3 | 70 |

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| Lecture | Exam | Demonstration And Practical work |
|---|---|---|
| 40 | 10 | 20 |

**COURSE DESCRIPTION**

This course offers an overview of the range and scope of group work in Occupational Therapy. The theoretical foundations of such work more particularly explore the aspects of Group Dynamics. It also involved practical consideration of planning groups. This course focuses specifically on leadership and explores problems within the group, guidelines to solve the problems. It gives practical training to conduct, plan and organize the group.

**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.

**Unit I - Groups in Occupational therapy**
**Unit II - Group dynamics**
**Unit III - Planning group**
**Unit IV - Group leadership**
**Unit V - Ability to plan and organize the following groups**

**UNIT I.Groups in Occupational therapy**

1.1. Different approaches in-group work
1.2. Group process
1.3. Theories commonly used in the development of group interventions
1.4. Discuss about importance of social interaction skills critical for engagement in occupation
1.5. Encouraging social participation using available resource

**UNIT II Group dynamics**

2.1 Group Norms
2.2 Group cohesion
2.3 Roles
2.4 Stages of a group

**UNIT III. Planning group**

3.1 Group Interaction – verbal and non verbal
3.2. Intra group relationship
3.3. Managing groups

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3.4 Evaluating groups

**UNIT IV. Group leadership**

4.1. Leadership roles and styles

4.2 . Developing group leadership

***UNIT V.Ability to plan and organize the following groups**

5.1 Stress Management .Groups

5.2 Anger Management Groups

5.3 Drama therapy groups

5.4 Assertiveness training groups

5.5 Social interaction groups

5.6 Self esteem groups

5.7 Self help groups

5.8 Anxiety Management Groups

*** Explains that above mentioned tasks should be demonstrated.**

**EVALUATION**

**EXAMINATION METHOD** **:** Internal marks will include the summation of theory, and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |

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**BOOKS RECOMMENDED**


1. Group Work in Occupational therapy" by LINDA FINLAY. (1st edition)
2. Corey , M.S , Corey.C. 2010, Group Process and Practice (8th Edition ) Belmont, CA: Brooks /cole.
3. Corey.G. (2006), Groups in action; Evolution and challenges.
4. Group Dynamics in Occupational Therapy: The Theoretical Basis and Practice Application of Group Intervention 4th Edition by Marilyn B. Cole MS OTR/L FAOTA (Author)


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## OCCUPATIONAL THERAPY IN PSYCHIATRY

| Subject Code | Subject Title | Hours of Study per Week | Total Hours per Academic Year |
|---|---|---|---|
| BOT16406 | Occupational Therapy in Psychiatry | 3 | 80 |

| Lecture | Exam | Demonstration |
|---|---|---|
| 60 | 10 | 10 |

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**COURSE DESCRIPTION**

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

**COURSE OBJECTIVES**

The objectives of this course are that the student will be able to demonstrate an understanding of evaluation and therapy techniques used in occupational therapy for psychiatric conditions.

**Unit I - Early development in mental health**
**Unit II - Frames of Reference in the treatment of psychiatric conditions**
**Unit III - Tools for practice**
**Unit IV - Invention techniques and Rehabilitation**
**Unit V - Delivery of services in various settings and the role of occupational therapy**

**UNIT I. Early development in Mental health**

1.1 Describe the history of psychiatric occupational therapy, and its development upto the present day.

1.2 Define OT in relation to psychiatry, and the role of an occupational therapist in the psychiatric team.

1.3 Describe the general characteristics of a potential client. Identify problems that make a person seek help. Compare types of referrals. Discuss the potential of psychiatric OT in the community.

1.4 Discuss the role of activities in psychiatric treatment, including patient, therapist, activities and context of treatment

**UNIT II Frames of Reference in the treatment of psychiatric conditions :**

2.1. Cognitive behavior approach
2.2. Therapeutic use of self.
2.3. Projective techniques.
2.4. Mosey's adaptive skills.
2.5. Sensory integrative approach.
2.6 Recovery model
2.7 Cognitive disability FOR

**UNIT III Tools for practice**

3.1 List and describe the various attitudes applied by the therapist in different conditions.
3.2 Analyze activities with reference to psychiatry and psychodynamics of activities.
3.3 Describe in detail the assessment of a client including specific methods used in the following:
   a. Observation.
   b. Interest checklist.
   c. Interview.
   d. Personality questionnaire.
   e. ADL
   f. Social dysfunction rating scales – to learn any one scale
3.4 Help students to identify their client's psychiatric problems inrelation to the practical situations observed in OT. Eg. Restlessness manifesting as decreased concentration and attention.
3.5 Counseling: Guidelines and practical demonstration

**UNIT IV. Intervention techniques and Rehabilitation**

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

a. Schizophrenic and other Psychotic disorders
b. Mood disorders
c. Anxiety disorder including Phobias
d. Somatoform disorders
e. Factitious disorders
f. Eating and sleep disorders
g. Psychosomatic illness
h. Personality disorders
i. Substance related disorders
j. Seizure disorders
k. Organic Brain Syndrome

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l. Conversion dissociative disorder

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

4.3 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 then 4th Year.)

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

**UNIT V. Delivery of services in various settings and the role of occupational therapy**

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**

**EXAMINATION METHOD :** Internal marks will include the summation of theory, practical and viva marks of Internal Assessment Exam I, Internal Assessment Exam II and Model Exam. It also includes summation of Assignment, during the end of the year.

| | | |
|---|---|---|
| Internal Marks | : | 50 Marks. |
| University Theory Exams | : | 100 Marks. |
| Practical | : | 75 Marks. |
| Orals | : | 25 Marks |

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**BOOKS RECOMMENDED:**

1. Occupational Therapy and Mental Health edited by Jennifer Creek , Lesley Lougher (4th edition)
2. Frames of Reference in Psychosocial Occupational Therapy by Mary Ann Bruce, Barbara Borgb (2nd edition)
3. Occupational Therapy in short Term Psychiatry by Moya Willson (3rd edition)
4. Occupational therapy in Long Term Psychiatry by Moya Willson (2nd edition)
5. Willard and Spackman's Occupational Therapy (12th edition)
6. Mental Health Concepts and Techniques for the Occupational Therapy
7. Assistant by Mary Beth Early (4th edition)

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**NON EXAM PAPER FOR IV YEAR**

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## RESEARCH METHODOLOGY AND BIOSTATISTICS

**Instruction hours: 50**

### COURSE OBJECTIVES

After 50 hours of lectures on Research Methodology and Biostatics the students should acquire knowledge of principles of scientific methods of enquiry and basic statistical methods of enquiry and basic statistical concepts, be initiated to skills of information searching, identification, retrieval and evaluation, principles of measurement and experimental design. The students should be able to use the above knowledge to carry out a study.

### COURSE DESCRIPTION

The inclusion of this subject is to provide a basic knowledge and skills to the undergraduate Occupational Therapy students of the following:
Critical review of literature
To be able to plan and carry out a simple using basic statistical concepts

### COURSE CONTENT:

### UNIT I RESEARCH METHODOLOGY:-

1.1 Stages of research process
1.2 Developing ideas and defining a research question
1.3 Literature review
1.4 Errors in measurement and their control,
1.5 Reliability and validity
1.6 Epidemiological measures of disease frequency

### UNIT II RESEARCH DESIGN:

2.1. Quantitative (epidemiological)
2.2. Experiment (Clinical, field, community)
2.3. Observational
   a. Cohort
   b. Case control
   c. Cross sectional study
   d. Ecological study
2.4 Qualitative Research Method (sociological)
   a. Developing instruments (Delphi technique)
   b. Focus groups
   c. In depth interview
   d. Key information interview

### UNIT III

3.1 Ethical issues

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3.2 Critical Appraisal of a research report

**UNIT IV BIOSTATICS**

4.1 Data Collection, basic statistics and graphs
4.2 Probability and Probability distribution (Binominal and normal)
4.3 Sampling and sampling techniques.
4.4 Confidence interval

**UNIT V**

5.1 Tests of significance (for large sample and small sample)
   a. T Test
   b. Z Test
   c. Chi square test

5.2 Non-parametric tests (where to use, sign test and Mann- Whitney U test
   a. Correlation and Regression
   b. Epi info

**BASIC LIFE SUPPORT**

**UNIT I:**

Ethics of BLS

**UNIT II:**

CPR overview, CPR techniques and devices

**UNIT III:**

Adult BLS and Pediatric BLS including Neonatal Resuscitation

**UNIT 1V:**

Cardiac arrest during Therapy, Post cardiac arrest care and Adult stroke care.

**UNIT V:**

a) First Aid
b) Education, Implementation and Teams (EIT)

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## CLINICAL PRACTICE

**INSTRUCTION HOURS: 2100**

**Course Objective:** After 2100 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: 50 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 and wards of the Hospital.
*2. At Occupational therapy, orientation to all kinds of patients, sections, Equipment's, assessment and treatment services provided.
3. Clinical observation of patients – Identify the common physical/developmental / mental/ emotional problems
4. Identify media used by therapists during treatment.
5. Developing rapport with patients.
*6. Muscle testing and goniometry
7. Surface Anatomy.

*** Topics to be demonstrated.**

**EVALUATION:**

Files – To record media and equipment used in Occupational Therapy.

### IInd YEAR CLINICAL POSTING: 600 hrs

**GOAL:**

The student will be able to take detailed history and 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 and 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.

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*** Topics to be demonstrated.**

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

**IIIrd YEAR CLINICAL POSTING:750 hrs**

**GOAL:**

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

**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 and examination.
3. They will learn to do mental status examination, assess relevant performance components and 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 and 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 and crutch transfers, one handed techniques and mat activities.

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

*** Topic to be demonstrated.**

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**EVALUATION**:
Files:
1. Hand splint file which consist of two hand splints, paper pattern and fabrication description.
2. Case submission – 2 cases per posting
3. Case presentation – 1 per posting

**IV$^{th}$ YEAR CLINICAL POSTING: 800 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: Pediatrics, Neurology, Orthopedics, Mental Health and Community based rehabilitation.
*2. Student should be able to do specialized assessments on specific performance components.
3. Demonstrate competency in assessment, clinical reasoning and 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 and 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. Topic selection and Research proposal to be done

*** Topics to be demonstrated.**

**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 and job analysis after industrial visit.

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**REQUIRMENTS:**

- Maximum of 5 members can form a group for Research work.
- Every student should select their Topic for Research paper and should complete their Research Proposal. Any simple research Qualitative or Quantitative can be done excluding Intervention studies
- Students should make simple Assistive/ Adaptive aids for ADL and IADL.

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