YENEPOYA

(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

YENEPOYA (DEEMED TO BE UNIVERSITY)

Deralakatte, Mangaluru -575018

REGULATIONS AND CURRICULUM GOVERNING

UNDERGRADUATE PROGRAM

BACHELOR OF OCCUPATIONAL THERAPY

(BOT)

(CURRICULUM - EFFECTIVE FROM 2020-21)

ATTESTED

Dr. Gangadhara Somayaji K S
Registrar
Yenepoya (Deemed to be University)

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Ref: No. Y/REG/ACA/ACM-39/2020

09.09.2020

NOTIFICATION – 39-ACM/06/2020 dtd. 01.09.2020

Sub: Starting of Bachelors in Occupational Therapy course under the Faculty of Allied and Healthcare Professions

Ref: Resolution of the Academic council at its 39th meeting held on 27.08.2020, vide agenda-17

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The Academic Council at its 39th meeting held on 27.08.2020 and subsequently the Board of Management at its 50th meeting held on 28.08.2020 have resolved to approve the starting of 4 ½ year Bachelors in Occupational Therapy with the annual intake of 30.

This notification issued for implementation with effect from the academic year 2020-21.

REGISTRAR

mj

To,

The Coordinator, the Faculty of Allied and Healthcare Professions

Copy to:

1. Pro Vice Chancellor
2. Principal, YPC
3. Controller of Examinations
4. Principal, YPC
5. File copy

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The logo of the University

The Yenepoya (Deemed to be University) emblem reflects the rich ideals and the core values upon which the very foundations have been built. The colours on the shield are a salutation to the three key facets of the University - the mentor, the materials and the medium - through which this increase takes place, and are also representative of them.

Green embodies life and the giver thereof. Green is the color of paradise, the ultimate destination for all knowledge seekers. Just as the azure sky wraps the Earth, **blue** symbolizes protection. Blue is synonymous with scholastic achievements and the success the institution has to its credit.

And last but not the least, **grey** symbolizes stability and dependability. It stands for the staunch guiding (governing) principles and discipline that our students and hence our institutions are known for.

The Shield, symbolic of a reputed seat of learning, is adorned with (emblazoned with) the motto **"Rabbi Zidni 'Ilma"** on the ribbon below. The words in Arabic, taken from the Holy Quran, literally translate into the

meaningful phrase - **"Lord, increase me in knowledge"** - indeed the very frame, the life plasma and the purpose of the institution, all its faculties and facilities.

Vision

To provide access to quality higher education, ensuring equity, to create a vibrant knowledge capital and to create inspiring leaders of tomorrow who can take this country to the forefront of the developed nations.

Mission

- To achieve academic excellence and global competencies among students.
- To create an environment for the generation of new knowledge through meaningful research, adopting latest methods of pedagogy and incorporating modern principles of academics integrated with highest ethical standards.
- To extend the knowledge acquired and new knowledge generated for the development of the community.

Objectives

- To be at the forefront of innovation by consistently up dating curriculum, course content and practices enabling the students to be competent and well versed in the respective field of study.
- Provide use of cutting-edge technology and resources available to ensure effective transaction of the course content.
- To complement classroom learning with interactive learning systems and hands-on learning by creating a collaborative Industry University Interface.
- Provide freedom to continuously evaluate the evaluation systems and be at the forefront of innovation to enable and incorporate best practices.
- To promote research in the frontier areas of the subject by encouraging the faculty and students by inculcating ethical principles in research.
- To facilitate knowledge exchange by organizing seminars, symposia, workshops, lectures and other such activities.
- To facilitate communication and collaboration with academia, industry and society.
- To create advanced centers of research by developing state-of-the art facilities and meaningful

collaborations.

- To sensitize the students towards the social responsibilities by incorporating value education system.
- To extend the university services to the community for building a healthy, empowered and sustainable society.
- To build human resources and develop technologies to respond to the professional needs of the society.
- To take up extension and outreach programs to serve the community.

	Sixth Semester (31-36 months)	132
	Seventh Semester (37-42 months)	151
	Eighth Semester (43-48 months)	164
	Internship	177

Regulations and Curriculum of Bachelor of Occupational therapy

Chapter - I Regulations Governing BOT Degree Course

Regulations Governing BOT Degree Course: These ordinances shall be called "The Ordinances, Syllabus and Scheme of Examination pertaining to the Bachelor of Occupational Therapy course, BOT."

Eligibility for students seeking admission:

A candidate seeking admission to the Bachelor of Occupational Therapy Degree (BOT) course, shall have studied in English medium for the qualifying examination and:

Shall have passed two years Pre-University examination conducted by Department of Pre-University Education, Karnataka state, with English as one of the subjects, and physics, Chemistry and Biology as principal/optional subjects. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually also.

OR

Shall have passed any other examination conducted by Boards/Councils/Intermediate Education established by State Governments/Central Government and recognized as equivalent to two year Pre- University examination by the Rajiv Gandhi University of Health Sciences/Association of Indian University (AIU), with English as one of the subjects and Physics, Chemistry and Biology as optional/principal subjects and the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.

OR

Shall have passed intermediate examination in Science of an Indian University/Board/Council of other recognized examining bodies with Physics, Chemistry and Biology, which shall include a practical test in these subjects and also English as compulsory subject. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.

OR

Shall have passed first year if the three-year degree course of a recognized University with physics, Chemistry and Biology including a practical test in these subjects provided the

examination in an 'University Examination' provided that the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually in the pre university or other examinations mentioned in the clauses above.

OR

Shall have passed B.Sc Examination of an Indian University, provided that he/she has passed the B.Sc Examination with not less than two of the following subjects: Physics, Chemistry, Biology (Botany, Zoology) provided the candidate has passed subjects of English, Physics, Chemistry and Biology individually in the qualifying examinations mentioned in clauses 1.a., 1.b., 1.c., and 1.e.,

Note:

i. The candidate shall have, passed individually with minimum 35% in each of the principal subjects.

ii. Candidates who have completed diploma or vocational course through correspondence shall not be eligible for any of the courses mentioned above.

iii. Candidates who have Passed "Physical Sciences" instead of Physics and Chemistry as two separate subjects are not eligible for admission to this course.

Duration of the course:

4 and half years- Total 8 semesters (6 months in each semester learning & six months of internship)

Medium of instruction:

English shall be the medium for all subjects of study and for the examination of the BOT course.

Course of the study:

Subjects and hours distribution. Please refer to Appendix 1-9 semester (semester 1-8)

Attendance:

A candidate is required to attend at least 75% of the total classes conducted in each semester in all subjects prescribed for that semester, separately, in theory and practical/ clinical sessions to become eligible to appear for the university examinations in the first attempt. Principals should notify at their college, the attendance details at the end of each semester without fail, under intimation of the university.

Internal assessment:

- It shall be bases on evaluation of periodic tests, assignments, clinical presentation etc., (see Annexure I for example). Regular periodic examinations should be conducted through the

course.

- There should be a minimum of two (2) Sessional examinations during each semester. The average of the two examinations marks should be reduced to 20 for each Theory & practical/clinical, and sent to the University before the University examinations per notification. Proper record which forms the basis of the Internal Assessment should be maintained for all students and should be available for scrutiny. The marks of periodical tests should be displayed on the students notice board by principals.

- A candidate must obtain a 50% mark in the sessional theory and practical examinations separately and in internal assessment to be eligible to write the University examination.

Examinations:

- There will be one examination in each semester, to be conducted as per notification issued by the University from time to time.
- These examinations for both theory and practical will be held at the end of each semester
- The particulars of subjects for various examinations and distribution of marks are shown separately in Tables V to VIII.
- The examination for main subjects shall be conducted by the University and for subsidiary subjects by the respective college.

Eligibility criteria:

- Candidate is required to attend at least 75% of the total classes conducted in each semester in all subjects prescribed for that semester, separately, one theory and practical/ clinical sessions to become eligible to appear for the university examination.
- Candidate must obtain 50% marks in sessional theory and practical examination separately and internal assessment to be eligible to write the University examination.

Criteria for pass:

Main Subjects:

A candidate is declared to have passed university examination in a subject, if she/he secures 50 % of the marks in theory and 50 % in practical separately. For computation of marks in theory, the marks scored in the viva shall be added to the University conducted written examination and for a pass in practical, the marks scored in University conducted practical examination and intern al assessment [practical] shall be added together.

Subsidiary Subjects:

For a pass in Subsidiary subjects, a candidate shall secure 50% of the total marks prescribed for the subject. The marks obtained should be sent to the University 15 days prior to the commencement of University examination by the college.

Scheme of Examination:

Please refer to Appendix A

Subjects and distribution of marks:

Theory:

- **Main Subjects:** 100 marks divided as 80 marks (written examination at end of semester) and 20 marks (internal assessment based on semester‑long work presentation)

Question paper pattern- Annexure I

Maximum Marks	Type of question	Number	Marks per Question	Choices	Total
80	LAQ	02	15	Two out of three	30
	SAQ	06	05	Six out of eight	30
	Short answer	05	02	Any five out of six	10
	MCQs	10	01	No choice	10
					80

Maximum Marks	Type of question	Number	Marks per Question	Choices	Total
40	LAQ	01	10	One out of two	10
	Short Notes	05	05	four out of five	20
	Short Notes	05	02	No choice	10
					40

- **Subsidiary Subjects:** 50 marks divided as 40 marks (written examination at the end of the semester –conducted at Department level) and 10 marks (internal assessment based on semester‑long work presentation)

Practical:

100 marks divided as 60 marks (practical exam at end of semester), 20 (viva voce), and 20 (internal assessment)

Declaration of Class:

- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with distinction.
- A candidate having appeared in all subjects in the same examination and passed that examination in the first attempt and secures 65% of marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in first class.
- A candidate having appeared in all the subjects in the same examination and passed that examination in the first attempt and secures 50% of marks or more but less than 65% of grand total marks prescribed will be declared to have passed the examination in second class.
- A candidate passing the university examination in more than one attempt shall be placed in Pass class irrespective of the percentage of marks secured by him/her in the examination.
- The marks obtained by a candidate in the subsidiary subjects shall not be considered for award of Class or Rank. [Please note fraction of marks should not be rounded off clauses 10.1, 10.2, and 10

Carry over benefit:

- No student shall be admitted to any examination unless he/she fulfills the norms given in above. Academic progression rules are applicable as follows:
- A student, he/she shall not be eligible to attend the courses of VII semester until all the courses of I, II, III and IV semesters are successfully completed.
- A student, he/she shall not be eligible to get the course completion certificate until all the courses of I, to VIII semester are successfully completed.
- A student has to complete the course within double the duration of the course otherwise the student has to be discharged from the course.

Internship:

- There shall be six months (26 weeks) of Internship after the final year examination for candidates declared to have passed the examination in all the subjects. Internship should be done in a teaching hospital recognized by the University.
- No candidate shall be awarded degree certificate without successfully completing six months of internship.

- The internship should be rotatory and cover clinical branches concerned with Occupational Therapy such as Orthopedics, Cardio‑thoracic including ICU, Neurology, Neurosurgery, Pediatrics, General Medicine, General Surgery, Psychiatry (both inpatient and outpatient services).

- The student must maintain a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well as work done. On completion of four postings, the duly completed logbook after the signature of the Prof & HOD of the concerned Department, will be submitted to the Principal/Head of program to be considered as having successfully completed the internship program. Internship program: to be concluded before issuing University Certificate of BOT.

- The student must maintain a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well as work done. On completion of four postings, the duly completed logbook after the signature of the Prof & HOD of the concerned Department, will be submitted to the Principal/Head of program to be considered as having successfully completed the internship program. Internship program: to be concluded before issuing University Certificate of Bachelor's of Occupational Therapy.

Last 6 months of the Bachelor of Occupational Therapy training will be dedicated to an internship period: (Internship program: to be concluded before issuing University Certificate of BOT)

S.No	Areas	Contents	Practicum Hours
1.	Neurosciences	General Medicine, Cardiology, Pulmonology, Neurology,	125
2.	Orthopedics	General Surgery, Plastic Surgery, Cardiac Surgery, Orthopedics, OPD	125
3.	Mental Health	Psychiatry	125
4.	pediatrics	Pediatrics	125
Total			500

Minimum Standard Requirements to start BOT course:

For annual intake of 30 students.

1. An Occupational therapy department has to be set to provide Occupational therapy services to patients and provide clinical experience to students.
2. The Head of this department will have to be a certified Occupational Therapy practitioner with a minimum of master's degree in Occupational Therapy. To be a Professor, one has to put at least four years of teaching experience as Associate professor in the field of Occupational therapy in a medical college and three years as assistant professor in the department of Occupational therapy at a medical college.
3. Associate Professor:

- One should have put an experience of 3 years as Assistant Professor in the Department of Occupational Therapy at a medical college.

4. Assistant Professor – should have qualified with MOT.

Note * from 2019 to 2024, MOT with 5 years' experience in the field of Occupational therapy can be accepted as Assistant professor. And to start this course minimum 6

faculties are required with the minimum qualification and experience as stipulated above till 2024. After 2024, there must be Professor‑1, Associate Professor‑2, Assistant Professor ‑4 are required to start/renewal of intake of affiliation.

5. The faculty of the department of Occupational Therapy will have a dual responsibility of running the clinical work along with conducting lectures and practical for the students.

Infrastructural Requirements:

S. No.	Description of clinical/service area	Area in sq.ft
1.	Musculoskeletal and Hand Rehabilitation Unit	400
2.	Neurological Rehabilitation Unit	400
3.	Child Habilitation Clinic	500
4.	Splinting/Assistive Technology Clinic/Lab	250
5.	Psychosocial Rehabilitation Clinic	250
6.	Activities of Daily Living Unit	500
7.	Work Rehabilitation Clinic	400
8.	Standard Evaluation Lab	200

Non‑clinical space requirement:

S. No.	Description of Non-Clinical Space	Area in sq.ft
1.	Classroom (One classroom to be added each subsequent year)	300
2.	Demonstration room	300
3.	Staff cubicles	64
4.	Office room	250
5.	HOD room	100
6.	Students common room	300

Occupational Therapy Department Equipment List:

1. Hand therapy lab: Musculoskeletal

S. No.	Equipments	Required quantity
1.	Jebson Taylor Hand Function Test	01
2.	Purdue Pegboard Test	01
3.	Pinchometer	01
4.	Dynamometer	01
5.	Isolated finger exerciser	01
6.	Grip exercisers	01
7.	Crawford small part dexterity test	01

Functional restoration lab & Assistive technology lab:

S. No.	Equipment	Required quantity
1.	Functional assessment kit for ADL 01	
2.	Ergonomically devised adapted equipment's for home, work place and leisure	01
3.	Self‑help adapted equipment	01
4.	Wheelchair modifications	01
5.	Mobility aids	04
6.	Electrical Drill machine	01
7.	Sewing Machine	01
8.	Heat Bath	01
9.	Heat Gun	01
10.	Bench Vice	01
11.	Tools for orthotics	1 set

Work assessment, simulation, and hardening lab: Community based and Industrial rehab:

S. No.	Equipment	Required quantity
1.	Tailoring equipment	01
2.	Carpentry Tools	01
3.	Typewriter/Computer	
4	Work sample tests	01
5.	Staircase	01
6.	Work simulator	01

Cognitive-perceptual lab & Sensory motor therapy: Neuro OT:

S. No	Equipment	Required quantity
1.	Cognition & Perception Testing Batteries	01
2.	Sensory Assessment Kits	01
3.	Balance Assessment Tools	01
4.	Neuro-therapeutic modalities	01
5.	Stability Trainers	01

Psycho-social remedial lab: OT for Mental Health:

S. No.	Equipment	Required quantity
1	Reaction time Games	01
2	Tests for fine motor skills and motor accuracy	01
3	Psychomotor activities	01
4	Indoor and Outdoor Games	01
5	Cognitive Retraining activities	01

Developmental Therapy: Paediatrics

S. No.	Equipments	Required quantity
1	Cerebral Palsy Chairs	01
2	Floor Mats	04
3	Play Equipments	Lots
4	Vestibular-Proprioceptive equipment	01
5	Puzzles/Books	Lots
6	Fine-motor Games	Lots
7	Art activities	Lots
8	Perception assessment tools	01

Cardiopulmonary

S. No.	Equipment	Required quantity
1	Basic tools of assessment for Cardio-pulmonary parameters	01
2	Bicycle Ergometer	01
3	Treadmill	01
4	Fat pad measurement tools	01
5	Spirometer	01

General:

S. No.	Instruments	Required quantity
1.	Goniometers	05
2.	Wobble Board	02
3.	Exercise mattress (Large)	02
4.	Exercise Mattress (Small)	02
5.	Wall Bar	01
6.	Slings and ropes (suspension apparatus)	01
7.	Parallel Bars	01

8.	Medicine Balls	02
9.	Tilt Table	01
10.	Axillary crutches (Adult & Pediatrics)	02 each
11.	Wheel chair (Big and Small)	02
12.	Walker (Adult and Baby walker)	02 each
13.	K-Walker (Adult and baby)	02 each
14.	Shoulder ladder	02
15.	Wrist roller	01
16.	Static cycle (Bicycle fretsaw)	02
17.	X-ray viewer	01
18.	Rowing machine	02
19.	Elbow crutches	02
20.	Mattress for mat exercise	02
21.	Posture examining device	01
22.	Pelvic level device	01
23.	Pelvic traction kit	01
24.	Cervical traction kit	01
25.	Weighing machine	01
26.	De-Lorme's Metal Weight Shoe	01
27.	Shoulder pulley, ladder, wheel	01
28.	Joggers (Manual Treadmill machine)	01
29.	Quadriceps springs	01
30.	BP apparatus	01
31.	Skinfold callipers	01
32.	Walking stick adjustable	02
33.	Tripod stick adjustable	02
34.	Vestibular ball (cotton)	02
35.	Torch	02
36.	Tendon hammer	02
37.	Handgrip dynamometer	01
38.	Multi exerciser	01
39.	Physio roll 34 inches	01
40.	Examination Table	05
41.	Dumbells	10
42.	Weights	09 pairs
43.	Weight bars with weight pans	2+2+2
44.	Sand bags	10
45.	Peak flow meter	01
46.	Therabands	04
47.	Full length mirror	01
48.	Inclined & horizontal sand boards	05
49.	Sandblocks, weights, and pulleys	05

5. Provisional Item list for setting up OT Department:

S. No.	Department	Items Needed
1	Splinting	Brass Handle Scissor, Heat Gun, Taparia cutting Pliers, Taparia Nose Pliers, Bench Vice, Grinder, Drill Machine and Bit Set, Tin Cutter, Hock Saw Frame, Cast Steel Anvil, Wooden Mallet, Adjustable Projector Trolley, Files, Ball Pen Hammer, Water Bath, Wire Cutter, Riveting/Bending Rolling Tool, Small Heating Pan, Merrit Foot Machine, Heavy Duty Shear, All-purpose Snip, Hole Punch, Centre Punch, Metal Scales
2	Mobility Aids	Rehab Aid Quadripod, Rehab Aid Tripod, Wheel Chairs, Walking Aid Folding (Adjustable), Walker infant, Walker Scissors Gait Prevention (junior size), Wooden Walking cane, Walker Folding 4wheel, Various types of crutches
3	Teaching Aids	Skeleton and stand, X-ray lobby viewing box, Hand Splinting set, Orthosis set, Prosthesis Set, Adaptive Device Set
4	Assessment Tools	Sphygmomanometer, Jamar Pinch Gauge Hydraulic, LOCTA, Biofeedback, Tuning Fork, Knee Hammer, Replacement Probe Hot/Cold, Tracker – Hand Evaluation Kit, Visual Choice Reaction Inner, Jebson-Taylor Hand Function Test, Tremor Quantifier, COPM Kit, Dyslexia Adult Screening Test, Movement ABC-2 Complete Set, Bennett's Hand Tool Dexterity

		Comp Set, CSPDT Complete Set, E- MOHO (CD - OPHI-II, CD – Educational Version), Goniometer Set, Jamar Hand Evaluation Kit, Evaluation Tool of Children's Handwriting, TVPS: R Kit, Weight Discrimination, Infant Toddler Sensory Profile, O'Conner Dexterity Test, DOTCA - CH, Touch Test Sensory Evaluation, Hand Evaluation Kit, BADS C-Kit, Berry Visuo-Motor Integration, TEA CHKIT, Children's Memory Scale Complete Kit, Aesthsiometer Monofilament
5	Therapeutic Items	Rehab Trainer - Sammons Preston Rolyon Ergometer, Mirror (5' X3.5" , 5 mm)
6	Furniture	Tables Chairs (classroom/office), Cupboards, Pin-up Board, Notice Board, Treatment Plinth Low/ High, Revolving Stools, Lockers, Storage Furniture
7	Pediatric Unit	Adaptable Seat Position Durable Metal, Framer Rope Ascender, Proner Swing, Plain Disc Swing, Platform Swing, Roll Swing, Thick Frame Set: Hammock Swing, Vestibular Swing System, Jumping Stand, Sit and Spin, Sand and Walker Table, Music Player, Wedges, Wooden Beads, Rocker and Wobble Boards, Infant Adaptation Kit, Balance Beams, Scooter Boards, Therapy Balls, Oro-motor Sets, Variety Toys and Games.
8	Adult Unit	Commode Chair, Tramble with ramp attachment, Arm/leg combo skate with hand, Skacking cones, Digiflex set of 5, Pegboards, Kitchen Set, Grooming Set, Power Pump, Hand Assembly Training Device, Rebounder, Stability Trainer, Soft Iron Dumb-bells, Rehab WT Bar Set, Medicine Ball Set, Rolyon Resist Prehension Bench, Rolyon Weight Cuff, Elgin Leg Ankle Exerciser, Work Hardening Set, Desensitization Set, Delux Pedal Exerciser, ADL Set, Scar Suction Pump, Grip Exerciser, Multi Exerciser Therapy Unit

Curriculum Outline

Distribution of Courses and its Teaching Hours

First Semester (0-6 months)					
Course code	**Course Titles**	**Hours**			**Weekly class hours**
		Theory	**Practical**	**Total**	
AP01OT1C1	Human Anatomy-I	60	75	135	9
AP01OT1C2	Human Physiology – I	60	30	90	6
AP01OT1C3	General and Clinical Psychology	45	15	60	4
AP01OT1C4	Introduction of Occupational Therapy - I	45	--	45	3
Foundation course - Not for university examination					
AP01OT 1S1	Introduction to Healthcare Delivery System in India	30	--	30	2
AP01OT 1S2	Basic computer and information science	15	30	45	3
AP01OT 1S3	English, Communication and soft skills	30	15	45	3
AP01OT 1S4	Kannada	15	15	30	2
	Community orientation and clinical visit	--	--	-	-
	Total	**300**	**180**	**525**	**35**

Second Semester (7 – 12 months)					
Sl. No.	**Course Titles**	**Hours**			**Weekly class Hours**
		Theory	**Practical**	**Total**	
AP01OT2C1	Human Anatomy-II (Including Applied Anatomy)	60	90	150	10
AP01OT2C2	Human Physiology –II (Including Applied Physiology)	60	45	105	7
AP01OT2C3	Biochemistry	45	15	60	4
AP01OT2C4	Basics of Occupational Therapy Assessment	40	40	80	5
AP01OT2P1	Basics of Bioengineering	15	15	30	1
Foundation course - Not for university examination					
AP01OT2S1	Medical terminology and record keeping	30	--	30	2
	PBL/Assignment/Integrated seminar	--	--	45	3

AP01OT2S2	Clinical observation	--	--	50	5
	Total	**250**	**205**	**550**	**37**

Third Semester (13-18 months)					
Course code	**Course Titles**	**Hours**			**Weekly class Hours**
		Theory	**Practical**	**Total**	
AP01OT3C1	Pathology	45	15	60	4
AP01OT3C2	Microbiology	45	15	60	4
AP01OT3C3	Human life development	75	--	75	5
AP01OT3C4	Biomechanics & Kinesiology	75	30	105	7
Foundation course – Not for university examination					
AP01OT3S1	Introduction to quality and patient safety (Including Emergency care, BLS, Biomedical waste management, Infection prevention and control, etc.)	20	30	50	3
AP01OT3P1	Clinical observation & case presentations	--	170	200	13
	Total	**260**	**260**	**550**	**36**

Fourth Semester (19-24 months)					
Course code	**Course Titles**	**Hours**			**Weekly class hours**
		Theory	**Practical**	**Total**	
AP01OT4C1	Introduction of Occupational Therapy - II	60	30	90	6
AP01OT4C2	Therapeutic activities & exercises	60	30	90	6
AP01OT4C3	Community Medicine	60	--	60	3
AP01OT4C4	Pharmacology	45	--	45	4
Foundation course-Not for university examination					
AP01OT4S1	Bioengineering	30	30	60	4
AP01OT4P1	**Clinical Education**	--	200	200	13
	Total	**255**	**290**	**545**	**36**

Fifth Semester (25-30 months)					
Course code	**Course Titles**	**Hours**			**Weekly class hours**
		Theory	**Practical**	**Total**	
AP01OT5C1	Clinical Orthopedics & Traumatology	60	--	60	4
AP01OT5C2	General Surgery including burns and plastic surgery	60	--	60	5
AP01OT5C3	Occupational Performance-ADL, work, leisure	45	--	45	3
AP01OT5C4	General Medicine, Paediatrics & psychiatry	60	--	60	5
AP01OT5C5	Occupational Therapy rehabilitation	60	60	120	8
Subsidiary subject-Not for examination					
AP01OT5S1	First aid and emergency skills	20			
AP01OT5P1	**Clinical Education**	--	200	200	13
	Total	**285**	**260**	**545**	**38**

Sixth Semester (31-36 months)					
Course code	**Course Titles**	**Hours**			**Weekly class hours**
		Theory	**Practical**	**Total**	
AP01OT6C1	Occupational Therapy in Orthopedics	75	45	120	8
AP01OT6C2	Occupational Therapy in Neurosciences	75	45	120	8
AP01OT6C3	Clinical Neurology & Neurosurgery	60	--	60	4
AP01OT6C4	Sociology	45	--	45	3
Foundation course –Not for university examination					
AP01OT6P1	**Clinical Education**	--	200	200	13
	Total	**255**	**290**	**545**	**36**

Seventh Semester (37-42 months)					
Course code	**Course Titles**	**Hours**			**Weekly class Hours**
		Theory	**Practical**	**Total**	
AP01OT7C1	Occupational Therapy in Pediatrics	75	30	105	7
AP01OT7C2	Occupational Therapy in Mental Health	75	30	105	7
AP01OT7C3	Biostatistics & Research Methodology	60	--	60	4
AP01OT7C5	Clinical cardiovascular & pulmonary Conditions	60	--	60	4
Foundation course –Not for university examination					
AP01OT7S1	Clinical Discussion	--	30	30	2
AP01OT7P1	**Clinical Education**	--	200	200	13
	Total	**270**	**290**	**560**	**37**

Eighth Semester (43-48 months)					
Course code	**Course Titles**	**Hours**			**Weekly class hours**
		Theory	**Practical**	**Total**	
AP01OT8C1	Advances in Occupational Therapy practice issues	90	--	90	5
AP01OT8C2	Occupational Therapy in community practice	75	--	75	5
AP01OT8P1	Research Project	--	120	120	8
AP01OT8P2	Clinical education, evaluation and application	--	200	200	13

	Total	**225**	**335**	**545**	**36**

INTERNSHIP
INTERNSHIP – Intern should complete minimum of 158 working days over six months of time with minimum of 1106 hours (calculated based on 7 hours per working day, if 158 working days in 6-month span)

INTERNAL ASSESSMENT (IA):

It shall be based on evaluation of periodic tests assignments, clinical presentations etc., regular periodic examinations should be conducted throughout the course. There should be a minimum of two (2) sessional examinations during every semester. The average of the two examination marks should be reduced to 20 and 10 for Theory and Practical/Clinical respectively and sent to the University before the University examination as per notification. Proper record which forms the basis of the Internal Assessment should be maintained for all students and should be available for scrutiny. The marks of periodical tests should be displayed on the student notice board by the principal.

A Candidate must obtain 50% marks in theory and practical in core subjects separately in internal assessment to be eligible to write the university examination.

Attendance:

A candidate must secure -

- ✔ minimum **75%** attendance in theoretical
- ✔ minimum **85%** in Skills training (practical/Clinical) for qualifying to appear for the final examination.

No relaxation, whatsoever, will be permissible to this rule under any ground including indisposition etc.

SCHEDULE OF EXAMINATION (Appendix A)

There will be one university examinations at the end every semester, to be conducted as per notification issued by the University from time to time. Total of eight semesters shall be conducted during the course period. The particulars of courses for various examinations and distribution of marks are shown separately in below Tables. The examination for main courses shall be conducted by the University and non-university exam papers to be conducted by the college.

A. QUESTION PAPER PATTERN FOR BOT EXAMINATION-Annexure I

THEORY

COURSES HAVING MAXIMUM MARKS = 100		
TYPE OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
ESSAY TYPE- LAQ	**02** (***Any 2*** out of 3)	15X2=30
SAQ	**8** (***Any 8*** out of 10)	5x8=40
SHORT NOTES	**10**	2X10= 20
MCQs	**10**	10x1=10

COURSES HAVING MAXIMUM MARKS = 80		
TYPE OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
LAQ	**2** (***Any TWO*** out of Three)	15x2 = 30
SAQ	**6** (***Any SIX*** out of Eight)	6x 5=30
SHORT NOTES	**5** **(Any *FIVE*** out of Six**)**	2x5=10
MCQs	**10**	01x10= 10

COURSES HAVING SECTION A & SECTION B [40 + 40 = 80 MARKS]		
TYPE OF QUESTION	NUMBER OF	MARKS FOR EACH QUESTION
LAQ	SECTION A – **1** (***Any ONE*** out of Two) SECTION B – **1** (***Any ONE*** out of Two)	10x1=10
SAQ	SECTION A – **4** (***Any FOUR*** out of Five) SECTION B – **4**	5x4=20
SHORT NOTES	SECTION A – **5** SECTION B – **5**	5x2=10

COURSES HAVING 40 MARKS		
TYPE OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
ESSAY TYPE -LAQ	01 (***Any ONE*** out of Two)	10x 1=10
SHORT ESSAY TYPE	04 (***Any 4*** out of 5)	4x5=20
SHORT NOTES	**5** **(Any 5 out of 6)**	5x2=10

PRACTICAL

MAXIMUM MARKS = 40		
TYPE OF QUESTION	NUMBER OF QUESTIONS	MARKS FOR EACH QUESTION
LONG CASE	**1**	20
SHORT CASE	**2**	10 x2= 20

B. COURSES AND DISTRIBUTION OF MARKS FOR NON-UNIVERSITY EXAMINATION

Sl. No.	Courses	Theory	Viva-Voce	Practical	Total
		Max. Marks	Max. Marks	Max. Marks	Max. Marks
1.	Introduction to Healthcare Delivery System in India	40	10	--	50
2.	Basic computer and information science	40	20	40	100
3.	English, Communication and soft skills	40	30	30	100
4.	Kannada	40	30	30	100
6.	Medical terminology and record keeping	50	30	20	100

7.	Introduction to quality and patient safety (Including Emergency care, BLS, Biomedical waste management, Infection prevention and control, etc.)	40	20	40	100

Marks qualifying for pass:

a). University examination courses

A candidate is declared to have passed university examination in a course, if she/he secures 50 % of the marks in theory and 50 % in practical separately. For computation of 50 % marks in theory, the marks scored in the internal assessment [theory] shall be added to the University conducted written and viva voce examination and for a pass in practical, the marks scored in University conducted practical examination and internal assessment [practical] shall be added together.

b). Non university examination courses

For a pass in non-university examination courses, a candidate shall secure 40% of the total marks prescribed for the course. The marks obtained shall be sent to the University 15 days prior to the commencement of University examination.

Promotion criteria:

a) University examination courses:

Students are permitted to next year/Semester **only if the number of failed courses is two or less than two in total** and Student must clear these courses before appearing for the final examination of next year. For example

- Failed courses of 1st& 2nd semester is allowed to carry to 3rd and to be cleared before appearing 4th Semester
- Failed courses of 3rd semester is allowed to carry to 4th semester and to be cleared before appearing 5th semester
- Failed courses of 4th semester is allowed to carry to 5th semester and to be cleared before appearing 6th semester
- Failed courses of 5th semester is allowed to carry to 6th semester and to be cleared before appearing 7th semester
- Failed courses of 6th semester is allowed to carry and appear along with 7th semester

- Failed courses of 7th semester is allowed to carry to 8th semester and to be cleared before internship
- Candidate appearing for 8th semester is allowed to carry maximum of 2 courses in total from their previous semesters (6th & 7th) and shall be cleared before appearing internship.

b) Non-University examination courses:

- Students shall carry the failed courses and pass before appearing 8th semester University examination.

ONLY AFTER PASSING ALL THE COURSES IN ALL SEMESTERS HE/SHE WILL BE ALLOWED TO UNDERGO INTERNSHIP,

Review of answer papers of failed candidates -

As per the regulations prescribed for review of answer papers, by the University.

Re-admission after break of study -

1. Candidates having a break of study of five years and above from the date of admission and more than two spells of break will not be considered for readmission
2. The five years period of break of study shall be calculated from the date of first admission of the candidate to the course for the subsequent spells of break of study
3. Candidates having break of study shall be considered for re admission only if they are not subjected to any disciplinary action and no charges are pending or contemplated against them.
4. All re admissions of candidates are subjected to the approval of the Vice Chancellor.
5. The candidates having a break of study up to five years shall apply for readmission to the Registrar of this University. The candidates shall be granted exemption in the courses they have already passed.

Classification of successful candidates -

A successful candidate

1. Who secures 75% and above in the aggregate marks shall be declared to have secured 'FIRST CLASS WITH DISTINCTION' provided he/she passes the whole examination in the "FIRST ATTEMPT".
2. Who secures above 60% and less than 75% in the aggregate marks and completes the course within the stipulated course period shall be declared to have passed the examinations in the 'FIRST CLASS, provide he/she passes the whole examination in the "FIRST ATTEMPT'.
3. Who secures above 50% and less than 60% in the aggregate marks and completes the course within the stipulated course period shall be declared to have passed the examinations in the 'SECOND CLASS'; and All other successful candidates shall

be declared to have PASSED the examinations.

Internship –

There shall be 6 months (26 weeks) of Internship after the final year examination for candidates declared to have passed the examination in all the courses. Internship should be done in a teaching hospital recognized by the University.

No candidate shall be awarded degree certificate without successfully completing six months of Internship and Submitting the Project.

The Internship should be rotatory and cover clinical branches concerned with Occupational Therapy such as Orthopaedics, Cardiothoracic including ICU, Neurology, Neurosurgery Paediatrics, General Medicine, General Surgery, Obstetrics and Gynaecology both inpatient and outpatient services.

The 6 months of rotational posting must be covered in the following pattern.

- Occupational OPD (including Pediatrics and Psychiatry wards) 1 month
- Orthopedic wards 1 month
- General Medicine wards (including MICU and CCU) 1 month
- General Surgery wards (including CTS wards, CTS-ICU and Burns) 1 month
- Neurology and Neurosurgery wards (including Neuro. ICU) 1 month
- Community Posting – PHC 1 month

Successful Completion of internship – The student must maintain a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well as work done. A minimum of two case presentations in each posting is mandatory for the completion. On completion of all six postings, the duly completed logbook will be submitted to the Principal/Head of program to be considered as having successfully completed the internship program.

Vacation –The Head of the Institution may declare 45 days of vacation in an academic year to the students without a semester break. The period(s) of vacation can be decided by the Head of the Institution.

Maximum duration of the program –

Candidates should complete the Bachelor of Occupational Therapy degree course within a period of eight years from the date of joining in the course.

Discharge from the program –

1. "If a student admitted to a course of study in an University and for any reason not able to complete the course or qualify for the degree by passing the examinations prescribed within a period comprising twice the duration prescribed in the Regulations for the concerned course, he/she will be discharged from the said course, his/her name will be taken off the rolls of the University and he/she will not be permitted to attend classes or appear for any examination conducted by the University thereafter."

2. "In respect of courses where internship is prescribed and if a student is for any reason not able to complete the internship within a period comprising twice the duration prescribed in the Regulations for the concerned course, such cases will be placed before a Committee to be constituted by the Vice-Chancellor for making appropriate decision on a case to case basis, based on individual merits.

3. "Notwithstanding anything contained in the foregoing, the students who fall in the category clause 1 above and who are in the final year of the respective courses be given one more last and final chance to appear for the University Examination with a condition that if they do not pass the examination even in their last chance, they shall be discharged from the course. The Controller of Examinations will admit such candidate to the University examinations only after their producing an undertaking to this effect."

Migration/transfer of candidates –

The Vice Chancellor shall have the powers to place any migration/transfer he deems fit in the Board of Management and get approval for grant of permission for migration/transfer to candidates undergoing course of study in another University as prescribed by university.

PROGRAM OUTCOME:

A graduate of occupational therapy at the end of training will be able to-

- Demonstrate the knowledge, skills and attribute appropriate for a competent entry level professional.
- Articulate unique contribution of Occupational Therapy professional in patient care.
- Explain bio-medical and social sciences concepts underpinning Occupational Therapy practice.
- Enable individuals, groups and communities to participate in every day occupations.

- Diagnose and identify problems related to functional performance.
- Develop need based strategies for clients to overcome barriers due to dysfunction.
- Critically appraise the nature and meaning of occupation, the occupational nature of human beings, theories and basic principles related to enabling occupation and occupational performances.
- Be proactive in prevention oriented and health promotion practices.
- Be competent in research applications and identify best evidence based strategies in client treatment.
- Assume leadership, supervisory and management roles as appropriate and situational.
- Critically evaluate a problem and demonstrate clinical reasoning skills in problem-solving.
- Create high standards of practice, contribute to profession and participate in the ongoing learning processes.
- Recognize intrinsic values of people irrespective of culture, beliefs and economic status.

THE FIRST & SECOND SEMESTER OF BOT:

These semesters cover understanding of normal functioning of human body based on fundamental biophysical and biomechanical principles, underpinning the basic sciences of human anatomy, structural and functional basis of human function, physiological basis of tissue and organ functions and the biochemical composition of human body in order to relate to future applications in Occupational Therapy [systems covered enumerated and described in the content of syllabus]. Based on the above applied sciences the student forms a foundation, to relate to diagnosis of performance deficits.

THE THIRD & FOURTH SEMESTER OF BOT:

These semesters include didactic learning in pathology, pharmacology, microbiology, psychology, ergo therapeutics, Occupational therapy diagnostics. Students are prepared for understanding of underlying pathology in disease conditions, healing mechanisms, prevention of spread of disease and precautions during therapeutic intervention. Prepares student to understand the effects of drugs, process of recovery, recognize untoward effects of drugs pertinent to patient responses in therapy.

Creates a knowledge base for application of Occupational Therapy skills in the diagnosis of disrupted function and lays foundation of concepts to treat Occupational dysfunction. It explores the kinetics and kinematics of purposeful human movement. Integrates knowledge of human anatomy, physiology, physics, biomechanics of human body to allow diagnosis of function and it`s components. It emphasizes importance of bio- engineering, as it relates to human function in Occupational roles.

THE FIFTH & SIXTH SEMESTER OF BOT:

This course covers the Occupational Therapists scope of practice in view of the current assessment methods, treatment, and documentation methods utilized by Occupational Therapists in acute care and sub-acute care settings. Students are introduced to high technology equipment used in acute care setting like life support equipment, ICU, PCU, NICU, AKD and monitoring devices. Areas discussed include acute care risk factors, and complex diagnoses seen in acute care settings, the role of Occupational Therapist within the settings, frames of references in relation to treatment techniques, appropriate modalities used in intervention. The course prepares the student for assessing and evaluating performance ability in adult and geriatric problems, acute and chronic conditions of the joints, haematological disorders (haemophilia, leukaemia, terminal care); prepares to conduct education groups in the pre- and post-discharge phases for preventive and rehabilitative care. It enhances clinical reasoning with respect to applications in the field of ergonomics, work fitness in industry, work hardening and functional capacity evaluation following discharge and during return-to-work programs.

THE SEVENTH & EIGHTH SEMESTER OF BOT

These semesters provide medical basis of clinical reasoning and therapeutic applications in varied diagnosis like Musculoskeletal, Mental health, Developmental disorders, and Neurologic disorders to determine Occupational competency. Prepares for Theoretical understanding of research and methodology to promote research attitude and evidence-based documentation for future.

Offers practice in adaptation to environment to improve quality of life in clients, reintegration of clients in community. Areas covered are WHO, ICF disability rating, powered and manual mobility, seating, positioning systems, adaptive toys, augmentative communication systems, computer access, ECU [environmental control units], independent living aids, access and accommodation. Educates in use of Physical agent modalities as adjunct to Occupational Therapy intervention to improve participation in purposeful tasks

INTERNSHIP:

Experiential hands-on clinical training to allow independent decision making in professional practice.

Provides opportunity to optimal Refinement of professional skills in:

1] Documenting, modelling, interaction with disciplines, articulating needs and values of practice, verbal and written communication, record writing and record maintenance.

2] Clinical reasoning to practice independently in acute, sub-acute care, community, assistive technology, intra disciplinary and interdisciplinary interactive sessions.

3] Literature review and research presentation, exploration of the components of the research process in the context of occupational performance, diagnosis of functional limitations. Includes

developing research questions, conducting a literature search and review, data collection and data analysis, selection of instruments, drawing conclusions from data; offers insight into ethics of research, and sharing research findings.

SEMESTER-I

AP01OT1C1: HUMAN ANATOMY – I

Course description: The course is designed to provide students with the working knowledge of the structure of the human body which is an essential foundation for their clinical studies. Studies are concerned with the topographical and functional anatomy of the limbs and thorax. Particular attention is paid to the muscles, bones, joints, nerves and vessels of the regions.

First Semester (0-6 months)				
Course Code & Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT1C1- Human Anatomy- I	60	75	135	9

THEORY (PART I)

Histology + Embryology	20 Hours
Regional Anatomy and its applied anatomy (Part I)	20 Hours
Musculoskeletal Anatomy and its applied anatomy (PART I)	35 Hours

SR. NO.	AREAS	CONTENT
1.	Histology	● General Histology, study of the basic tissues of the body; ● Microscope, Cell, Epithelium, Connective Tissue, Cartilage, Bone, Muscular tissue, Nerve Tissue – TS & LS, Circulatory system – large sized artery, medium sized artery, large sized vein, lymphoid tissue, Skin and its appendages.
2.	Embryology	● Ovum, Spermatozoa, fertilization and formation of the Germ layers and their derivations. ● Development of skin, Fascia, blood vessels, lymphatic, ● Development of bones, axial and appendicular skeleton and muscles, ● Neural tube, brain vessels and spinal cord ● Development of brain and brain stem structures ● Developmental anomalies
3.	Regional Anatomy (PART I)	● THORAX i. Cardio – Vascular System 1. Mediastinum: Divisions and contents 2. Pericardium: Thoracic Wall: position, shape and parts of the heart; conducting System; blood

		Supply and nerve supply of the heart; names of the blood vessels and their distribution in the body – region wise. ii. Respiratory system 1. Outline of respiratory passages 2. Pleura and lungs: position, parts, relations, blood supply and nerve supply; Lungs – emphasize on broncho-pulmonary segments 3. Diaphragm: Origin, insertion, nerve supply and action, openings in the diaphragm. 4. Intercostal muscles and Accessory muscles of respiration: Origin, insertion, nerve supply and action.
4.	Musculo-Skeletal Anatomy (PART I) *[All the topics to be taught in detail]*	● Anatomical positions of body, axes, planes, common anatomical terminologies (Groove, tuberosity, trochanters etc) ● Connective tissue classification. ● Bones- Composition & functions, classification and types according to morphology and development. ● Joints-definition-classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints. ● Muscles – origin, insertion, nerve supply and actions ● Upper Extremity: i. Osteology: Clavicle, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges. ii. Soft parts: Breast, pectoral region, axilla, front of arm, back of arm, cubital fossa, front of fore arm, back of fore arm, palm, dorsum of hand, muscles, nerves, blood vessels and lymphatic drainage of upper extremity. iii. Joints: Shoulder girdle, shoulder joint, elbow joints, radio ulnar joint, wrist joint and joints of the hand. iv. Arches of hand, skin of the palm and dorsum of hand. v. Applied Anatomy including radiological anatomy ● Trunk i. Osteology: Cervical, thoracic, lumbar, sacral and coccygeal vertebrae and ribs ii. Soft tissue: Pre and Para vertebral muscles, intercostals

		muscles, Inter-vertebral disc.
5.	Applied Anatomy	● Applied Anatomy including radiological anatomy to be discussed under each unit.

PRACTICAL

SR. NO.	TOPICS	DIDACTIC HOURS
1.	Histology-Elementary tissue including surface Anatomy	10Hrs
2.	Embryology-models, charts & X-rays	10Hrs
3.	Thorax including surface anatomy	5Hrs
4.	Upper extremity including surface Anatomy and Osteology	20Hrs

Demonstrations:

- Demonstration of the organs in thorax in a cadaver
- Surface making of the lung, pleura, fissures and lobes of lungs, and heart.
- Demonstration of important joint movements.
- Identification of bony prominences on inspection and by palpation especially of Upper extremities.
- Palpation of nerves and arteries.

Recommended Textbooks:

1. Inderbirsingh's textbook of anatomy: 6th Edition, Volume I (General Anatomy, Upper limb, Lower limb). JP Brothers, New Delhi. Rs. 495/-
2. Inderbirsingh's textbook of anatomy: 6th Edition, Volume II (Thorax, Abdomen, Pelvis). JP Brothers, New Delhi. Rs. 495/-
3. SNELL [Richard S], Clinical Anatomy for Medical students : Ed. 5. Little Brown and Company Boston. 1995, p898, $26.50
4. B.D Chaurasia's Human Anatomy – Regional and Applied; Volume I, Volume Ii And Volume Iii.
5. MOORIE [Kieth L], Clinically Oriented Anatomy. Ed.3., Williams and Wilkins, Baltimore, 1992, p917, $30
6. DATTA [A.K], Essentials of human Anatomy: Thorax and Abdomen Ed 2. Vol. I Current Book International, Calcutta 1994, p433, Rs. 200/-
7. DATTA [A.K], Essentials of human Anatomy: Head and Neck Ed 2. Vol. II, Current Book International, Calcutta 1995, p363, Rs. 150/-
8. SINGH [Inderbir], Textbook of Anatomy with colour atlas: Introduction, Osteology, Upper Extremity, Lower Extremity. Vol. I. P Brothers, New Delhi 1996, Rs. 200/-6.
9. SINGH [Inderbir], Textbook of Anatomy with colour Atlas: Thorax and Abdomen. Vol. II. JP Brothers, New Delhi 1996, Rs. 175/-7.
10. SINGH [Inderbir], Textbook of Anatomy with colour Atlas: Head and Neck Central Nervous System. Vol. III. JP Brothers, New Delhi 1996, Rs. 175/-8.

11. SINGH [Inderbir],Human Osteology. JP Brothers, New Delhi 1990,p191, Rs. 50/-

Practical

12. ROMANES [G J], Cunningham manual of practical anatomy: upper and lower limb ed. 15 Vol. 1 Oxford Medical Publication, Oxford 1996, P263, Rs. 325/-2.
13. ROMANES [G J], Cunningham manual of practical anatomy : Thorax and abdomen ed15 Vol. II Oxford Medical Publication, Oxford 1996, P298, Rs. 325/-3.
14. ROMANES [G J], Cunningham manual of practical anatomy : Head and Neck and Brain ed. 15 Vol. II Oxford Medical Publication, Oxford 1996, P346, Rs. 325/-

AP01OT1C2:HUMAN PHYSIOLOGY - I

Course Description: Human Physiology –I, is designed to give the student an in-depth knowledge of fundamental reactions of living organisms, particularly in the human body.

First Semester (0-6 months)				
Course code & Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT1C2- Human Physiology – I	60	30	90	6

THEORY (Part I)

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	General Physiology	● Cell: Morphology. Organelles: their structure and functions ● Transport Mechanisms across the cell membrane ● Body fluids: Distribution, composition. Tissue fluid – formation.	2 Hours
2.	Blood	● Introduction: Composition and functions of blood. ● Plasma: Composition, formation, functions. Plasma proteins ● RBC: count and its variations. Erythropoiesis - stages, factors regulating. Reticulo - endothelial system (in	10 Hours

		brief) Hemoglobin - Anemia (in detail), types of Jaundice, Blood indices, PCV, ESR. ● WBC: Classification. Morphology, functions, count, its variation of each. Immunity ● Platelets: Morphology, functions, count, its variations ● Hemostatic mechanisms: Blood coagulation–factors, mechanisms. Their disorders. Anticoagulants. ● Blood Groups: Landsteiner's law. Types, significance, determination, Erythroblastosis fetalis. ● Blood Transfusion: Cross matching. Indications and complications. ● Lymph: Composition, formation, circulation and functions.	
3.	Nerve Muscle Physiology	● Introduction: Resting membrane potential. Action potential – ionic basis and properties. ● Nerve: Structure and functions of neurons. Classification, Properties and impulse transmission of nerve fibers. Nerve injury – degeneration and regeneration. ● Neuroglia: Types and functions. ● Muscle: Classification. Skeletal muscle: Structure. Neuromuscular junction: Structure. Neuromuscular transmission, myasthenia gravis. Excitation-Contraction coupling. Rigormortis. Motor unit. Properties of skeletal muscles, Strength- Duration curve, ● Length-tension relationship, fatigue, load. Smooth muscle: Structure, types, mechanism of contraction. Plasticity.	15 Hours
4.	Cardiovascular System	● Introduction: Physiological anatomy and nerve supply of the heart and blood vessels. Organization of CVS. Cardiac muscles: Structure. Ionic basis of action potential and pacemaker potential. Properties. ● Conducting system: Components. Impulse conduction Cardiac Cycle: Definition. Phases of cardiac cycle. Pressure and volume curves. Heart sounds – causes, character. ECG: Definition. Different types of leads. Waves and their causes. P-R interval. Heart block. ● Cardiac Output: Definition. Normal value. Determinants. Stroke volume and its regulation. Heart rate and its regulation. Their variations ● Arterial Blood Pressure: Definition. Normal values	20 Hours

		and its variations. Determinants. Peripheral resistance. Regulation of BP. ● Arterial pulse. ● Shock – Definition. Classification–causes and features ● Regional Circulation: Coronary, Cerebral and Cutaneous circulation. ● Cardiovascular changes during exercise.	
5.	Respiratory System	● Introduction: Physiological anatomy – Pleura, trachea-bronchial tree, alveolus, respiratory membrane and their nerve supply. Functions of respiratory system. Respiratory muscles. ● Mechanics of breathing: Intrapleural and Intrapulmonary pressure changes during respiration. Chest expansion. Lung compliance: Normal value, pressure-volume curve, factors affecting compliance and its variations. Surfactant – Composition, production, functions. RDS ● Spirometry: Lung volumes and capacities. Timed vital capacity and its clinical significance. Maximum ventilation volume. Respiratory minute volume. ● Dead Space: Types and their definition. ● Pulmonary Circulation. Ventilation-perfusion ratio and its importance. ● Transport of respiratory gases: Diffusion across the respiratory membrane. Oxygen transport – Different forms, oxygen-hemoglobin dissociation curve. Factors affecting it. P50, Haldane and Bohr Effect. Carbon dioxide transport: Different forms, chloride shift. ● Regulation of Respiration: Neural Regulation. Hering-breuer's reflex. Voluntary control. Chemical Regulation. ● Hypoxia: Effects of hypoxia. Types of hypoxia. Hyperbaric oxygen therapy. ● Acclimatization Hyperpnoea. Asphyxia. Cyanosis – types and features. Dysbarism ● Disorders of Respiration: Dyspnea. Orthopnea. Hyperpnea, hyperventilation, apnea, tachypnoea. periodic breathing – types ● Artificial respiration ● Respiratory changes during exercise.	15 Hours
6.	Applied Physiology	More detailed study of the physiology and practical applications of the following selected topics with emphasis on	8 Hours

		aspects, which should help in understanding the nature and treatment of common clinical situations of interest in Physiotherapy. ● Pulmonary Functions i. Properties of gases, Mechanics of respiration, Diffusion capacity, special features of pulmonary circulation and their application. ii. Respiratory adjustments in exercises. iii. Artificial respiration iv. Breath sounds. ● Cardio vascular Functions i. Blood flow through arteries, arterioles, capillaries, veins and venules. ii. Circulation of Lymph, Oedema iii. Factors affecting cardiac output. iv. Circulatory adjustment in exercise and in postural and gravitational changes, v. Pathophysiology of fainting and heart failure. ● Blood functions i. Thalassemia Syndrome, Hemophilia, VWF ii. Anemia, Leucocytosis ● Bone marrow transplant	

PRACTICAL

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Haematology (To be done by the students)	● Study of Microscope and its uses ● Determination of RBC count ● Determination of WBC count ● Differential leukocyte count ● Estimation of hemoglobin ● Calculation of blood indices ● Determination of blood groups ● Determination of bleeding time ● Determination of clotting time	20 Hours
2.	Clinical Examination	● Examination of Radial pulse. ● Recording of blood pressure ● Examination of CVS ● Examination of Respiratory system ● Examination of Motor System	10 Hours
3.	Demonstrations only	● Determination of ESR ● Determination of PCV	

Recommended textbooks:

1. Textbook of medical physiology – Guyton Arthur
2. Concise medical physiology – Chaudhuri Sujit K.
3. Human Physiology – Chatterjee C.C.
4. Textbook of practical Physiology – Ranade.
5. Text of Physiology – A.K.Jain.
6. Basics of Medical physiology- Venkatesh D &Sudhakar H H
7. Manipal Manual of Physiology – Prof. C N Chandrasekhar
8. Review of Medical Physiology – Gaming William F.
9. Physiological basis of Medical practice – Best & Taylor

AP01OT1C3: GENERAL & CLINICAL PSYCHOLOGY

Course Description: Human Psychology involves the study of various behavioral patterns of individuals, theories of development, normal and abnormal aspects of motor, social, emotional and language development, communication and interaction skills appropriate to various age groups. The study of these courses will help the student to understand their clients while assessment and while planning appropriate treatment methods.

First Semester (0-6 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AC01OT1C3- General and Clinical Psychology	45	15	60	4

SR. NO.	AREAS	CONTENTS
1.	Introduction to Psychology	● Schools: Structuralism, functionalism, behaviorism, Psychoanalysis. ● Methods: Introspection, observation, inventory and experimental method. ● Branches: pure psychology and applied psychology ● Psychology and physiotherapy
2.	Growth and Development	● Life span: Different stages of development (Infancy, childhood, adolescence, adulthood, middle age, old age). ● Heredity and environment: role of heredity and environment in physical and psychological development, “Nature v/s Nurture controversy”.

3.	Sensation, attention and perception	● Sensation: Vision, Hearing, Olfactory, Gustatory and Cutaneous sensation, movement, equilibrium and visceral sense. ● Attention: Types of attention, Determinants of attention (subjective determinants and objective determinants). ● Perception: Gestalt principles of organization of perception (principle of figure ground and principles of grouping), factors influencing perception (past experience and context). ● Illusion and hallucination: different types.
4.	Motivation	● Motivation cycle (need, drive, incentive, reward). ● Classification of motives. ● Abraham Maslow's theory of need hierarchy
5.	Frustration and conflict	● Frustration: sources of frustration. ● Conflict: types of conflict. ● Management of frustration and conflict
6.	Emotions	● Three levels of analysis of emotion (physiological level, subjective state, and overt behavior). ● Theories of emotion ● Stress and management of stress.
7.	Intelligence	● Theories of intelligence. ● Distribution of intelligence. ● Assessment of intelligence
8.	Thinking	● Reasoning: deductive and inductive reasoning ● Problem solving: rules in problem solving (algorithm and heuristic) ● Creative thinking: steps in creative thinking, traits of creative people
9.	Learning	● Factors effecting learning. ● Theories of learning: trial and error learning, classical conditioning, Operant conditioning, insight learning, social learning theory. ● The effective ways to learn: Massed/Spaced, Whole/Part, Recitation/Reading, Serial/Free recall, Incidental/Intentional learning, Knowledge of results, association, organization, and mnemonic methods.

10.	Personality	● Approaches to personality: type & trait, behavioristic, psychoanalytic and humanistic approach. ● Personality assessment: observation, situational test, questionnaire, rating scale, interview, and projective techniques. ● Defense Mechanisms: denial of reality, rationalization, projection, reaction formation, identification, repression, regression, intellectualization, undoing, introjection, acting out.
11.	Social psychology	● Leadership: Different types of leaders. Different theoretical approaches to leadership. ● Attitude: development of attitude. Change of attitude.
12.	Clinical psychology	● Models of training, abnormal behavior assessment, clinical judgement, psychotherapy, self-management methods, physiotherapist patient interaction, aggression, self-imaging, stress management, assertive training, Group therapy, Body awareness, Pediatric, child and geriatric clinical psychology.

Recommended textbooks:

1. Feldman.R.H(1996). Understanding Psychology. New Delhi: Tata McGraw hill.
2. Morgan et al. (2003). Introduction to Psychology. New Delhi: Tata McGraw hill.
3. Lefton. Psychology. Boston: Alwin & Bacot Company.
4. Mangal, S.K (2002). Advanced Educational Psychology. New Delhi: prentice hall.
5. Atkinson (1996). Dictionary of Psychology.

AP01OT1C4: INTRODUCTION OF OCCUPATIONAL THERAPY I

Course description: This course is designed to help students understand the concept as an occupational being, historical development of Occupational Therapy and its scope of practice. The course also includes the basic assumptions inherent in Occupational Therapy, philosophy and values.

Course Objectives: On completion of this course the student will learn about the philosophy of Occupational Therapy and its historical development. The student will understand the definition of occupation and the role of occupation in the development of occupational competence, self-identity, and maintenance of health & well-being. The student will also be familiar with the basic diagnostic tools and therapeutic modalities used in Occupational Therapy practice. These concepts are essential for the students' further development as Occupational Therapists.

S.NO	Areas	Contents	Didactic Hours
1	History and Scope of OT	1.1. **History**: Development of OT during world War; arts and crafts movement; moral treatment, History & definition of Occupational Therapy **1.2. Scope:** a. Definition of Occupational Therapy and its scope in rehabilitation b. Definition of rehabilitation c. Philosophy of rehabilitation with reference to principles of physical medicine. d. Team interaction models: Rehabilitation team and the role of different team members. e. Intra disciplinary, interdisciplinary and multidisciplinary models of interaction	3
2	Occupation & Occupational Science	**2.1. Theory of Occupation and Occupational Science:** a. Definition of Occupation, b. Forms of Occupation, c. Occupation as an evolutionary trait, d. Biological, social, psychological dimensions of Occupation. **e.** Introduction to Occupational science, Linkage between Occupational science and **f.** Occupational Therapy	4
3	Occupational Therapy practice framework	**2.2. Occupational Therapy Practice Framework** a. Domain 1. Occupations 2. Client factors 3. Performance skills 4. Performance patterns 5. Context and environment b. Process c. Service delivery models. Clinical reasoning, therapeutic use of self, activity analysis 1. Evaluation- occupational profile, Analysis of occupational performance 2. Intervention- plan, implementation, review 3. Outcome	10

4	Principles and methods of assessment; and diagnostic tools in OT	**3.3.<u>Muscle Tone:</u>** a. Definition of tone. b. Normal Muscle tone c. Abnormal Muscle tone d. Muscle tone assessment- e. Modified Ashworth Scale **3.4.<u>Coordination:</u>** a. Definition b. Characteristics of coordinated movements c. Inco-ordination, Cerebellar signs, Extra pyramidal signs d. Assessment of co-ordination **3.5.<u>Sensation:</u>** a. Definition. b. Classification of sensations. Techniques and methods of Sensory evaluation. Specific sensory testing. **3.6.<u>Perception:</u>** a. Definition. Components and description of each component. Assessment methods **3.7.<u>Cognition:</u>** a. Definition. b. Evaluation of cognitive Skills: Attention, Orientation, Memory (Immediate, Short term and c. Long term Memory), problem solving and Executive functions **3.8.<u>3.8.Endurance:</u>** a. Definition. b. Importance of Endurance in performance. c. Factors affecting endurance. d. Relation to activity tolerance.	15

5	Therapeutic modalities in OT	**4.1. <u>Therapeutic Exercises:</u>** a. **Introduction to exercises:** History, definition, principles, purposes, prerequisites, precautions, general indications and contraindications of Therapeutic exercises. b. **Therapeutics of muscle contractions:** Types of movements, muscle contractions used in therapeutic exercises. c. **Exercise classification.** Types of therapeutic exercises, Progressive Resistive Exercise (PRE). Regressive Resistive Exercise (RRE). Brief Repetitive Isometric Maximal Exercise (BRIME). Indications, Contraindications and precautions in therapeutic milieu **d. Objectives of therapeutic exercises: Objectives -** ● Improve Range of Motion. ● Improve Muscle Strength and Power, ● Improve General & Muscle Endurance. ● Improve Co-ordination. ● Reset Soft tissue length **4.2. <u>Other therapeutic modalities in Occupational Therapy:</u>** a. **Media, methods and modalities:** Definition and Description. **b. Activity analysis:** ● Definition and description.	10 20

		• Principles of activity analysis in respect to biomechanical, sensory-motor & socio-cultural aspects. • Criteria for selection of an activity. • Adapting & grading activity. • Activity Analysis • Medicine ball kicking • Inclined Sanding • Ergo Cycle • Eating.	
6	Occupational Functioning Model	• OFM model	3

Textbooks recommended:

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

AP01OT1S1: INTRODUCTION TO NATIONAL HEALTHCARE DELIVERY SYSTEM IN INDIA

Course Description: The course provides the students a basic insight into the main features of Indian health care delivery system and how it compares with the other systems of the world.

First Semester (0-6 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
Foundation course - Internal examination				
AP01OT1S1- Introduction to Healthcare Delivery System in India	30	-	30	2

SR. NO.	AREAS	CONTENT
1.	Introduction to healthcare delivery system	● Healthcare delivery system in India at primary, secondary and tertiary care ● Community participation in healthcare delivery system ● Health system in developed countries. ● Private Sector ● National Health Mission ● National Health Policy ● Issues in Health Care Delivery System in India
2.	National Health Programme	Background objectives, action plan, targets, operations, achievements and constraints in various National Heath Programme
3.	Introduction to AYUSH system of medicine	● Introduction to Ayurveda. ● Yoga and Naturopathy ● Unani ● Siddha ● Homeopathy ● Need for integration of various system of medicine
4.	Health scenario of India	past, present and future
5.	Demography & Vital Statistics	● Demography – its concept ● Vital events of life & its impact on demography ● Significance and recording of vital statistics

		• Census & its impact on health policy
6.	Epidemiology	• Principles of Epidemiology • Natural History of disease • Methods of Epidemiological studies • Epidemiology of communicable & non-communicable diseases, disease transmission, host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.

References

GOI. Twelfth five-year plan (2012-2017) social sector, Volume III. Planning commission government of India.p1- 47

MOHFW. Rural health care system in India- the structure and current scenario. Rural health statistics 2011.

Indian Public Health Standards (IPHS) guideline for community health centers, Revised 2012. DGHS, MOHFW, GOI. 1-94

Park K. Park's Textbook of Preventive and Social Medicine. 21st ed. Prem Nagar, Jabalpur, (M.P.), India: M/s Banarsidas Bhanot; 2011

AP01OT1S2: BASIC COMPUTERS AND INFORMATION SCIENCE

Course Description: The course has focus on computer organization, computer operating system and software, and MS windows, Word processing, Excel data worksheet and PowerPoint presentation.

First Semester (0-6 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
Foundation course - Internal examination				
AP01OT1S2- Basic computer and information science	15	30	45	3

SR. NO.	AREAS	CONTENT

1.	Introduction to computer	Introduction, characteristics of computer, block diagram of computer, generations of computer, computer languages
2.	Input output devices	Input devices (keyboard, point and draw devices, data scanning devices, digitizer, electronic card reader, voice recognition devices, vision-input devices), output devices (monitors, pointers, plotters, screen image projector, voice response systems).
3.	Processor and memory	The Central Processing Unit (CPU), main memory.
4.	Storage Devices	Sequential and direct access devices, magnetic tape, magnetic disk, optical disk, mass storage devices.
5.	Introduction of windows	History, features, desktop, taskbar, icons on the desktop, operation with folder, creating shortcuts, operation with windows (opening, closing, moving, resizing, minimizing and maximizing, etc.).
6.	Introduction to MS-Word	Introduction, components of a word window, creating, opening and inserting files, editing a document file, page setting and formatting the text, saving the document, spell checking, printing the document file, creating and editing of table, mail merge
7.	Introduction to Excel	Introduction, about worksheet, entering information, saving workbooks and formatting, printing the worksheet, creating graphs.

AP01OT1S3: ENGLISH, COMMUNICATION AND SOFT SKILLS

Course description: This course is intended to teach the students and familiarize with the usage of correct English in all their communications. This will also help the student to overcome their barrier in communication.

First Semester (0-6 months)				
Course code & Title	**Hours**			**Weekly class Hours**
	Theory	**Practical**	**Total**	
Foundation course - Internal examination				
AP01OT1S3- English, Communication and soft skills	30	15	45	3

SR. NO.	AREAS	CONTENT
1.	Basic Language Skills	Grammar and Usage
2.	Business Communication Skills. With focus on speaking	Conversations, discussions, dialogues, short presentations, pronunciation
3.	Teaching the different methods of writing	Letters, E-mails, report, case study, collecting the patient data etc. Basic compositions, journals, with a focus on paragraph form and organization
4.	Basic concepts & principles of good communication	
5.	Special characteristics of health communication	
6.	Types & process of communication	Verbal, non-verbal and written communication. Upward, downward and lateral communication
7.	Therapeutic communication	Empathy versus sympathy
8.	Communication methods for teaching and learning	
9.	Communication methods for patient education	
10.	Barriers of communication & how to overcome	

AP01OT1S4: KANNADA

Course description: This meant for non-Kannada students of this Institution who come from other states & countries. Kannada a self-Instructional course aims at developing. Listening and speaking skills. These lessons are presented in the background of socially familiar contents. Interactivity, Stimulus response is aimed through conversation and narration. The language used in these lessons is standard spoken Kannada.

First Semester (0-6 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
Foundation course – Internal Examination				
AH01OT 1S4- Kannada	15	15	30	2

SR. NO.	AREAS	CONTENT
1.	Introduction	Personal Pronounce, Possessive forms, Interrogative words
2.	Introducing each other	Personal pronouns. Possessive forms (Is it? – Yes, No type interrogative)
3.	Possessive forms of nouns dubitative questions, Relative nouns	
4.	Enquiring	Conversation, qualitative and quantitative adjunctive
5.	Predicative forms, locative case	
6.	Dative case basic numerals, use of parts of the speech “for” etc	
7.	Ordinal numerals. Plural markers, colour adjectives, defective verbs	
8.	Imperative. Permissive and hortative verb “iru” and corresponding negation	
9.	Comparative, non-past tense, Instrumental and ablative case. Past tense, ‘d’, -‘t’, ‘k’, ‘t’, ‘D’ and ‘idh’negation, verbal noun.	
10.	Routine activities of a student. Present continuous tense, Perfect Tenses and negations.	
11.	Discussion	Conditional and negative conditions.

COURSES AND DISTRIBUTION OF MARKS FOR UNIVERSITY EXAMINATION

First Semester (0-6 months)								
Sl. No	Courses	**Theory**				**Practical**		Total
		Written		Viva-voce	IA	Practical	IA	
		Time	Max.Marks	Max. Marks.	Max. Marks.	Max. Marks	Max. Marks	Max. Marks
1	**AP01OT1C1** Human Anatomy-I	3	100	30	20	40	10	200
2	**AP01OT1C2** Human Physiology -I	3	100	30	20	40	10	200
3	**AP01OT1C3** General and Clinical Psychology	2	40	--	10	--	--	50
	AP01OT1C4 Introduction of Occupational Therapy I	3	80	--	20	--	--	100

SEMESTER-II

AP01OT2C1:HUMAN ANATOMY – II

(Including Applied Anatomy)

Course description: It is designed to provide students with the working knowledge of the structure of the human body which is essential foundation for their clinical studies. Studies are concerned with the topographical and functional anatomy of the Head and Neck, Abdomen and lower limbs. Particular attention is paid to the muscles, nerves, blood vessels, bones and joints of the regions. The abdomen, pelvis, perineum, head and neck and central nervous system (CNS) are studied with reference to topics of importance to physiotherapists. The study of the CNS includes detailed consideration of the control of motor function.

Second Semester (7 – 12 months)				
Course code &Title	**Hours**			**Weekly class Hours**
	Theory	**Practical**	**Total**	
AP01OT2C1- Human Anatomy- II (Including Applied Anatomy)	60	90	150	10

THEORY (PART II)

Regional Anatomy and its applied anatomy (Part II)	15 Hours
Musculo-skeletal Anatomy and its applied anatomy	30 Hours
Neuro. Anatomy and its applied anatomy	30 Hours

SR. NO.	AREAS	CONTENT
1.	Regional Anatomy - (PART II)	● ABDOMEN: i. Peritoneum: Parietal peritoneum, visceral peritoneum, folds of peritoneum, functions of peritoneum. ii. Large blood vessels of the gut iii. Location, size, shape, features, blood supply, nerve supply and functions of the following: stomach, liver, spleen, pancreas, kidney, urinary bladder, intestines, gall bladder. ● PELVIS: i. Position, shape, size, features, blood supply and nerve supply of the male and female reproductive system.
2.	Endocrine glands	● Position, shape, size, function, blood supply and nerve supply of the following glands:

		i. Hypothalamus and pituitary gland, ii. Thyroid glands, iii. Parathyroid glands, iv. Adrenal glands, v. Pancreatic islets, vi. Ovaries and testes, vii. Pineal glands, viii. Thymus.
3.	Musculo-Skeletal Anatomy – (PART II) *[All the topics to be taught in detail]*	● Bones- Composition & functions, classification and types according to morphology and development. ● Joints- definition-classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints. ● Muscles – origin, insertion, nerve supply and actions ● Head and Neck: i. Osteology: Mandible and bones of the skull. ii. Soft parts: Muscles of the face and neck and their nerve and blood supply- extra ocular muscles, triangles of the neck, iii. Gross anatomy of eyeball, nose, ears and tongue. ● Lower Extremity i. Osteology: Hip bone, femur, tibia, fibula, patella, tarsals, meta tarsals and phalanges. ii. Soft parts: Gluteal region, front and back of the thigh (Femoral triangle, femoral canal and inguinal canal), medial side of the thigh (Adductor canal), lateral side of the thigh, popliteal fossa, anterior and posterior compartment of leg, sole of the foot, lymphatic drainage of lower limb, venous drainage of the lower limb, arterial supply of the lower limb, arches of foot, skin of foot. iii. Joints: Hip Joint, Knee joint, Ankle joint, joints of the foot. ● Pelvis: i. Pelvic girdle and muscles of the pelvic floor ii. Anterior abdominal wall muscles
4.	Neuro. Anatomy	● Organization of Central Nervous system - Spinal nerves and autonomic nervous system mainly pertaining to cardiovascular, respiratory and urogenital system ● Cranial nerves ● Peripheral nervous system i. Peripheral nerve ii. Neuromuscular junction

		● Sensory end organs
5.	Central Nervous System	i. Spinal segments and areas ii. Brain Stem iii. Cerebellum iv. Inferior colliculi v. Superior Colliculi vi. Thalamus vii. Hypothalamus viii. Corpus striatum ix. Cerebral hemisphere x. Lateral ventricles xi. Blood supply to brain xii. Basal Ganglia xiii. The pyramidal system xiv. Pons, xv. Medulla, xvi. Extra pyramidal systems
6.	APPLIED ANATOMY	Applied Anatomy including radiological anatomy to be discussed under each units

PRACTICAL

List of Practical / Demonstrations

Topics

1. Pelvic and Lower extremity including surface Anatomy and Osteology [20Hrs]
2. Demonstration of muscles of abdomen pelvic girdle and lower extremity. [20Hrs]
3. Head and Neck, Brain and Spinal cord including surface anatomy
   - Surface marking of the liver, spleen, kidney, cranial nerves and spinal nerves
   - Demonstration of the organs in abdomen in a cadaver
   - Demonstration of joint movements
   - Identification of body prominences on inspection and by palpation especially of Lower extremities.
   - Palpation of nerves and arteries.

Textbooks recommended:

1. Inderbirsingh's textbook of anatomy: 6th Edition, Volume I (General Anatomy, Upper limb, Lower limb). JP Brothers, New Delhi. Rs. 495/-
2. Inderbirsingh's textbook of anatomy: 6th Edition, Volume II (Thorax, Abdomen, Pelvis). JP Brothers, New Delhi. Rs. 495/-
3. Inderbirsingh's textbook of anatomy: 6th Edition, Volume III (Head and neck, Neuro

anatomy, Genetics). JP Brothers, New Delhi. Rs. 495/-
4. SNELL [Richard S], Clinical Anatomy for Medical students: Ed. 5. Little Brown and Company Boston. 1995, p898, $26.50
5. B.D Chaurasia's Human Anatomy – Regional and Applied; Volumes I, II & III.
6. MOORIE [Kieth L], Clinically Oriented Anatomy. Ed.3., Williams and Wilkins, Baltimore, 1992, p917, $30
7. DATTA [A.K], Essentials of human Anatomy: Thorax and Abdomen Ed 2. Vol. I Current Book International, Calcutta 1994, p433, Rs. 200/-DATTA [A.K],
8. Essentials of human Anatomy: Head and Neck Ed 2. Vol. II, Current Book International, Calcutta 1995, p363, Rs. 150/-
9. SINGH [Inderbir], Textbook of Anatomy with colour atlas: Introduction, Osteology, Upper
10. Extremity, Lower Extremity. Vol. I. P Brothers, New Delhi 1996, Rs. 200/-6.
11. SINGH [Inderbir], Textbook of Anatomy with colour Atlas: Thorax and Abdomen. Vol. II. JP Brothers, New Delhi 1996, Rs. 175/-7.
12. SINGH [Inderbir], Textbook of Anatomy with colour Atlas: Head and Neck Central Nervous System. Vol. III. JP Brothers, New Delhi 1996, Rs. 175/-8.
13. SINGH [Inderbir], Human Osteology. JP Brothers, New Delhi 1990,p191, Rs. 50/-

Practical

1. ROMANES [G J], Cunningham manual of practical anatomy: upper and lower limb ed. 15Vol 1 Oxford Medical Publication, Oxford 1996, P263, Rs. 325/-2.
2. ROMANES [G J], Cunningham manual of practical anatomy: Thorax and abdomen ed15 Vol. II Oxford Medical Publication, Oxford 1996, P298, Rs. 325/-3.
3. ROMANES [G J], Cunningham manual of practical anatomy : Head and Neck and Brain ed. 15 Vol. II Oxford Medical Publication, Oxford 1996, P346, Rs. 325/-

AP01OT2C2:HUMAN PHYSIOLOGY II

(Including Applied Physiology)

Course Description: The course is designed to give the student an in-depth knowledge of fundamental reactions of living organisms, particularly in the human body. The major topics covered include the following: the cell; primary tissue; connective tissue; skin; muscle; nervous tissue; blood; lymphoid tissues; respiration; blood vessels; circulation; cardiac cycle; systemic circulation; motor unit.

Second Semester (7 – 12 months)				
Course code & Titles	**Hours**			**Weekly class Hours**
	Theory	**Practical**	**Total**	
AP01OT2C2-Human Physiology - II (Including Applied Physiology)	60	45	105	7

THEORY - (Part II)

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Digestive System	● Introduction: Physiological anatomy and nerve supply of alimentary canal. Enteric nervous system ● Salivary Secretion: Saliva: Composition. Functions. Regulation. Mastication (in brief) ● Swallowing: Definition. Different stages. Functions. ● Stomach: Functions. Gastric juice: Gland, composition, function, regulation. Gastrin: Production, function and regulation. Peptic ulcer. Gastric motility. Gastric emptying. Vomiting. ● Pancreatic Secretion: Composition, production, function. Regulation. ● Liver: Functions of liver. Bile secretion: Composition, functions and regulation. Gall bladder: Functions.	5 Hours

		• Intestine: Succusentericus: Composition, function and regulation of secretion. Intestinal motility and its function and regulation. • Mechanism of Defaecation.	
2.	Renal System	• Introduction: Physiological anatomy. Nephrons – cortical and juxtamedullary. Juxta- glomerular apparatus. Glomerular membrane. Renal blood flow and its regulation. Functions of kidneys. • Mechanism of Urine Formation: Glomerular Filtration: Mechanism of glomerular filtration. GFR – normal value and factors affecting. Renal clearance. Insulin clearance. Creatinine clearance. • Tubular Reabsorption: Reabsorption of Na^+, glucose, HCO^-, urea and water. Filtered load. Renal tubular transport maximum. Glucose clearance: TmG. Renal threshold for glucose. • Tubular Secretion: Secretion of H^+ and K^+. PAH clearance. • Mechanism of concentrating and diluting the Urine: Counter-current mechanism. Regulation of water excretion. Diuresis. Diuretics. • Micturition: Mechanism of micturition. Cystometrogram. Atonic bladder, automatic bladder. • Acid-Base balance (very brief) • Artificial Kidney: Principle of haemodialysis. • Skin and temperature regulation.	8 Hours
3.	Endocrine System	• Introduction: Major endocrine glands. Hormone: classification, mechanism of action. Functions of hormones • Pituitary Gland: Anterior Pituitary and Posterior Pituitary hormones: Secretory cells, action on target cells, regulation of secretion of each hormone. Disorders: Gigantism, Acromegaly, Dwarfism, Diabetes insipidus. Physiology of growth and development: hormonal and other influences. • Pituitary-Hypothalamic Relationship. • Thyroid Gland: Thyroid hormone and calcitonin: secretory cells, synthesis, storage, action and regulation of secretion. Disorders: Myxoedema, Cretinism, Grave's disease. • Parathyroid hormnes: secretory cell, action, regulation of secretion. Disorders: Hypo parathyroidism. Hyper	10 Hours

		thyroidism. Calcium metabolism and its regulation. ● Adrenal Gland: Adrenal Cortex: Secretory cells, synthesis, action, regulation of secretion of Aldosterone, Cortisol and Androgens. Disorders: Addison's disease, Cushing's syndrome, Conn's syndrome, Adrenogenital syndrome. Adrenal Medulla: Secretory cells, action, regulation of secretion of adrenaline and nor adrenaline. Disorders: Phoechromocytoma. ● Endocrine Pancreas: Secretory cells, action, regulation of secretion of insulin and glucagon. Glucose metabolism and its regulation. Disorder: Diabetes mellitus. ● Calcitrol, Thymus and Pineal gland (very brief). ● Local Hormones (briefly)	
4.	Reproductiv e System	● Introduction: Physiological anatomy reproductive organs. Sex determination. Sex differentiation. Disorder ● Male Reproductive System: Functions of testes. Pubertal changes in males. Spermatogenesis. Testosterone: action. Regulation of secretion. Semen. ● Female Reproductive System: Functions of ovaries and uterus. Pubertal changes in females. Oogenesis. Hormones: Oestrogen and progesterone-action. Regulation of secretion. Menstrual Cycle: Phases. Ovarian cycle. Uterine cycle. Hormonal basis. Menarche. Menopause. Pregnancy: Pregnancy tests. Physiological changes during pregnancy. Functions of placenta. Lactation. Contraception methods.	5 Hours
5.	Special Senses	● Vision: Introduction: Functional anatomy of eye ball. Functions of cornea, iris, pupil, aqueous humor – glaucoma, lens – cataract, vitreous humor, rods and cones. Photopic vision. Scotopic vision. ● Visual Pathway and the effects of lesions. ● Refractive Errors: myopia, hypermetropia, presbyopia and astigmatism. ● Visual Reflexes: Accommodation, Pupillary and Light. Visual acuity and Visual field. Light adaptation. Dark adaptation. Color vision – color blindness. Nyctalopia. ● Audition: Physiological anatomy of the ear. Functions of external ear, middle ear and inner ear. Structure of Cochlea and organ of corti. Auditory pathway. Types of Deafness. Tests for hearing. Audiometry.	10 Hours

		• Taste: Taste buds. Primary tastes. Gustatory pathway. • Smell: Olfactory membrane. Olfactory pathway. • Vestibular Apparatus: Crista ampullaris and macula. Functions, Disorders.	
6.	Nervous System	• Introduction: Organisation of CNS – central and peripheral nervous system. Functions of nervous system. Synapse: Functional anatomy, classification, Synaptic transmission. Properties. • Sensory Mechanism: Sensory receptors: function, classification and properties. Sensory pathway: The ascending tracts – Posterior column tracts, lateral spinothalamic tract and the anterior spinothalamic tract – their origin, course, termination and functions. The trigeminal pathway. Sensory cortex. Somatic sensations: crude touch, fine touch, tactile localization, tactile discrimination, stereognosis, vibration sense, kinesthetic sensations. Pain sensation: mechanism of pain. Cutaneous pain –slow and fast pain, hyperalgesia. Deep pain. Visceral pain – referred pain. Gate control theory of pain. Tabes dorsalis, sensory ataxia. • Motor Mechanism: Motor Cortex. Motor pathway: The descending tracts – pyramidal tracts, extrapyramidal tracts – origin, course, termination and functions. Upper motor neuron and lower motor neuron. Paralysis, monoplegia, paraplegia, hemiplegia and quadriplegia. • Reflex Action: components, Bell-Magendie law, classification and Properties. Monosynaptic and polysynaptic reflexes, superficial reflexes, deep reflexes. Stretch reflex– structure of muscle spindle, pathway, higher control and functions. Inverse stretch reflex. Muscle tone – definition, and properties hypotonic, atone and hypertonic. UMNL and LMNL • Spinal cord Lesions: Complete transaction and Hemi section of the spinal cord. f.Cerebellum: Functions. Cerebella ataxia. • Posture and Equilibrium: Postural reflexes – spinal, medullar, midbrain and cerebral reflexes. • Thalamus and Hypothalamus: Nuclei. Functions. Thalamic	20 Hours

		syndrome ● Reticular Formation and Limbic System: Components and Functions. ● Basal Ganglia: Structures included and functions. Parkinson's disease. ● Cerebral Cortex: Lobes. Bradman's areas and their functions. Higher functions of cerebral cortex – learning, memory and speech. ● EEG: Waves and features. Sleep: REM and NREM sleep. ● CSF: Formation, composition, circulation and functions. Lumbar puncture and its significance. Blood brain barrier. Hydrocephalus. ● ANS: Features and actions of parasympathetic and sympathetic nervous system.	
7.	Physiology of Exercise	● Effects of acute and chronic exercise on ▪ O2 transport ▪ Muscle strength/power/endurance ▪ B.M.R. /R.Q. ▪ Hormonal and metabolic effect ▪ Cardiovascular system ▪ Respiratory system ▪ Body fluids and electrolyte ● Effect of gravity / altitude /acceleration / pressure on physical parameters ● Physiology of Age	15 Hours
8.	Applied Physiology	More detailed study of the physiology and practical applications of the following selected topics with emphasis on aspects, which should help in understanding the nature and treatment of common clinical situations of interest in Occupational Therapy ● Muscles and Nervous System Functions ▪ Peripheral nervous system, neuromuscular transmission, Types of nerve fibers. ▪ Action potential, Strength-duration curve, ECG, EMG, VEP, NCV ▪ Degeneration and regeneration of nerve, Reactions of enervations. ▪ Synaptic transmission, Stretch reflex-Mechanism and factors affecting it. ▪ Posture, Balance and Equilibrium/Coordination	7 Hours

		of voluntary movement ▪ Voluntary motor action, clones, Rigidity, Discordination, ▪ Special senses- Vision, taste, hearing, vestibular, Olfaction ▪ Sympathetic and Parasympathetic regulation, Thermoregulation. ● Metabolic Functions ▪ Diabetes Mellitus, ▪ Physiological basis of Peptic Ulcer, ▪ Jaundice, ▪ GIT disorders and Dietary fiber, ▪ Thyroid functions, ● Vitamins deficiency	

PRACTICAL

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Clinical Examination	● Examination of Sensory system ● Examination of reflexes ● Examination of cranial nerves	10 Hours
2.	Amphibian Experiments – Demonstration and Dry charts Explanation.	● Instruments used for frog experiments. Kymograph, heart liver, Muscle trough, stimulator. ● Simple muscle curve. ● Effect of increasing the strength of the stimuli ● Effect of temperature on muscle contraction. ● Effect of two successive stimuli. ● Effect of Fatigue. ● Effect of load on muscle contraction ● Genesis of tetanus and clonus. ● Velocity of impulse transmission. ● Normal cardiogram of amphibian heart. ● Properties of Cardiac muscle ● Effect of temperature on cardiogram.	15 Hours
3.	Recommended Demonstrations	● Spirometry ● Artificial Respiration ● ECG ● Perimetry ● Mosso's Ergometry	5 Hours

Textbooks recommended:

1) Textbook of medical physiology – Guyton Arthur
2) Concise medical physiology – Chaudhuri Sujit K.
3) Human Physiology – Chatterjee C.C.
4) Textbook of practical Physiology – Ranade.
5) Text of Physiology – A.K.Jain.
6) Basics of Medical physiology- Venkatesh D &Sudhakar HH
7) Manipal Manual of Physiology – Prof. C N Chandrashekara
8) Review of Medical Physiology – Ganong William F.
9) Physiological basis of Medical practice – Best & Taylor

AP01OT2C3:BIOCHEMISTRY

Second Semester (7 – 12 months)				
Course code &Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT2C3- Biochemistry	45	15	60	4

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Introduction to biochemistry and its scope		1 Hour
2.	pH, acids, bases, buffers		1 Hour
3.	Chemistry of Carbohydrates	● Definition, classification, structures (without isomerism), properties, ● Functions and sources of Monosaccharides ● Disaccharides, ● Oligosaccharides and Polysaccharides. ● Glycosaminoglycans (mucopolysaccharides) – General properties, types, tissues distribution functions.	3 Hours
4.	Chemistry of Amino acids, Peptides and Proteins	● *Amino acid:* definition, classification, structure, properties and functions ● Biologically important peptides *Protein:* definition, classification, structural organization (in brief), denaturation (in brief) ● Collagen and elastin – structure, function and distribution (in brief)	3 Hours
5.	Chemistry of Lipids	● Definition, classification, properties and functions. ● Fatty Acids, triacylglycerol, compound lipids and cholesterol. ● Lipoproteins – classification, composition and functions. Normal blood levels of lipids, atherosclerosis, and myocardial infarction	3 Hours
6.	Chemistry of Nucleotide and Nucleic acid	● Nucleotide chemistry: Nucleotide structure; functions of free nucleotides. ● Nucleic acid (DNA and RNA) chemistry: ● Difference between DNA and RNA, Structure of DNA (Watson and Crick model), Functions of DNA. ● Structure and functions of tRNA, rRNA, mRNA, snRNA.	2 Hours
7.	Enzymes and Clinical Enzymology	● Definition, active site, specificity, cofactor (coenzyme, activator). ● Classification with examples. ● Factors effecting enzyme activity, Enzyme	3 Hours

		inhibition and significance, Isoenzymes, Diagnostic enzymes	
8.	Cells and sub cellular structures	• Introduction, Cell structure, Cell membrane structure and function, various types of transport. • Intracellular organelles and their functions	2 Hours
9.	Digestion and Absorption	• General characteristics of digestion and absorption, Digestion and absorption of carbohydrates, proteins and lipids. • Lactose intolerance	3 Hours
10.	Intermediary Metabolism	• Introduction to metabolism, High energy compounds	1 Hour
11.	Carbohydrate Metabolism	• Introduction • Reactions, energetics (if any) and functions of: Glycolysis (Rappaport Leubering cycle included), Citric acid cycle (anaplerosis not included), Glycogen metabolism [Glycogen • Storage disorders, Type 1 to 4 (Type 1 in detail) included], Gluconeogenesis, Cori cycle.	4Hours
12.	Lipid Metabolism	• Beta oxidation of fatty acids and its energetics • Ketone body formation, utilization and Ketoacidosis • Outlines of synthesis of palmitic acid, triglycerides and lipolysis	3 Hours
13.	Regulation of Blood glucose, Hormonal regulation of blood glucose, Diabetes Mellitus		1 Hour
14.	Amino acid and Protein Metabolism	• Catabolism of amino acids – Introduction, transamination, deamination, fate of ammonia, transport of ammonia, urea cycle • List of biologically important compounds formed from amino acids and their functions - glycine, methionine, phenylalanine and tyrosine	3 Hours
15.	Liver function tests, renal function tests	• Liver function tests (exclude bromsulphthalein excretion test, galactose tolerance test and Hippuric acid test) • Renal Function Test – clearance tests (creatinine clearance test)	2 Hours
16.	Acid-Base balance	• Buffer systems of the body • Role of lungs and kidneys in acid base balance	2 Hours

		• Acid base imbalance	
17.	Water balance	• Water distribution in the body, Body water, water turnover, Regulation of water balance: role of ADH and thirst centre	1 Hour
18.	Electrolyte balance	• Osmolarity. Distribution of electrolytes • Electrolyte balance: Role of aldosterone, rennin angiotensin system and ANF 15.	1 Hour
19.	Vitamins	• Definition, classification according to solubility, • Individual vitamins – chemistry, sources, coenzyme forms, functions, RDA, digestion, absorption and transport, deficiency and toxicity	7 Hours
20	Mineral Metabolism	• Introduction and classification of minerals • Sources, RDA, digestion, absorption, transport, excretion, functions, disorder of individual minerals - calcium, phosphate and iron	2 Hours
21.	Hormone Action	• Definition, classification, Mechanism of hormone action. Receptors, signal transduction, second messengers and cell function	2 Hours
22.	Nutrition	• Introduction, Importance of nutrition, calorific values • Respiratory quotient – Definition, and its significance • Energy requirement of a person – i. *Basal metabolic rate*: Definition, Normal values, factor affecting BMR ii. *Special dynamic action* of food iii. *Physical activities* - Energy expenditure for various activities. Calculation of energy requirement of a person iv. Role of carbohydrates in diet (including dietary fibers) v. Role of lipids in diet vi. Role of proteins in diet (including nitrogen balance and quality of food proteins – biological value, net protein utilization) vii. Balanced diet viii. Protein energy malnutrition	7 Hours
23.	Clinical Biochemistry	• Normal levels in blood and clinical significance of glucose, urea, uric acid, creatinine, calcium, phosphates, pH, bicarbonate and electrolytes (sodium, potassium and chloride).	1 Hour
24.	Muscle Contraction	• Contractile elements in muscle, briefly on the process of muscle contraction, Energy for muscle contraction	2 Hours

Textbooks recommended:

1. MURRAY [ROBERT KK], Harper's Biochemistry Ed 24, Prentice Hall. 1996, p925, Rs. 650/-
2. RAMAKRISHNA [S], PRASANNA [KG], RAJAN [R], Textbook of Medical Biochemistry, Ed 1, orient Langman, Bombay 1980, p717.
3. VASUDEVAN [DM] and SREE KUMARI [S], Textbook of Biochemistry for Medical students, Ed 1, Jaypee Brothers, New Delhi, 1995, p637, Rs.175/-.
4. DAS [Debajyothi], Biochemistry, Ed. 7, Academic Publishers Calcutta, 1992, p648, Rs. 175/-.
5. PRASAD RM, RM's Physiotherapy Textbook Series, Textbook of Biochemistry for Bachelor of Physiotherapy First Edition, RM Publications, Mangalore.
6. LEHININGER [Albert] et. al., Principles of Biochemistry, Ed. 3, LBS Publishers, Delhi, 1993, p1143, Rs.795/-
7. ORTEN [James M] and NEUHAUS [OHO.W]. Human Biochemistry, Ed. 9, Mosby, St. Louis,1975 p994.
8. Strayer [LUBERT], Biochemistry, Ed. 4, WH, Freeman & Co., Ny.1995, p1064, $49.95
9. DEVLIN [Thomas M], Biochemistry with Clinical Correlations, Ed. 4, Willey Libs, Ny 1997, p1186, $30.95.

AP01OT2C4: BASICS OF OCCUPATIONAL THERAPY ASSESSMENT

Course description: This course provides an outline of the Occupational Therapy evaluation process. The student is also introduced to Occupational Diagnosis based on Occupational Performance. It also includes the basic evaluation like Range of Motion, Muscle Strength and sensation. The course also provides the student with practical (lab) experience on some of the basic Occupational Therapy Assessment components.

Course objectives: On completion of this course the student will understand the purpose and method of evaluation, diagnose conditions based on Occupational performance, understand the basic principles and procedure for evaluation of Range of Motion, Muscle Testing on normal subjects and know the need for palpation in Occupational Therapy practice and the skills required for palpation of different tissues. The student will learn to assess Range of Motion of all joints of the human body, evaluate gross muscle strength by manual method; on normal subjects and identity, human tissues like muscles, nerves, bony structures noninvasively through palpation.

Theory: 40 hours

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	OT evaluation & assessment	● Purpose of evaluation ● Process of evaluation ● Methods of evaluation	3 Hours
2.	Evaluation of Joint Range of Motion (R.O.M). (Upper Limb, Lower Limb, Spine & TM joints)	● Principles and procedures in joint measurement. ● Definitions of terms in joint measurement. ● Methods of joint measurements. ● Functional ROM ● Total Active motion ● Indications and contraindications of recording. Practicum/Practical/ Labs: Demonstration, Hands on practice on peers, models under supervision, interactive sessions following clinical and/or simulated audio-visual presentations. ● Demonstration: i. Model/Peers positioning. ii. Identification of surface landmarks for goniometry. iii. Goniometric placements. iv. Recording measurements. v. With goniometry. AROM/PROM. vi. Assessing functional ROM in tasks. vii. Measuring Fixed Flexion Deformity (FFD) and extension deformity.	14 Hours

		viii. Identification of end feels. ● Case writing with ROM	
3.	Evaluation of Muscle Strength	● Definition of muscle power and strength ● Principles of muscle testing ● Indications &contraindications of muscle testing. ● Gross muscle testing in normal and clinical conditions. (Muscles of upper extremity & lower extremity) ● Precautions in manual muscle testing Practicum / Practical / Labs: ● Demonstrations: i. Simulated case presentations on models and clinical diagnosis using audio visuals, practice on peers, models under supervision. ii. Learn & perform gross muscle testing on normal subjects in upper & lower extremities	14 Hours
4.	OT diagnosis	● Definition of diagnosis, components, criteria. ● Occupational performance Diagnosis and framework. ● Creating a classification system, benefits of classification system, challenges for creating a classification system. ● Different levels of Occupational Therapy diagnosis.	5 Hours
5.	History taking		2Hours
6.	Surface anatomy		3Hours

Practicals 40 hours

1. Assessment of ROM (On normal subjects) 20HRS
2. Gross muscle testing (On Normal subjects) 20HRS
3. Surface anatomy

AP01OT2P1: BASICS OF BIOENGINEERING

Introduction to Bio-engineering. Its application in the fabrication of assistive and adaptive technology; and virtual Introduction to Bio-engineering.

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Design and Fabrication Demonstrations, Simulated presentations using audio-visuals, interactive	● Care and handling of Tools and Equipment: i. Tools: - Files, Pliers, Saws, scissors, Chisels,	30 Hours

	sessions	Hammers, Thermoplastic cutter, Metal cutter, Scale and tapes Types and components ii. Equipments:- Sewing machine, Heat bath, Heat Gun, Drill Machine, Bench vise ● Splinting materials: - i. Thermoplastics and fabricating materials, padding materials, harnessing materials, securing/fixing materials, adhesives etc. ii. Identification of material. therapeutic values related to tools	
2.	Explain and apply general principles of splinting while designing and paper pattern of common Upper /Lower Extremity orthotics	● Indications and contraindications of splinting: Upper /Lower Extremity Orthosis viz. i. Resting hand Splint ii. Short Opponens Splint iii. Dynamic Extension Outrigger splint iv. Finger gutter Splint v. Radial Bar Cock Up ● Explain and apply general principles of splinting while designing and fabrication of common Upper /Lower Extremity orthotics ● Indications and contraindications of splinting	

Textbooks Recommended:

1. Occupational Therapy Willard & Spackman's
2. An Introduction to Occupational Therapy by A. Turner
3. Occupational Therapy: Practice skills for Physical Dysfunction by L.V.

4. Pedretti Occupational Therapy for Physical Dysfunction by C.A. Trombly.
5. Closed functional treatment of fractures by A Sarmiento, L. Latta
6. Hand & upper extremity splinting: Principles & methods by E.E. Fess, C. A. Phillips, Gettle K.S., & Jansonj.

COURSE AND DISTRIBUTION OF MARKS FOR UNIVERSITY EXAMINATION

Second Semester (7 – 12 months)								
Sl. No.	Courses	**Theory**				**Practical**		Total
		Written		Viva-voce	IA	Practical	IA	
		Time	Max. Marks	Max. Marks.	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1.	**AP01OT2C1** Human Anatomy-II (Including Applied Anatomy)	3	100	30	20	40	10	200
2	**AP01OT2C2** Human Physiology –II (Including Applied Physiology)	3	100	30	20	40	10	200
3	**AP01OT2C3** Biochemistry	3	80	--	20	--	--	100
4	**AP01OT2C4** Basics of occupational therapy assessment	3	80	--	20	80	20	100
	AP01OT2P1 Basics of bioengineering			20		20	10	50

PRACTICAL EXAMINATION: AP01OT2C4

Total marks 100, University Exam out of 80.
Internal Assessment: One exam at the end of each term.
Average of total marks obtained to be considered for Internal Assessment.
The distribution of marks for practical exam at University to be conducted out of 80 marks

Marks Distribution
A. Range of Motion 20 marks (normal subject)
B. Group Muscle Testing 20 marks (normal subject)

C. Activity Analysis 20 marks
D. Viva Voce 20 marks

PRACTICAL EXAMINATION: AP01OT2P1

Marks distribution-
Paper pattern – 20 Marks
Viva – 20 Marks

SEMESTER-III

AP01OT3C1: PATHOLOGY

Course description: This course follows the basic course of Anatomy, Physiology and Biochemistry and it forms a vital link between preclinical courses and clinical courses. Pathology involves the study of causes and mechanisms of diseases. The knowledge and understanding of Pathology of diseases is essential for a Occupational therapist to institute appropriate treatment modalities or suggest preventive measures to the patient.

Third Semester (13-18 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT3C1- Pathology	45	15	60	4

THEORY

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	General Pathology a. Introduction to Pathology b. Cell injuries	● Aetiology and pathogenesis with a brief recall of important aspects of normal cell structure. ● Reversible cell injury: Types, Sequential changes, Cellular swellings, vacuolation, Hyaline changes, Mucoid changes. Irreversible cell injury: Types of Necrosis & Gangrene, Autolysis. Pathologic calcification: Dystrophic and Metastatic. ● Intracellular accumulations - Fatty changes, Protein accumulations, Glycogen accumulations, Pigments - Melanin / Hemosiderin. ● Extra cellular accumulations: Amyloidosis - Classification, Pathogenesis, Pathology including special stains.	5 Hours
2.	Inflammation and Repair	● **Acute inflammation:** Features, causes, vascular and cellular events. Inflammatory cells and Mediators. ● **Chronic inflammation:** Causes, Types, Classification nonspecific and granulomatous with examples. ● **Repair:** Wound healing by primary and secondary union, factors promoting and	4 Hours

		delaying the process. Healing in specific site including bone healing.	
3.	Circulatory Disturbances	● Hyperemia/Ischemia and Haemorrhage ● Edema: Pathogenesis and types. ● Chronic venous congestion: Lung, Liver, Spleen, Systemic Pathology ● Thrombosis and Embolism: Formation, Fate and Effects. ● Infarction: Types, Common sites. ● Shock: Pathogenesis, types, morphologic changes	4 Hours
4.	Growth Disturbances and Neoplasia	● Atrophy, Hypertrophy, Hyperplasia, Aplasia, Hypoplasia, Metaplasia, Malformation, Agenesis, Dysplasia. ● Precancerous lesions. ● Neoplasia: Definition, classification, Biological behavior: Benign and Malignant, Carcinoma and Sarcoma. ● Malignant Neoplasia: Grades and Stages, Local & Distant spread. ● Carcinogenesis: Environmental carcinogens, chemical, viral, occupational. Heredity and cellular ontogenesis and prevention of cancer. ● Benign & Malignant epithelial tumours Eg. Squamous papilloma, Squamous cell carcinoma, malignant melanoma. Benign & Malignant mesenchymal tumours Eg: Fibroma, Lipoma, Neurofibroma, Fibrosarcoma, Liposarcoma, Rhabdo-myosarcoma, Teratoma.	4 Hours
5.	Nutritional Disorders	● Protein energy malnutrition: Marasmus, Kwashiorkor, and Vitamin deficiency disorders, classification with specific examples.	1 Hour
6.	Genetic Disorders	● Basic concepts of genetic disorders and some common examples and congenital malformation. ● Systemic pathology	1 Hour

7.	Hematology	• Constituents of blood and bone marrow, Regulation of hematopoiesis. Anemia: Classification, clinical features & lab diagnosis. • Nutritional anemias: Iron deficiency anemia, Folic acid, Vit. B 12 deficiency anemia including pernicious anemia. Hemolytic Anaemias: Classification and Investigations. Hereditary hemolytic anaemias: Thalessemia, Sickle cell anemia, Spherocytosis and Enzyme deficiencies. Acquired hemolytic anaemiasi. Alloimmune, Autoimmune ii. Drug induced, Microangiopathic Pancytopenia - Aplastic anemia. • Hemostatic disorders, Vascular and Platelet disorders & lab diagnosis. Coagulopathies - (i) Inherited (ii) Acquired with lab diagnosis. • Leukocytic disorders: Leukocytosis, Leukopenis, Leukemoidreaction. • Leukemia: Classification, clinical manifestation, pathology and Diagnosis. Multiple myeloma and disproteinemias. • Blood transfusion; Grouping and cross matching, untoward reactions, transmissible infections including HIV & hepatitis, Blood-components & plasma-pheresis.	4 Hours
8.	Respiratory System	• Pneumonia, Bronchitis, Bronchiectasis, Asthma, Tuberculosis, Carcinoma of lungs, Occupational lung diseases	3 Hours
9.	Cardiovascular Pathology	• Congenital Heart disease: Atrial Septal Defect, Ventricular septal defect, Fallot's tetralogy, Patent Ductus Arteriosus. • Endocarditis. • Rheumatic Heart disease. • Vascular diseases: Atherosclerosis, monckeberg's medial calcification,	2 Hours

		Aneurysm and Arthritis and Tumours of Blood vessels. ● Ischemic heart Disease: Myocardial infarction. ● Hypertension and hypertensive heart Disease.	
10.	Alimentary tract	● Oral Pathology: Ulcers, leukoplakia, Carcinoma, oral cavity diseases and tumour of salivary gland & esophagus and precancerous lesions, Esophagus inflammatory, functional disorders and tumours. Stomach: Gastritis, Ulcer &Tumours. ● Tumours and tumour like condition of the small and large Intestine: Polyps, carcinoid, carcinoma, Lymphoma. ● Pancreatitis and pancreatic tumours : i) Exocrine, ii) Endocrine ● Salivary gland tumours : Mixed, Warthin's	3 Hours
11.	Hepato – biliary pathology	● Jaundice Types, aetio-pathogenesis and diagnosis. ● Hepatitis: Acute, Chronic, neonatal. ● Alcoholic liver disease Cirrhosis: Post necrotic, Alcoholic, Metabolic and Portal hypertension Liver abscesses; Pyogenic, parasitic and Amoebic. Tumors of Liver	2 Hours
12.	Lymphatic System	● Diseases of the gall bladder: Cholecystitis, Cholelithiasis, Carcinoma. ● Lymphadenitis - Nonspecific and granulomatous ● Causes of Lymph Node enlargements. Reactive Hyperplasia, Primary Tumours - Hodgkin's and Non Hodgkin’s Lymphomas, Metastatic Tumours. ● Causes of Splendid Enlargements.	2 Hours
13.	Musculoskeletal System	● Osteomyelitis, acute, chronic, Tuberculous, myeloma ● Metabolic diseases: Rickets/Osteomalacia, osteoporosis, Hyperparathyroidism, Paget's disease. ● Tumours Classification: Benign, Malignant, Metastatic and synovial sarcoma. ● Arthritis: Suppurative, Rheumatoid. Osteoarthritis,	3 Hours

		Gout, Tuberculous.	
14.	Endocrine pathology	● Diabetes Mellitus: Types, Pathogenesis, Pathology, Laboratory diagnosis Non-neoplastic lesions of Thyroid: Iodine deficiency goiter, autoimmune Thyroiditis, Thyrotoxicosis, myxedema, Hashimoto's thyroiditis. ● Tumours of Thyroid: Adenoma, Carcinoma: Papillary, Follicular, Medullary, Anaplastic. ● Adrenal diseases: cortical hyperplasia, atrophy, tuberculosis, tumours of cortex and medulla.	3 Hours
15.	Neuropathology	● Inflammations and Infections: TB Meningitis, Pyogenic Meningitis, viral meningitis and Brain Abscess ● Tuberculosis, Cysticercoids CNS Tumors, Astrocytoma, Neuroblastoma, Meningioma, Medulloblastoma	3 Hours
16.	Dermatopathology	● Skin tumors: Squamos cell, carcinoma, Basal cell carcinoma, Melanoma	1 Hour

PRACTICAL

Demonstration of Slides – The students may be demonstrated the common his to pathological, hematological and cytological slides and specimens and charts and their interpretations.

Textbooks recommended:

1. Textbook of pathology: Harshmohan
2. General systemic pathology: Churchill Livingstone
3. Textbook of Pathology: Robbins

AP01OT3C2: MICROBIOLOGY

Course description: This course follows the basic courses i.e. Anatomy, Physiology and Biochemistry and it forms a vital link between preclinical courses and clinical courses. Microbiology involves the study of common organisms causing diseases including nosocomial infections and precautionary measures to protect one from acquiring infections.

Third Semester (13-18 months)				
Course code & Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT3C2- Microbiology	45	15	60	4

THEORY

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	General Microbiology	● Definitions: infections, parasite, host, vector, fomite, contagious disease, infectious disease, epidemic, endemic, pandemic, Zoonosis, Epizootic, Attack rate. ● Normal flora of the human body. ● Routes of infection and spread; endogenous and exogenous infections; source at reservoir of infections. ● Bacterial cell. Morphology limited to recognizing bacteria in clinical samples Shape, motility and arrangement. Structures, which are virulence,	5 Hours

		associated. ● Physiology: Essentials of bacterial growth requirements. ● Sterilization, disinfection and universal precautions in relation to patient care and disease prevention. Definition of asepsis, sterilization, disinfection. ● Antimicrobials: Mode of action, interpretation of susceptibility tests, resistance spectrum of activity.	
2.	Immunology	● Basic principles of immunity immunobiology: lymphoid organs and tissues. ● Antigen, Antibodies, antigen and antibody reactions with relevance to pathogenesis and serological diagnosis. ● Humoral immunity and its role in immunity Cell mediated immunity and its role in immunity. ● Immunology of hypersensitivity, measuring immune functions. Auto Immunity.	5 Hours
3.	Bacteriology	● To be considered under the following headings i. Morphology, classification according to pathogenicity, mode of transmission, methods of prevention, collection and transport of samples for laboratory diagnosis, interpretation of laboratory reports ii. Staphylococci, iii. Streptococci and Pneumococci, iv. Mycobacteria: Tuberculosis, M.leprae, atypical mycobacteria, v. E coli & Salmonella. vi. Vibrois: V. cholerae and other medically important vibrios, Campylobacters and Helicobacters, vii. Pseudomonas, viii. Bacillus anthracis, ix. Sporing and non-sporing anaerobes: Clostridia, Bacteroides and Fusobacteria	12 Hours
4.	General Virology	● General properties: Basic structure and broad classification of viruses. ● Pathogenesis and pathology of viral infections. ● Immunity and prophylaxis of viral diseases.	8 Hours

		● Principles of laboratory diagnosis of viral diseases. ● List of commonly used antiviral agents	
5.	Mycology	● General properties of fungi. ● Classification based on disease: superficial, subcutaneous, deep mycosel opportunistic infections including Mycotoxins, systemic mycoses. ● General principles of fungal diagnosis, Rapid diagnosis. ● Method of collection of samples. ● Antifungal agents	3 Hours
6.	Clinical/Applied Microbiology	● Streptococcal infections: Rheumatic fever and Rheumatic heart disease, ● Meningitis. ● Tuberculosis, ● Pyrexia of unknown origin, ● leprosy, ● Sexually transmitted diseases, ● Poliomyelitis, ● Hepatitis, ● Acute-respiratory infections, ● Central nervous System infections, ● Urinary tract infections, ● Pelvic inflammatory disease, ● Wound infection, ● Opportunistic infections, ● HIV infection, ● Malaria, ● Filariasis, ● Zoonotic diseases.	12 Hours

PRACTICAL

1. Demonstration of Microscopes and its uses
2. Principles, uses and demonstration of common sterilization equipment
3. Demonstration of common culture media
4. Demonstration of motility by hanging drops method
5. Demonstration of Gram Stain, ZN Stain
6. Demonstration of Serological test: ELISA
7. Demonstration of Fungus

Textbooks recommended:

Short textbook of Medical Microbiology by Sathish Gupta

1. Textbook of Microbiology by Jayaram Panicker
2. Microbiology & Parasitology by Rajeshwar Reddy
3. Textbook of Microbiology by Anantha Narayanan
4. Microbiology by Baveja
5. Textbook of microbiology by Chakraborthy

AP01OT3C3: HUMAN LIFE DEVELOPMENT

SI. NO.	AREAS	CONTENT	HOURS
1	Principles of Development	● Definition & importance of knowledge base of human development. ● Aspects of human development: physical, motor, sensory, cognitive, emotional, cultural and social. ● Factors influencing human growth & development: biological, environmental and inherited.	15
2	Theoretical Foundations	● Learning Theories: i. Behavioral Theory, ii. Social learning theory; iii. Maturation theory of Arnold, Gesell, iv. Psychoanalytic theory of Sigmund Freud, v. Erik Erikson theory vi. Cognitive Theory of Jean Piaget; vii. Humanistic self-theory viii. Ethology theory	15
3	Specific Development Areas	● Physical/motor development: physical development, gross and fine	15

		motor development ● Sensory development ● Emotional development & theories of personality ● Social development ● Perceptual & cognitive development ● Cultural development ● Play in child development	
4	Stage specific issues	● Prenatal development ● Early childhood ● Middle childhood ● Adolescence ● Adulthood ● Late adulthood	15
5	Theories of Aging	● Health & health context in aging, biological, psycho physiological & psychological theories of aging	15

AP01OT3C4: BIOMECHANICS & KINESIOLOGY

Course description: The course introduces to the general principles of human development across all age spans and details on the specific areas of development and their theories behind them.

Course objectives: The completion of this course the student will know the general principles of development, the theories of development, normal stages of development in all specific areas, and distinguish abnormal development from normal in all areas. This will improve the students' sensitivity to developmental issues and special considerations of clients in occupational therapy assessment and treatment.

SR. NO.	AREAS	CONTENT	HOURS
1	Introduction to biomechanics	● General concepts Statics, -dynamics Kinematics, kinetics. ● Definition. ● Applications of biomechanics in occupational therapy.	13
2	Joint structure & function	● Joint classification. ● Applied anatomy of articulating surfaces. ● Soft tissue structures related to joints, joint capsule, Muscles and ligaments. ● Mechanics of the bone and soft tissue components involved during static, dynamic conditions of the joints. ● Alteration in mechanics following injury &	13

		pathological states.	
3	The upper extremity, (shoulder and scapulahumeral complex, Elbow & radio-ulnar complex, Wrist and hand complex)	• Joint classification. • Applied anatomy of articulating surfaces. • Soft tissue structures related to joints: joint capsule, muscles and ligaments. • Mechanics of the bone and soft tissue components involved during static, dynamic conditions of the joints. • Alteration in mechanics following injury & pathological states	13
4	The lower extremity	• Hip complex and pelvic complex. • Knee joint and patellar complex. • Ankle and foot complex • Joint classification, • Applied anatomy of articulating surfaces. • Soft tissue structures related to joints: joint capsule, muscles and ligaments. • Mechanics of the bone and soft tissue components involved during static, dynamic conditions of the joints. • Alteration in mechanics following injury & pathological states.	13
5	Gaits	• Normal and pathological gaits. • Normal human gait cycle parameters. • Myokinetics and Kinematics of gait. • Stair gait. • Common gait deviations and analysis. • Types of crutch and cane gaits. • Preparatory exercises for crutch and cane walking	14
6	Spine	• General structure and function of spine. • Muscles of vertebral column. • Temporomandibular Joint: General structure and function of Temporomandibular joint. • Articular surfaces capsule, muscles and movement. Biting, chewing, articulation, reduced ROM, strength.	3
7	Posture and balance	• Definition of normal posture. • Anatomical posture. • Define Abnormal posture. • Define Anterior, posterior, lateral deviations with respect to normal alignment of spine. • Define anterior, posterior lateral tilts, pelvic obliquity.	3

		• Deformities and abnormal posturing in lower and upper body that affect postural mechanics. • Factors Affecting Posture: Spinal alignment. Pelvic alignment. • Factors affecting seating. • Musculoskeletal Tone. • Balance: Definition. Static and dynamic balance. Balance in sitting and standing. Balance rating with respect to static and dynamic states. Administration of a standard scale (berg balance scale)	
8	Bed Mobility and Transfers	• Precursor to transfers and mobility. • Bed mobility for preparation of transfers. • Transfers: Definition. Types. • Guidelines for using proper body mechanics. Principles of body positioning. • Stand pivot transfer. • Sliding board transfer. • Bent pivot transfer. • Dependent transfers.	3

Textbooks Recommended:

1. Biomechanics- Problem Solving for Functional Activity; Susan L Roberts, Sharon A Falkenburg .
2. Kinesiology for Occupational Therapy - Melinda Rybski
3. Muscles, Nerve and Movement - Kinesiology in Daily Living , Second Edition - Barbara Tyldesley, June Grieve
4. Kinesiology- Movement in the Coniext of Activity, Second Edition - David Paul Greene, Susan L. Robert Joint Structure and Function- A Con grehensive Analysis, Fourth Edition - Pamela K. Levangie. C: nthia C. Norki

AP01OT3S1: INTRODUCTION TO QUALITY AND PATIENT SAFETY

Course description: This course is to help students understand the basic concepts of quality in health Care and develop skills to implement sustainable quality assurance program in the health system. The course includes teaching NABH guidelines, Basic Life Support, management of biomedical waste, infection control & prevention, antibiotic resistance and disaster management.

Third Semester (13-18 months)				
Course code &Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
Foundation course – Internal examination				
AP01OT 3S1- Introduction to quality and patient safety (Including Emergency care, BLS, Biomedical waste management, Infection prevention and control, etc)	20	30	50	3

SR. NO.	AREAS	CONTENT
1.	Quality assurance and management	● The objective of the course is to help students understand the basic concepts of quality in health Care and develop skills to implement sustainable quality assurance program in the health system i. Concepts of Quality of Care ii. Quality Improvement Approaches iii. Standards and Norms iv. Quality Improvement Tools v. Introduction to NABH guidelines
2.	Basics of emergency care and life support skills	● Basic life support (BLS) is the foundation for saving lives following cardiac arrest. Fundamental aspects of BLS include immediate recognition of sudden cardiac arrest (SCA) and activation of the emergency response system, early cardiopulmonary resuscitation (CPR), and rapid defibrillation with an automated external defibrillator (AED). Initial recognition and response to heart attack and stroke are also considered part of BLS. The student is also expected to learn about basic emergency care including first aid and triage. Topics to be covered under the course are as follows: i. Vital signs and primary assessment ii. Basic emergency care – first aid and triage iii. Ventilations including use of bag-valve-masks (BVMs) iv. Choking, rescue breathing methods v. One- and Two-rescuer CPR vi. Using an AED (Automated external defibrillator). vii. Managing an emergency including moving a patient

		● At the end of this topic, focus should be to teach the students to perform the maneuvers in simulation lab and to test their skills with focus on airways management and chest compressions. At the end of the foundation course, each student should be able to perform and execute/operate on the above-mentioned modalities.
3.	Bio medical waste management and environment safety	● The aim of this section will be to help prevent harm to workers, property, the environment and the general public. Topics to be covered under the course are as follows: i. Definition of Biomedical Waste ii. Waste minimization iii. BMW – Segregation, collection, transportation, treatment and disposal (including color coding) iv. Liquid BMW, Radioactive waste, Metals / Chemicals / Drug waste v. BMW Management & methods of disinfection vi. Modern technology for handling BMW vii. Use of Personal protective equipment (PPE) viii. Monitoring & controlling of cross infection (Protective devices)
4.	Infection prevention and control	● The objective of this section will be to provide a broad understanding of the core course areas of infection prevention and control and to equip AHPs with the fundamental skills required to reduce the incidence of hospital acquired infections and improve health outcomes. Concepts taught should include – i. Evidence-based infection control principles and practices [such as sterilization, disinfection, effective hand hygiene and use of Personal protective equipment (PPE)], ii. Prevention & control of common healthcare associated infections, iii. Components of an effective infection control program, and iv. Guidelines (NABH and JCI) for Hospital Infection Control
5.	Antibiotic Resistance	● History of Antibiotics ● How Resistance Happens and Spreads ● Types of resistance- Intrinsic, Acquired, Passive ● Trends in Drug Resistance ● Actions to Fight Resistance

		● Bacterial persistence ● Antibiotic sensitivity ● Consequences of antibiotic resistance ● Antimicrobial Stewardship- Barriers and opportunities, Tools and models in hospitals
6.	Disaster preparedness and management	● The objective of this section will be to provide knowledge on the principles of on-site disaster management. Concepts to be taught should include- i. Fundamentals of emergency management, ii. Psychological impact management, iii. Resource management, iv. Preparedness and risk reduction, v. Key response functions (including public health, logistics and governance, recovery, rehabilitation and reconstruction), information management, incident command and institutional mechanisms

Third Semester (13– 18 months)				
Sl.	Courses	**Theory**	**Practical**	Total

No		Written		IA	Viva	Practical	IA	
		Time	Max. Marks	Max. Marks.	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1.	**AP01OT3C1** **Section-A** Pathology	3	40	--	10	--	--	100
	AP01OT3C2 **Section-B** Microbiology		40	--	10	--	--	
2	**AP01OT3C3** Human life Development	3	80	20		--	--	100
3	**AP01OT3C4** Biomechanics & kinesiology	3	80	20	20	60	20	200

COURSE AND DISTRIBUTION OF MARKS FOR UNIVERSITY EXAMINATION

Practical Exam Pattern- AP01OT3C4

Marks Distribution

Abnormal Gait -40 Marks

Tools Identification- 20 Marks

Viva- 20 Marks

SEMESTER-IV

AP01OT4C3: COMMUNITY MEDICINE

Course Description: This course follows the basic science courses to provide the knowledge about conditions the therapist would encounter in their practice in the community.

Fourth Semester (19-24 months)				
Course code & Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT4C3- Community Medicine	60	-	60	3

SR. NO.	**AREAS**	**CONTENT**	**DIDACTIC HOURS**
1.	Health and Disease	• Definitions, • Concepts, • Dimensions and Indicators of Health, • Concept of well-being, • Spectrum and Determinants of Health, • Concept and natural history of Disease, • Concepts of disease control and prevention, • Modes of Intervention, Population Medicine, • The role of socio-economic and cultural environment in health and disease.	5 hours
2.	Epidemiology, definition and scope. Principles of Epidemiology and	• Components and Aims, • Basic measurements, • Methods, • Uses of Epidemiology, • Infectious disease	7 hours

	Epidemiological methods	epidemiology, Dynamics and modes of disease transmission, ● Host defenses and Immunizing agents, ● Hazards of Immunization, Disease prevention and control, Disinfection. ● Screening for Disease: Concept of screening, ● Aims and Objectives, ● Uses and types of screening	
3.	Epidemiology of communicable disease	● Respiratory infections ● Intestinal infections, ● Arthropod-borne infections, ● Zoonoses, ● Surface infections, ● Hospital acquired infections Epidemiology of chronic non-communicable diseases and conditions: i. Cardio vascular diseases: Coronary heart disease, Hypertension, Stroke, Rheumatic heart disease, ii. Cancer, iii. Diabetes, iv. 0besity, v. Blindness, vi. Accidents and Injuries	7 hours
4.	Public health administration	● An overview of the health administration set up at Central and state levels.	4 hours

		• The national health programme-highlighting the role of social, economic and cultural factors in the implementation of the national programmes. • Health problems of vulnerable groups- pregnant and lactating women, infants and pre-school children, occupational groups	
5.	Health programmes in India	• Vector borne disease control programme, • National leprosy eradication programme, • National tuberculosis programme, • National AIDS control programme, • National programme for control of blindness, • Iodine deficiency disorders (IDD) programme, • Universal Immunization programme, • Reproductive and child health programme, • National cancer control programme, • National mental health programme, • National diabetes control programme, • National family welfare programme, • National sanitation and	4 hours

		water supply programme, ● Minimum needs programme	
6.	Demography and Family Planning	● Demographic cycle, ● Fertility, ● Family planning-objectives of national family planning programme and family planning methods, A general idea of advantage and disadvantages of the methods.	3 hours
7.	Preventive Medicine in Obstetrics, Paediatrics and Geriatrics	● MCH problems, ● Antenatal, Intranasal and post-natal care, ● Care of children, ● Child health problems, ● Rights of child and National policy for children, ● MCH services and indicators of MCH care, ● Social welfare programmes for women and children, ● Preventive medicine and geriatrics	6 hours
8.	Nutrition and Health	● Classification of foods, ● Nutritional profiles of principal foods, ● Nutritional problems in public health, ● Community nutrition programmes	4 hours
9.	Environment and Health	● Components of environment, Water and air pollution and public	3 hours

		health: Pollution control, ● Disposal of waste, ● Medical entomology	
10.	Hospital waste management	● Sources of hospital waste, ● Health hazards, ● Waste management	3 hours
11.	Disaster Management	● Natural and manmade disasters, ● Disaster impact and response, ● Relief phase, ● Epidemiologic surveillance and disease control, ● Nutrition, ● Rehabilitation, ● Disaster preparedness	4 hours
12.	Occupational Health	● Occupational environment, ● Occupational hazards, ● Occupational diseases, ● Prevention of occupational diseases. ● Social security and other measures for the protection from occupational hazard accidents and diseases. ● Details of compensation acts	4 hours
13.	Mental Health	● Characteristics of a mentally healthy person, ● Types of mental illness, ● Causes of mental ill health, ● Prevention,	3 hours

		● Mental health services, ● Alcohol and drug dependence. ● Emphasis on community aspects of mental health. ● Role of Occupational Therapy in mental health problems such as mental retardation.	
14.	Health Education	● Concepts, ● aims and objectives, ● Approaches to health education, ● Models of health education, ● Contents of health education, ● Principles of health education, ● Practice of health education	3 hours

Textbooks recommended:

1. Textbook of Preventive & Social Medicine, Dr. J E Park

AP01OT4C4: PHARMACOLOGY

Course description - This course introduces the student to basic pharmacology of common drugs used, their importance in the overall treatment including Occupational therapy.

Fourth Semester (19-24 months)				
Course Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT4C4 – Pharmacology	45	-	45	4

SR. NO.	AREAS	CONTENT
1.	General Pharmacology	● Introduction, ● Definitions, ● Classification of drugs, ● Sources of drugs, ● Routes of drug administration, ● Distribution of drugs, ● Metabolism and Excretion of drugs Pharmacokinetics, ● Pharmacodynamics, ● Factors modifying drug response, ● Adverse effects
2.	Autonomic Nervous system	● General considerations – The Sympathetic and Parasympathetic Systems, Receptors, Somatic Nervous System ● Cholinergic and Anti-Cholinergic drugs, Adrenergic and Adrenergic blocking drugs, Peripheral muscle relaxants.
3.	Cardiovascular Pharmacology	● Drugs used in the treatment of heart failure: Digitalis, Diuretics, Vasodilators, ACE inhibitors Antihypertensive Drugs: Diuretics, Beta Blockers, Calcium Channel Blockers, ACE Inhibitors, Central Acting Alpha Agonists, Peripheral Alpha Antagonists, Direct acting Vasodilators ● Antiarrhythmic Drugs ● Drugs used in the treatment of vascular disease and tissue ischemia: Vascular Disease, Hemostasis Lipid-Lowering agents, Antithrombotics, Anticoagulants and Thrombolytics Ischemic Heart Disease – Nitrates, Beta-Blockers, Calcium Channel Blockers, Cerebral Ischemia Peripheral Vascular Disease
4.	Neuropharmacology	● Sedative-Hypnotic Drugs: Barbiturates, Benzodiazepines

		● Antianxiety Drugs: Benzodiazepines, Other Anxiolytics ● Drugs Used in Treatment of Mood Disorders: Monoamine Oxidase Inhibitors, Tricyclic Antidepressants, Atypical Antidepressants, Lithium ● Antipsychotic drugs
5.	Disorders of Movement	● Drugs used in Treatment of Parkinson ’s disease ● Antiepileptic Drugs ● Spasticity and Skeletal Muscle Relaxants
6.	Inflammatory/Immune Diseases	● Non-narcotic Analgesics and Nonsteroidal Anti-Inflammatory Drugs: Acetaminophen, NSAIDs, Aspirin, Nonaspirin NSAIDs, drug Interactins with NSAIDs ● Glucocorticoids: Pharmacological Uses of Glucocorticoids, adverse effects, Physiologic Use of Glucocorticoids ● Drugs Used in Treatment of Arthritic Diseases: Rheumatoid Arthritis, Osteoarthritis, Gout ● Drugs Used in the Treatment of Neuromuscular Immune/Inflammatory Diseases: Myasthenia gravis, Idiopathic Inflammatory Myopathies, systemic lupus Erythematous, Scleroderma, Demyelinating Disease ● Respiratory Pharmacology: Obstructive Airway Diseases, Drugs used in Treatment of Obstructive airway Diseases, Allergic Rhinitis
7.	Digestion and Metabolism	● Gastrointestinal Pharmacology: Peptic Ulcer Disease, Constipation, Diarrhea Drugs Used in Treatment of Diabetes Mellitus: Insulin, Oral Hypoglycemic
8.	Geriatrics	● Pharmacology and the geriatric Population: Adverse effects of special concern in the Elderly, Dementia, Postural hypotension.

Textbooks recommended:

1. Lippicott's Pharmacology.
2. Essential of Medical Phramacology by Tripathi
3. Textbook of Medical Pharmacology by Padmajaudaykumar
4. Pharmacology by N.Murugesh
5. Pharmacolgy&Pharmacotherapeutics by Sadoskar.

AP01OT4C1: INTRODUCTION OF OT II

Course description: The course contains the theoretical concepts for evaluation of performance components and with specific evaluations. It also contains management of common problems during rehabilitation of patient. The course also includes practical demonstration and lab practice assessments (method, equipment; tools, etc.) in Occupational Therapy. The student practices these skills on models before application on clients. The course also includes assessment of the personal, social & cultural context of the client.

Course objectives: On completion of this course the student will know the theoretical foundation for evaluation of performance component, rationale of evaluation of the specific performance component and management principles and techniques of common problems. The student will also understand the influence of contextual factors on occupational performance and the assessment of personal, social and cultural contextual factors. The student will learn to apply the assessment skills in clinical practice

THEORY: 60 HOURS

SR. NO.	TOPICS	CONTENT	DIDACTIC HOURS
1.	Overview of performance skills and client factors		**4 Hours**
2.	Individual Muscle Testing	● Individual muscle testing in normal and clinical conditions. (Muscles of upper extremity, Lower Extremity, Spinal, Abdominal muscles) ● Learn and perform individual muscle testing on normal and patients in upper and lower extremities, spine and abdomen ● Identify strength in functional tasks	**17 Hours**
3.	Assessment & management of oedema	● Edema assessment methods	**2 Hours**
4.	Optimizing abilities & capacities: ROM, strength and endurance	● Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio-visual presentations. ● Demonstration in common tasks, exercises. ● Discussion with respect to endurance tasks. ● Demonstration: Patient positioning, Identification of surface landmarks for goniometry, Goniometric placements, Recording measurements with goniometry. ● Learn & perform gross muscle testing on normal & patients in upper & lower	**17 Hours**

		extremities, Identify strength in functional tasks.	
5.	Assessment of hand functions	● Functional anatomy of wrist and hand. ● Types of Hand functions: i. Prehension ii. Grasp patterns iii. Grip Pinch. iv. In hand manipulation. ● Theoretical aspects of Assessment. ● Total active motion. ● Functional evaluation of hand.	**5 Hours**
6.	Assessment of motor control, Optimizing motor control	● Muscle tone assessment: Modified Ashworth Scale/Pearsons rating of mild, moderate severe spasticity. ● Evaluation, palpation testing for normal tone and variations in tone under supervision of staff. ● Identification of types of muscle tone in normal and patients (pyramidal, extrapyramidal & lower motor neuron) ● Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio -visual presentations.	**7 Hours**
7.	Assessment of cognition	● Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio-visual presentations. ● Demonstration and execution of tests on – i. Memory -3 types. ii. Attention. iii. Orientation.	**4 Hours**
8.	Assessment of vision, visual perception & praxis	● Types of perceptual deficits - Body scheme, unilateral neglect, spatial relations & position in space and apraxia. ● Demonstrations and practice of each component of perception as in uniform terminology. ● Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio-visual presentations	**4 Hours**

PRACTICALS:30 HOURS

1. Individual muscle testing
2. Assessment of oedema
3. Assessment of endurance
4. Assessment of hand functions
5. Assessment of motor control
6. Assessment of cognition
7. Assessment of vision, visual perception & praxis

Textbooks recommended:

- Muscles :Testing and Function with Posture and per. Fifth edition - Florence
- Peterson Kendall, Elizabeth Kendall McCreary. Patricia Ceise Provance
- Occupational Therapy for Physical Dysfunction. Sixth Edition - Radomski &Trombly .
- Pedretti's Occupational Therapy - Practice Skills for Physical Dysfunction, Fifth and Sixth Edition -Heidi Mchugh Pendleton, Winifred Scoultz Krohn
- Willard and Spackman Occupational Therapy. Eleventh Edition - Crepeau, Cohn and Schell
- Occupational.Therapy for Children, Fourth edition - Jane Case Smith Daniels and
- Worthingham's Muscle Testing: Techniques of Manual Examination - Helen J. Hislop, Jacqueline Montgomery
- Bickerstaff's Neurological Examination in Clinical Practice - John A. Spinalle, Edwin R.
- Bickerstaff Screening Adult Neurological Populations- A Step by Step Instruction Manual - Sharon A Gutman, Alison B Schonics

AP01OT4C2: THERAPEUTIC ACTIVITIES & EXERCISES

Course description: This course discusses the treatment modalities used in Occupational therapy as on a continuum from activities to exercise. The characteristics end therapeutic use of activities are discussed in detail. The course emphasizes on the use and types of activity analysis. The course also describes the selection and techniques with exercises. It also includes the organization of theory and its practical application in occupational therapy practice. The course also involves lab activities for activity analysis, therapeutic exercises, models and frame of reference for practice.

Course objectives: On completion of this course the student will learn the therapeutic potential of activities. The student will also learn the essential skill of activity analysis which will facilitate clinical reasoning in occupational therapy. The student will also become familiar with different terminologies in occupational theory and the integration of these in practice.

THEORY: 60 HOURS

SR. NO.	TOPICS	CONTENT	DIDACTIC HOURS
1.	Therapeutic activities and modalities in occupational therapy	● Theory & concept in use of PAM ● Principles of applied physics, tissue & nerve electrode potentials, conductivity. ● Indications & contraindications in clinical conditions ● Superficial thermal Agents ● Deep thermal Agents ● Cryotherapy ● Electrical Modalities: Diathermy, transcutaneous Electrical stimulation (TENS), Inferential Faradic current, Neuromuscular Electrical stimulation (NMES), Ultrasound	**4 Hours**
2.	Occupational therapy & activities	● Characteristics of purposeful activities ● Activities as natural human phenomena ● Activities and health ● Activities health and occupational therapy ● Activities as means and ends ● Teaching activities in occupational therapy	**28 Hours**

3.	Job Analysis	● Assessment needs &components in analysis. ● Group wise presentation of analysis of below jobs: i. Tailoring. ii. Data entry on computers. iii. Carpentry. iv. Driving.	**4 Hours**
4.	Therapeutic exercise	● Demonstration, Hands on practice on peers, models or clients under supervision, interactive sessions following clinical and/or simulated audio-visual presentations ● Types of therapeutic exercises: i. Progressive Resistive Exercise (PRE). ii. Regressive Resistive Exercise (RRE). iii. Brief Repetitive Isometric Maximal Exercise (BRIME). ● Indications, Contraindications and precautions in therapeutic milieu	**6 Hours**
5.	Occupation based models	● Occupational behavior model ● Model of human occupation ● Occupational adaptation model ● Person-environment -occupation model ● Model integration	**12 Hours**
6.	Frames of reference in occupational therapy	● Biomechanical frame of reference ● Rehabilitation frame of reference	**6 Hours**

PRACTICALS: 30 HOURS

1. Therapeutic exercises
2. Frame of references/models
3. Job Analysis

Textbooks recommended:

- Applied Theories in Occupational Therapy-A Practical Approach -Cole & Tufano
- Occupational Therapy and Activities Health - Towards Health Through Activities -
- Simme Cynkin, Anne Mazur Robinson
- Activity analysis - Application to Occupation - Hersch, Lamport, & Coffey
- Willard & Spackman's Occupational Therapy, Tenth Edition - Crepeau, Cohn and Schell
- Activity analysis-Hand Book - Nancy K Lamport, Margaret S Coffey, Gayle 1 Hersch.
- Kinesiology for Occupational Therapy - Melinda Rybski

- Therapeutic Exercise- Foundations and Techniques, Fourth Edition - Carolyn Kisner, Lynn Allen Colby
- Pedretti's Occupational Therapy - Practice Skills for Physical Dysfunction, Sixth - Edition - Heidi Mchugh Pendleton, Winifred Schultz Krohn
- Purposeful Activity : Foundation and Future of Occupational Therapy - Rita Cottrell
- Crafts in Therapy & Rehabilitation, second edition - Margaret Drake
- Therapeutic Crafts: A practical approach - Cynthia Johnson, Kathy Lobdell. Jacqueline Nesbitt, Marjorie Claire

AP01OT4S1: BIOENGINEERING

THEORY:30 HOURS

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Definition & principles of bioengineering	• Lower extremity orthoses • Spinal orthoses	**15 Hours**
2.	Upper extremity & lower extremity prostheses	• Prescription • Fitting • Checking	**10 Hours**
3.	Wheelchair	• Wheelchair & wheelchair transfer • Prescription & designing footwear modifications	**5 Hours**

PRACTICALS: 30 HOURS

1. Identification of different parts of UE & LE prosthesis
2. Identification of different parts of LE orthosis
3. Identification & clinical application of spinal orthosis

COURSE AND DISTRIBUTION OF MARKS FOR UNIVERSITY EXAMINATION:

Fourth Semester (19-24 months)								
Sl. No.	Courses	**Theory**				**Practical**		Total
		Written		IA	Viva	Practical	IA	
		Time	Max. Marks	Max. Marks	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1	**AP01OT4C1** Introduction of OT II	3	80	20	20	60	20	200
2	**AP01OT4C2** Therapeutic exercises & activities	3	80	20	20	60	20	200

3	**AP01OT4C3** Community Medicine	3	80	20	--	--	--	100
4	**AP01OT4C4** Pharmacology	3	80	20	--	--	--	100

Practical Exam Pattern: AP01OT4C1

Marks distribution:

ROM – 20 (On patient)

MP- 20 (On patient- IMT)

Viva- 20 Marks

Other assessment- 20 Marks

Practical Exam Pattern: AP01OT4C2

Marks distribution:

Activity Analysis- 20 Marks

Job Analysis- 20 Marks

Therapeutic exercises/models/FORs- 20 Marks

Viva- 20 marks

SEMESTER-V

AP01OT5C1: CLINICAL ORTHOPEDICS & TRAUMATOLOGY

Course Description: This course follows the basic science courses to provide the knowledge about Orthopaedic conditions the therapist would encounter in their practice.

Fifth Semester (25-30 months)				
Course Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
A01OT5C1- Clinical Orthopedics &Traumatology	60	-	60	4

SR. NO.	AREAS	CONTENT	DIDACTIC HOURS
1.	Introduction	● Introduction to Orthopaedics. Clinical examination of an Orthopedic patient. ● Common investigative procedures. ● Radiological and Imaging techniques in Orthopeadics. ● Inflammation and repair, Soft tissue healing.	3 Hours
2.	Traumatology	● Fracture: definition, types, signs and symptoms. Fracture healing. ● Complications of fractures. Conservative and surgical approaches. ● Principles of management– reduction (open/closed, immobilization etc.). ● Sublimation/dislocations– definition, signs and symptoms, management (conservative and operative).	3 Hours
3.	Fractures and Dislocations of Upper Limb	● Fractures of Upper Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures: i. Fractures of clavicle and scapula. ii. Fractures of greater tuberosity and neck of Humerus. iii. Fracture shaft of Humerus. iv. Supracondylar fracture of humerus. v. Fractures of capitulum, radial head, olecranon, coronoid, and epicondyles. vi. Side swipe injury of elbow. vii. Both bone fractures of ulna and radius. viii. Fracture of forearm – monteggia, galaezzi fracture	6 Hours

		–dislocation. ix. Chauffer's fracture. Colle's fracture. x. Smith's fracture. xi. Scaphoid fracture. xii. Fracture of the metacarpals. xiii. Bennett's fracture. xiv. Fracture of the phalanges. (Proximal and middle.)	
		● Dislocations of Upper Limb i. Anterior dislocation of shoulder – mechanism of injury, clinical feature, complications, conservative management (Kocher's and Hippocrates maneuver), ii. surgical management (putti plat, bankart's) etc. Recurrent dislocation of shoulder. iii. Posterior dislocation of shoulder – mechanism of injury, clinical features and management. Posterior dislocation of elbow – mechanism of injury, clinical feature, complications & management.	
4.	Fracture of Spine	● Fracture of Cervical Spine - Mechanism of injury, clinical feature, complications (quadriplegia); Management- immobilization (collar, cast, brace, traction); Management for stabilization, management of complication (bladder and bowel, quadriplegia). Clay shoveller's fracture. Hangman's fracture. Fracture odontoid. Fracture of atlas. ● Fracture of Thoracic and Lumbar Regions - Mechanism of injury, clinical features, and management— conservative and surgical of common fractures around thoracic and lumbar regions. Fracture of coccyx. ● Fracture of Rib Cage - Mechanism of injury, clinical features, management for Fracture Ribs, Fracture of sternum.	4 Hours
5.	Fractures and Dislocations of Lower Limb	● Fracture of Pelvis and Lower Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures: ● Fracture of pelvis. Fracture neck of femur – classification, clinical features, complications, management - conservative and surgical.	5 Hours

		• Fractures of trochanters. • Fracture shaft femur—clinical features, mechanism of injury, complications, management-conservative and surgical. • Supracondylar fracture of femur. • Fractures of the condyles of femur. • Fracture patella. • Fractures of tibial condyles. • Both bones fracture of tibia and fibula. • Dupuytren's fracture Maisonneuve's fracture. • Pott's fracture – mechanism of injury, management. • Bimalleolar fracture Trimalleolar fracture Fracturecalcaneum – mechanism of injury, complications and management. • Fracture of talus. • Fracture of metatarsals—stress fractures jone's fracture. • Fracture of phalanges. • Dislocations of Lower Limb - mechanism of injury, clinical features, complications, management of the following dislocations of lower limb. • Anterior dislocation of hip. Posterior dislocation of hip. Central dislocation of hip. Dislocation of patella. Recurrent dislocation of patella.	
6.	Soft Tissue Injuries	• Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis. • Mechanism of injury of each, clinical features, managements- conservative and surgical of the following soft tissue injuries: • Meniscal injuries of knee. Cruciate injuries of knee. Medial and lateral collateral injuries of knee. Lateral ligament of ankle. Wrist sprains. Strains- quadriceps, hamstrings, calf, biceps, triceps etc. Contusions- quadriceps, gluteal, calf, deltoid etc. Tendon ruptures-Achilles, rotator cuff muscles, biceps, pectorals etc.	3 Hours
7.	Hand Injuries	• Mechanism of injury, clinical features, and management of the following - Crush injuries. Flexor and extensor injuries. Burn injuries of hand.	2 Hours
8.	Amputations	• Definition, levels of amputation of both lower and upper limbs, indications, complications.	2 Hours

9.	Traumatic Spinal Cord Injuries	• Clinical features, complications, medical and surgical management of Paraplegia and Quadriplegia.	2 Hours
10.	Deformities	• Clinical features, • Complications, • Medical and surgical management of the following Congenital and Acquired deformities. • Congenital Deformities - CTEV. CDH. Torticollis. Scoliosis. Flat foot. Vertical talus. • Hand anomalies - syndactyly, polydactyly and ectrodactly. Arthrogryposis multiple congenital (amyoplasiacongenita). • Limb deficiencies- Amelia and Phocomelia. Klippel-feil syndrome. Osteogenesis imperfecta (fragile ossium). Cervical Rib. • Acquired Deformities - Acquired Torticollis, Scoliosis, Kyphosis, Lordosis, Genu varum, Genu valgum, Genu recurvatum, Coxa vara, Pes cavus, Hallux rigidus, Hallux valgus, Hammertoe, Metatarsalgia	6 Hours
11.	Disease of Bones and Joints	• Causes, Clinical features, Complications, Management- medical and surgical of the following conditions: i. Infective conditions: Osteomyelitis (Acute / chronic). Brodie's abscess. TB spine and major joints like shoulder, hip, knee, ankle, elbow etc. ii. Arthritic conditions: Pyogenic arthritis. Septic arthritis. Syphilitic infection of joints. iii. Bone tumors: classification, clinical features, management - medical and surgical of the following tumors: Osteoma. Osteosarcoma, Osteochondroma. Enchondroma. Ewing's sarcoma. Giant cell tumor. Multiple myeloma. Metastatic tumors.Perthes disease, Slipped Capital Femoral Epiphysis and Avascular Necrosis. iv. Metabolic Bone Diseases: Rickets. Osteomalacia, Osteopenia. Osteoporosis.	4 Hours
12.	Inflammatory and Degenerative Conditions	• Causes, clinical feature, complications, deformities, radiological features, management- conservative and surgical for the following conditions: i. Osteoarthritis. Rheumatoid arthritis. Ankylosing spondylitis, Gouty arthritis. Psoriatic arthritis. Hemophilic arthritis. Still's disease (juvenile rheumatoid arthritis). Charcot's joints. Connective	4 Hours

		Tissue Disorders- Systemic Lupus Erythematosus, Scleroderma, Dermatomyositis, Poliomyelitis, Mixed connective tissue Disease (MCTD)	
13.	Syndromes	● Causes, Clinical features, complications, management- conservative and surgical of the following: I. Cervico brachial syndrome. Thoracic outlet syndrome. Vertebro - basilar syndrome. Scalenus syndrome. Costo clavicular syndrome. Levator scapulae syndrome. Piriformis syndrome.	3 Hours
14.	Neuromuscular Disorders	● Definition, causes, clinical features, complications, management. (Multidisciplinary approach) medical and surgical of the following conditions: i. Cerebral palsy, Poliomyelitis, Spinal Dysraphism, Leprosy	3 hours
15.	Cervical and Lumbar Pathology	● Causes, clinical feature, patho-physiology, investigations, management-Medical and surgical for the following: ii. Prolapsed interverbral disc (PID), Spinal Canal Stenosis, Spondylosis (cervical and lumbar) Spondylolysis, Spondylolisthesis, Lumbago/ Lumbosacral strain, Sacralisation, Lumbarisation, Coccydynia, Hemi vertebra	3 Hours
16.	Orthopedic Surgeries	● Indications, Classification, Types, Principles of management of the following Surgeries: i. Arthrodesis, Arthroplasty (partial and total replacement), Osteotomy, External fixators. Spinal stabilization surgeries (Harrington's, Luque's, Steffi plating) etc, Limb reattachments.	3 Hours
17.	Regional Conditions	● Definition, Clinical features and management of the following regional conditions: i. Shoulder: Periarthritis shoulder (adhesive capsulitis), Rotator cuff tendinitis, Supraspinatus Tendinitis, Infraspinatus Tendinitis, Bicipital Tendinitis, Subacromial Bursitis. ii. Elbow: Tennis Elbow, Golfer's Elbow, Olecranon	4 Hours

		Bursitis (student's elbow). Triceps Tendinitis. iii. Wrist and Hand: De Quervain's Tenosynovitis, Ganglion, Trigger Finger/ Thumb, Mallet finger, Carpal Tunnel Syndrome, Dupuytren's Contracture. iv. Pelvis and Hip : IT Band Syndrome, Piriformis Syndrome, Trochanteric Bursitis. v. Knee: Osteochondritis Dissecans, Prepatellar and Suprapatellar Bursitis, Popliteal Tendinitis, Patellar Tendinitis, Chondromalacia Patella, Plica Syndrome, Fat Pad Syndrome (Hoffa's syndrome). vi. Ankle and Foot: Ankle Sprains, Plantar Fasciitis / Calcaneal Spur, Tarsal Tunnel Syndrome, Achilles Tendinitis, Metatarsalgia, Morton's Neuroma	

Textbooks recommended:

1. Outline of Fractures, John Crawford Adams.
2. Outline of Orthopedics., John Crawford Adams.
3. Textbook of Orthopedics. Maheswari.
4. Apley's Orthopedics.
5. Textbook of Orthopedics and Traumatology, M.N.Natarajan

AP01OT5C2: GENERAL SURGERY INCLUDING BURNS AND PLASTIC SURGERY

(Section-A)

SR. NO.	AREAS	CONTENT
1.	Fluid, Electrolyte and Acid-Base disturbances	● Diagnosis and management; ● Nutrition in the surgical patient; ● Wound healing – basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, ● Scars – types and treatment. ● Hemostasis – components, hemostatic disorders, factors affecting bleeding during surgery. ● Transfusion therapy in surgery – blood components, complications of transfusion; Surgical Infections; ● General Post – Operative Complications and its management
2.	Reasons for Surgery	● Types of anaesthesia and its effects on the patient; ● Types of Incisions - Clips Ligatures and Sutures; ● General Thoracic Procedures – Radiologic Diagnostic procedures, ● Endoscopy – types, ● Biopsy – uses and types. ● Overview and Drainage systems and tubes used in Surgery
3.	Causes, Clinical Presentation, Diagnosis and treatment of the following Thoracic Trauma situations	● Airway obstruction, ● Pneumothorax, ● Hemothorax, ● Cardiac Tamponade, ● Tracheobronchial disruption, ● Aortic disruption, ● Diaphragmatic disruption,

		● Esophageal disruption, ● Cardiac and Pulmonary Contusions
4.	Surgical Oncology	● Cancer – definition, types, clinical manifestations of cancer, Staging of Cancer, surgical procedures involved in the management of cancer
5.	Disorders of the Chest Wall, Lung and Mediastinum	
6.	Thoracic surgeries	● **Thoracotomy** – Definition, Types of Incisions with emphasis to the site of incision, muscles cut and complications. ● **Lung surgeries:** Pneumonectomy, Lobectomy, segmentectomy – Indications, Physiological changes and Complications; Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung. ● **Cardiac surgeries –** An overview of the Cardio-Pulmonary Bypass Machine – Extracardiac Operations, Closed Heart surgery, Open Heart surgery. Transplant Surgery – Heart, Lung and Kidney – Indications, Physiological changes and Complications
7.	Diseases of the Arteries and Veins	● Definition, ● Etiology, ● Clinical features, ● Signs and symptoms, ● Complications, ● Management and treatment of following diseases: i. Arteriosclerosis, ii. Aneurysm, iii. Berger's disease, iv. Raynaud's Disease, v. Thrombophlebitis, vi. Deep Vein Thrombosis, vii. Pulmonary Embolism, viii. Varicose Veins.

8.	Definition, Indication, Incision, Physiological changes and Complications following Common operations	• Cholecystectomy, • Colostomy, • Ileostomy, • Gastrectomy, • Hernias, • Appendicectomy Mastectomy, • Neprectomy, • Prostectomy.

Textbooks recommended:

1. General Surgical Operations – by Kirk / Williamson
2. Surgery by Nan
3. Bailey and Love's – Short Practice of Surgery
4. Chest Disease by Crofton and Douglas.
5. Patrica A Downie, Textbook of Heart, Chest Vascular Disease for physiotherapists, JP Bros.

AP01OT5C3: OCCUPATIONAL PERFORMANCE:

ADL, WORK & LEISURE- (Annexure II)

	TOPICS	CONTENT	HOURS
1	Overview of life skills		**05**
2	Evaluating and restoring activities of daily living and instrumental activities of daily living	● Definition & classification of ADL. (BADL & IADL) ● Levels of assist. [dependent to independent] ● Theoretical understanding of standardized ADL scales, components and application of Functional Independence Measure (FIM) Functional Assessment Measure (FAM) Assessment of Motor and Process Skills (AMPS) Modified Barthel Index. ● Explaining the principles in ADL related to Weakness Low endurance Limited ROM In- coordination Loss of use of one side of body Limited vision Decreased sensation ● Identify and classify ADL Apply Barthel index, FIMFAM, AMPS on normal subjects and clients with limitations in performance component Rate level of independence in ADL	**155**
3	Caregiving and child rearing	● Evaluation of caregiving ● Child rearing and caregiving occupations ● Being a Caregiver and disability ● Intervention for caregivers	**05**
4	Work: work evaluation, work programs, vocational rehabilitation & ergonomics	● Definition of work, Work behaviours, Work skills, Work aptitudes, Physical Demands ● Functional Capacity Evaluation Physical Capacity Evaluation Work Capacity Evaluation Work evaluation tools Work site evaluations Situational Assessments Psychometric Instruments Work Samples- Actual, Simulated, Single trait, Cluster Trait ● Work Conditioning Work Hardening Vocational Training	**15**

		• Assessment needs &components in analysis. Analysis of Tailoring. Data entry on computers. Carpentry. Driving. • Group wise presentation of analysis of below jobs Tailoring. Data entry on computers. Carpentry. Driving	
5	Play and leisure	• Functions of Play – Social, Physical, Sensory, Emotional, Perceptual, Cognitive. Content & structure of play. Theories of play – E. Erikson, A. Freud, J. Piaget, Reilly. Role of play in Occupational Therapy treatment process.	**05**

AP01OT5C4: GENERAL MEDICINE, PAEDIATRICS AND PSYCHIATRY

Course Description: This course follows the basic science courses to provide the knowledge about relevant aspects of general medicine. The student will have a general understanding of the diseases the therapist would encounter in their practice.

Fifth Semester (25-30 months)				
Course code & Title	**Hours**			**Weekly class Hours**
	Theory	**Practical**	**Total**	
AP01OT5C4- General Medicine, Pediatrics & psychiatry	60	-	60	5

SR. NO.	AREAS	CONTENT
1.	Infection	• Effects of Infection on the body • Pathology • Source and spread of infection • Vaccinations • Generalized infections • Rashes and infection • Food poisoning and gastroenteritis • Sexually transmitted diseases – HIV infections and Aids.
2.	Poisoning	• Clinical features

		● General management ● Common agents in poisoning ● Pharmaceutical agents ● Drugs of misuse ● Chemical pesticides ● Envenomation
3.	Food and Nutrition	● Assessment – Nutritional and Energy requirements; ● Deficiency diseases - clinical features and treatment; ● Protein – Energy Malnutrition: Clinical features and treatment; ● Obesity and its related disorders: Causes – Complications – benefits of weight loss ● management of Obesity – diet, exercise and medications.
4.	Endocrine diseases	● Common presenting symptoms of Endocrine disease; ● Common classical disease presentations, clinical features and its management; ● Diabetes Mellitus: Etiology and pathogenesis of diabetes – clinical manifestations of the disease – management of the disease, Complications of diabetes
5.	Diseases of the blood	● Examinations of blood disorders – Clinical manifestations of blood disease; ● Anemia – signs and symptoms – types and management; ● Hemophilia - Cause – clinical features severity of disease – management – complications due to repeated hemorrhages – complications due to therapy
6.	Diseases of the digestive system	● Clinical manifestations of gastrointestinal disease – Etiology, clinical features, diagnosis, complications and treatment of the following conditions: i. Reflux Oesophagitis, ii. Achalasia Cardia, iii. Carcinoma of Oesophagus,

		iv. GI bleeding, v. Peptic Ulcer disease, vi. Carcinoma of Stomach, vii. Pancreatitis, viii. Malabsorption Syndrome, ix. Ulcerative Colitis, x. Peritonitis, xi. Infections of Alimentary Tract; ● Clinical manifestations of liver diseases - Aetiology, clinical features, diagnosis, complications and treatment of the following conditions: i. Viral Hepatitis, ii. Wilson's Disease, iii. Alpha1-antitrypsin deficiency, iv. Tumors of the Liver, v. Gallstones, vi. Cholecystitis
7.	Diseases of the Skin	● Examination and clinical manifestations of skin diseases; ● Causes, ● Clinical features and management of the following skin conditions: i. Leprosy, ii. Psoriasis, iii. Pigmentary anomalies, iv. Vasomotor disorders, v. Dermatitis, vi. Coccal and Fungal Parasitic vii. Viral infections
8.	Pediatrics	● Problems and management of LBW infants, ● Perinatal problems and management, ● Congenital abnormalities and management, ● Respiratory conditions of childhood, ● Cerebral Palsy – causes, complications, clinical manifestations, treatment;

		● Spina Bifida – management and treatment, ● Epilepsies – types, diagnosis and treatment; ● Recognizing developmental delay, common causes of delay; ● Orthopedic and Neuromuscular disorders in childhood, clinical features and management; ● Sensory disorders – problems resulting from loss of vision and hearing; ● Learning and behavioural problems – Hyperactivity, Autism, Challenging behaviours, Educational delay, The Clumsy Child
9.	Psychiatric Disorders	● Classifications, Causes, Clinical manifestations and treatment methods used in Psychiatry. Modalities of psychiatric treatment, ● Psychiatric illness and physiotherapy, ● Brief description of Etio-pathogenesis, manifestations, and management of psychiatric illnesses – i. Anxiety neurosis, ii. Depression, iii. Obsessive compulsive neurosis, iv. Psychosis, v. Manic- depressive psychosis, vi. Post-traumatic stress disorder, vii. Psychosomatic reactions: Stress and Health, theories of Stress – Illness. ● Etio-pathogenesis, manifestations, and management of psychiatric illness: i. Drug dependence and alcoholism, ii. Somatoform and Dissociative Disorders – conversion reactions, Somatization, Dissociative Amnesia, and Dissociative Fugue, iii. Personality disorders

		iv. Child psychiatry - manifestations, and management of childhood disorders -attention deficit syndrome and behavioral disorders. v. Geriatric psychiatry.

Textbooks recommended:

1. Davidson's Principles and Practice of Medicine
2. Harrison's Internal Medicine
3. Braunwald Text of Cardiology
4. Textbook of Cardiology by Hurst Essentials of Paediatrics – O.P. Ghai-Inter Print publications
5. .Clinical Paediatrics - Meherban Singh
6. Clinical neurology – Roger Bannister
7. Diseases of Nervous system – Walton
8. .Clinical Examination in Neurology – Bickerstaff

A0P1OT50C5: OCCUPATIONAL THERAPY IN REHABILITATION

THEORY:60 HOURS

SI. NO.	TOPICS	CONTENT	HOURS
1	Disability and rehabilitation	• International Classification of Functioning, Disability & Health: WHO's ICF 2001 & older editions of ICIDH. • Magnitude of disability problems, its causes & future trends. • Persons with Disability Act (1995), • National Trust Act 1999, RCI Act 1992 by Government of India. • Basic concepts of disability evaluation and certification in India and its Social Legislation. • Prevention & detection of disability & Role of Occupational Therapy in disability prevention.	5
2	Practice setting for physical dysfunction	• Definition of environment & types of environments. • Components of human and non-human environments, science of environmental psychology. • Its application to the practice of Occupational Therapy.	3

3	Occupational Health	• Definition of occupational health. • Role of Occupational Therapy in occupational disorders like occupational lung disease. • Medical and engineering measures in prevention of occupational diseases. • Assessment of environment, and education on preventive measures	5
4	Infection control & safety issues	• Safety recommendations • Precaution with special equipments • Infection control • Incidents and emergencies	2
5	Functional mobility training	• Assessment for the need of Mobility aids. • Selection of Assistive devices for ambulation • Fitting of Assistive devices for ambulation	5
6	Wheelchair prescription and training	• Wheelchair selection process: Assessment for positioning, Adaptations and types of Wheelchairs. Parts and Accessories of Wheelchairs. • Training and safety assessment for wheelchair maneuvering. • Practice in evaluation and prescription for wheelchairs, • Wheelchair devices for positioning and wheelchair maneuvering.	5
7	Lifts and transfers	• Definition. • Types • Guidelines for using proper body mechanics. Principles of body positioning i. Stand pivot transfer ii. Sliding board transfer iii. Bent pivot transfer iv. Dependent transfers	4
8	Architectural barriers	• Universal design • Disability access symbols • Purpose of examination • Examination strategies • Examination of the home • Adaptive equipment • Assistive technology • Examination of the workplace • Community access	5
9	Physical adjunct modalities in occupational therapy	• Theory & concept in use of PAM Principles of applied physics, tissue & nerve electrode potentials, conductivity • Indications & contraindications in clinical conditions • Types of modalities: Superficial thermal	10

		Agents Deep thermal Agents Cryotherapy Electrical Modalities: Diathermy, transcutaneous Electrical stimulation (TENS), Inferential Faradic current, Neuromuscular Electrical stimulation (NMES), Ultrasound ● Practical: Practice of TENS, Ultrasound, thermal modalities, laser, Neuromuscular electrical stimulation (NMES), IFC as adjunct to Occupational therapy intervention to improve task performance	
10	Biofeedback	● Definition of biofeedback. Principles, foundations and elements of the biofeedback system. Neurophysiological clinical reasoning in the biofeedback system. Types of biofeedback system and clinical applications with advantages of biofeedback system as an adjunct to Occupational Therapy ● Biofeedback techniques, EMG biofeedback, use of audio-visual and associated biofeedback techniques	3
11	Hand splinting	● Aetiology of Flexor and extensor tendon injuries, Zones of tendon repair, Protocols for intervention, role of Splinting ● Practical: Demonstration of Protocol for tendon repair & splint. (Tendon Gliding exercises, Blocking exercises.) ● Practical: Edema measurement using standardized methods Grip and pinch strength evaluation using standardized equipment Clinical reasoning in splint prescription for flexion and extension deformities of hand and wrist- live / simulated case presentations. Audio visual interactive sessions ● Causes of crush injuries, Classification, clinical implications, Tests for evaluation of hand function, grip, pinch, oedema, sensory examination, pre & post-operative management in O.T. & splinting. Causes of stiff hand and its management ● Classification of nerve injuries, Clinical manifestations of brachial plexus injuries and peripheral nerve injuries. Evaluation and treatment specific to BPI and PNI. Functional impact and implications. Therapeutic techniques, splints and adaptations in management of BPI and PNI. ● Practical: Demonstration of the different splints used in Peripheral Nerve Injuries and Brachial Plexus Injuries. Nerve gliding exercises. Sensory testing – Moberg pick up	5

		test. Siemens Winston's Monofilament. Discussions, deliberations, interactive sessions based on clinical reasoning for all above.	
12	Assistive technology	● The HAAT Model Strategies and methods of clinical implementation in the following: Posture, Mobility, Communication, Manipulation, Sensory, Cognition, Motor, ADL, Affective ● Practical: Applications in context to above as seminar presentations, audiovisual, Simulated and Clinical case presentations. ● Technology; assistive & computer technology application in OT Use of computer as a tool in clinical implementation Software selection criteria & methods. Method of clinical implementation in motor, sensory, cognition, ADL, affective domain.	5
13	Palliative care and hospice	● Head, neck, face & breast cancer, its diagnosis & medical & surgical management. Psychological problems associated with cancer. Physical dysfunction issues from cancer. OT techniques used for rehabilitation of cancer patients (Preventive, restorative, supportive). Hospice (palliative aspects), family systems and the need for treatment of the family as the unit of care ● Demonstration of management for Mastectomy, Lymphedema. Range and strength exercises. Cosmetic prosthesis. Postural exercises and body image retraining	3

PRACTICALS: 60 HOURS

1. Functional mobility training
2. Wheelchair prescription and training
3. Lifts and transfers
4. Architectural barriers
5. Physical adjunct modalities in occupational therapy
6. Biofeedback
7. Hand splinting
8. Assistive technology

Textbooks recommended:

1. Occupational Therapy – Willard & Spackman's
2. O.T. Practice Skills for Physical Dysfunction – Pedretti
3. O.T. in physical Dysfunction – Trombly& Scott

4. Therapeutic Exercise – Kisner
5. Therapeutic Exercise Basmajian
6. Rehab Medicine – Goodgold
7. Rehabilitation of Hand – Wynn & Parry
8. Rehabilitation of the Hand: Surgery and Therapy – Hunter
9. Hand splitting – Fess, Gettle& Strickland.
10. Pulmonary rehabilitation, guidelines to success – Hodgkin T.E.
11. Physical rehabilitation, assessment, treatment – O'Sullivan.
12. Work physiology by Mac Ardle

AP01OT5S1: First aid and emergency skills

(Annexure – III)

Not for University exam

S.NO	AREAS	CONTENTS	PRACTICAL HOURS
	FIRST AID		
1	First Aid Emergencies	1. Burns & scalds: first aid treatment 2. Poisoning: first aid treatment 3. First aid treatment in Trauma due to foreign body insertion: Eye, ear, nose, throat, stomach and lung. 4. Bites: First aid a. Dog bites: Rabies b. Snake bite: neurotoxin, bleeding diathesis	4
2	Skeletal injuries	Transport of patient with fracture, first	4
		Respiratory Emergencies	1
		Wounds and Hemorrhage	2
		Shock and unconsciousness	2
		Transportation of the injured	1
		Community Emergencies	1
		Community Resources	1
		Bandages	1

COURSE AND DISTRIBUTION OF MARKS OF UNIVERSITY EXAMINATION:

	Fifth Semester (25-30 months)							
	Courses	**Theory**				**Practical**		Total
		Written		IA	Viva	Practical	IA	
		Time	Max. Marks	Max. Marks.	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1	**AP01OT5C1** Clinical Orthopedics &Traumatology	3	80	--	20	--	--	100
2	**AP01OT5C2** **Section-A** General Surgery including burns and plastic surgery	3	40	--	10	--	--	100
	AP01OT5C3 Occupational performance-ADL, Work & leisure		40	10		--	--	
4	**AP01OT5C4** General Medicine, Paediatrics & psychiatry	3	80	--	20	--	--	100
5	**AP01OT5C5** Occupational Therapy in Rehabilitation	3	80	20	20	60	20	200

Practical Exam Pattern: AP01OT5C5

Marks distribution:

Splint Fabrication- 20 Marks

Assistive technology- 20 Marks

Wheelchair and transfer training – 20 Marks

Viva- 20 Marks

SEMESTER-VI

AP01OT 6C1: OCCUPATIONAL THERAPY IN ORTHOPEDICS

Total Hours- 75 Theory

SI. NO.	TOPICS	CONTENT	HOURS
1	Introduction to occupational therapy in orthopaedic & surgical conditions and Evaluation, models and frame of references	● Clinical evaluation of upper extremities, lower extremities and spine including special and specific tests and clinical signs. ● Diagnosis of function and performance using Occupational Therapy tools. ● Frames of References & Models of Approaches as applied to Musculoskeletal Rehabilitation	11
3	Fractures & occupational therapy management	● Definition, Mechanism of Injury, Orthopaedic and Occupational Therapy management of fractures of upper extremities & lower extremities ● Reflex sympathetic dystrophy (complex regional pain syndromes), Volkmann's ischemic contracture, Myositis-Ossificans. ● Classification, types. Therapeutic intervention in Occupational Therapy with respect to the type of fixation (internal &external) and related Precautions.	10
4	Amputations & occupational therapy management	● Define amputation, causes of amputation, surgical management, levels of amputation (for both Upper and lower extremity) OT rehabilitation post amputation. ● Stump evaluation, ideal stump, stump refashioning, complications of stump end, phantom limb, phantom limb pain, desensitization, body image disturbances. ● Types of prosthesis - Body powered, hybrid, Modular prosthesis, CAD CAM prosthesis & Myoelectric prosthesis, ● Components of prosthesis & the function of each component Pylon training.	14

		• Check out of prosthesis. • Pre & post prosthetic OT management techniques. • Psychological implication of amputation. Factors that interfere with prosthetic training. • Demonstration of different types of prosthesis. • Identification of different parts of prosthesis. • Donning and doffing of prosthesis • Stump bandaging • Push up transfer • Gait analysis with prosthesis • Wheelchair – amputee frame.	
5	Spinal cord injury & occupational therapy management	• Definition, Mechanism of Injury, Occupational Therapy intervention in respect of orthopedic management. • Assessment of clinical signs and functional problems. • Strategies to optimize motor, sensory components of function. Orthotic prescriptions, wheelchair prescription, skin care &transfers. Bladder management	5
6	Arthritic conditions & occupational therapy management	• Types of arthritis and their Aetio - pathogenesis. • Conservative, arthroplasty and other surgical interventions with occupational therapy rehabilitation program. • Adaptations in ADLs and Energy Conservation techniques.	5
7	Burns & occupational therapy management	• Define & classify burns, Characteristics of different degrees of burns. • Describe phases of recovery & focus on OT intervention for each phase (pre graft, post graft, rehabilitation). • Factors that increase potential for scar hypertrophy & contracture. • Psychosocial aspects. • Demonstration of anti-deformity position. Measurement of pressure garments. Demonstration of different devices for positioning.	3

		● Orthotics for burns	
8	Low back ache & occupational therapy management		3
9	Hand injuries & occupational therapy management	● Aetiology of Flexor and extensor tendon injuries, Zones of tendon repair, Protocols for intervention, role of Splinting ● Demonstration of Protocol for tendon repair & splint. (Tendon Gliding exercises, Blocking exercises.) ● Causes, Classification, clinical implications, Tests for evaluation of hand function, grip, pinch, oedema, sensory examination, pre & post-operative management in O.T. & splinting. ● Causes of stiff hand and its management. ● Oedema measurement using standardized methods ● Grip and pinch strength evaluation using standardized equipment ● Clinical reasoning in splint prescription for flexion and extension deformities of hand and wrist- live / simulated case presentations. Audio visual interactive sessions	10
10	Arthroplasties & occupational therapy management	● Definition and Mechanism of Injuries at and around joints of upper and lower extremities. ● Arthroscopic and open surgical intervention. ● Preventive therapy and Post injury as well as post-surgical occupational therapy management. ● Post op precautions for knee shoulder, hip surgeries. ● Adaptations in ADLs.	5
11	Brachial plexus injuries & occupational therapy management	● Classification of nerve injuries, ● Clinical manifestations of brachial plexus injuries and peripheral nerve injuries. ● Evaluation and treatment specific to BPI and PNI. Functional impact and implications ● Therapeutic techniques, splints and	5

		adaptations in management of BPI and PNI. ● Demonstration of the different splints used in Peripheral Nerve Injuries and Brachial Plexus Injuries. ● Nerve gliding exercises. ● Sensory testing – Moberg pick up test. ● Siemmes Winston's Monofilament. Discussions, deliberations, interactive sessions based on clinical reasoning for all above.	
12	Onco-surgical conditions & occupational therapy management	● Head, neck, face & breast cancer, its diagnosis & medical & surgical management. ● Psychological problems associated with cancer. ● Physical dysfunction issues from cancer. ● OT techniques used for rehabilitation of cancer patients (Preventive, restorative, supportive). ● Hospice (palliative aspects), family systems and the need for treatment of the family as the unit of care. ● Demonstration of management for Mastectomy, Lymphedema. ● Range and strength exercises. ● Cosmetic prosthesis. ● Postural exercises and body image retraining	4

AP01OT6C2: OCCUPATIONAL THERAPY IN NEUROSCIENCES

Total Hours- 75 Theory

SI. NO.	TOPICS	CONTENT	HOURS
1.	Occupational therapy in neuro-rehabilitation	• Neurological evaluations for cortical, sub cortical, cerebellar, spinal and peripheral nervous system dysfunctions. • Frames of References as applied to Neuro-rehabilitation	10
2.	Roods approach	• Theory, concepts and principles of practice based on clinical reasoning. • Applications in task performance. • Demonstration of each treatment approach incorporated in a task performance.	25
3.	Brunnstroms movement therapy		
4.	Neurodevelopmental therapy		
5.	Motor relearning program		
6.	Management of cognitive and perceptual deficits	• General principles of OT assessments • General approaches in OT intervention • Assessment and intervention of specific perceptual impairments	5
7.	Motor learning	• Theoretic foundation of motor learning • Constrained induced movement therapy • Robotics • Virtual reality technology	5
8.	Occupational therapy interventions for following conditions	• CVA & hemiplegia • Head injury • Multiple sclerosis • Parkinson's disease • Motor neuron disease	10

		• Peripheral neuropathies • Spinal cord lesions • Cerebellar disorder	
9.	Medical conditions	• Occupational therapy in human immunodeficiency virus & acquired immunodeficiency syndrome • Occupational therapy in cardiopulmonary dysfunction • Occupational therapy for people with diabetes mellitus	10
10.	Geriatric conditions	• Normal ageing, population ageing & active ageing, implications to occupational therapy • Health of older adults • Occupational therapy assessment & intervention strategies • Activity programming for the elderly • Psychosocial issues & elder abuse • Safety & fall prevention in older adults • Occupational therapy in dementia	10

AP01OT6C3: CLINICAL NEUROLOGY & NEUROSURGERY

Course Description: This course follows the basic science courses to provide the knowledge about relevant aspects of neurology & neurosurgery. The student will have a general understanding of the diseases the therapist would encounter in their practice.

Sixth Semester (31-36 months)				
Course code & Titles	**Hours**			**Weekly class Hours**
	Theory	**Practical**	**Total**	
AP01OT6C3- Clinical Neurology & Neurosurgery	60	-	60	4

SR. NO.	AREAS	CONTENT
1.	Disorders of function in the context of Pathophysiology, Anatomy in Neurology and Cortical Mapping.	
2.	Classification of neurological involvement depending on level of lesion.	
3.	Neurological assessment	● Principles of clinical diagnosis, ● Higher mental function, ● Assessment of brain & spinal cord function, ● Evaluation of cranial nerves and evaluation of autonomic nervous system.
4.	Investigations	● Principles, ● Methods,

		● Views, ● Normal/abnormal values/features, ● Types of following investigative procedures- i. Skull x-ray, ii. CT, iii. MRI, iv. Evoked potentials, v. Lumbar puncture, vi. CSF examination, vii. EMG, viii. NCV
5.	Neuro-ophthalmology	● Assessment of visual function – acuity, field, colour vision, Pupillary reflex, accommodation reflex, ● Abnormalities of optic disc, ● Disorders of optic nerve, tract, radiation, occipital pole, ● Disorders of higher visual processing, ● Disorders of pupil, ● Disorders of eye movements, ● Central disorders of eye movement
6.	Deafness, vertigo, and imbalance	● Physiology of hearing, ● Disorders of hearing, ● Examination & investigations of hearing, ● Tests of vestibular function, ● Vertigo, ● Peripheral vestibular disorders, ● Central vestibular vertigo
7.	Lower cranial nerve paralysis	● Etiology, clinical features, investigations, and management of following disorders – i. Lesions in Trigeminal nerve, ii. Trigeminal neuralgia, iii. Trigeminal sensory neuropathy,

		iv. Lesions in Facial nerve, v. Facial palsy, vi. Bell's palsy, vii. Hemi Facial spasm, viii. Glossopharangial neuralgia, ix. Lesions of Vagus nerve, x. Lesions of Spinal accessory nerve, xi. Lesions of Hypoglossal nerve. xii. Dysphagia – swallowing mechanisms, causes of dysphagia, symptoms, examination, and management of dysphagia
8.	Cerebro-vascular diseases	● Define stroke, TIA, RIA, stroke in evolution, multi infarct dementia and Lacunar infarct. ● Classification of stroke – Ischemic, hemorrhagic, venous infarcts. ● Risk factors, cause of ischemic stroke, causes of hemorrhagic stroke. ● Classification of hemorrhagic stroke, ● Classification of stroke based on symptoms, stroke syndrome, investigations, differential diagnosis, medical and surgical management.
9.	Head injury	● Etiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications
10.	Higher cortical, neuro psychological and neurobehavioral disorders	● Causes of blackouts, ● Physiological nature of Epilepsy, ● Classification, clinical features, investigations, medical& surgical management of following disorders ● Non-epileptic attacks of childhood, ● Epilepsy in childhood, ● Seizers, and Epilepsy syndromes in

		adult. ● Classification and clinical features of Dyssomnias, Parasomnias, Dementia, Obsessive-compulsive disorders. ● Neural basis of consciousness, causes &investigations of Coma, criteria for diagnosis of Brain death. ● Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, management of Perceptual disorders and Speech disorders
11.	Movement disorders	● Definition, etiology, risk factors, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – i. Parkinson's disease, ii. Dystonia, iii. Chorea, iv. Ballism, v. Athetosis, vi. Tics, vii. Myoclonus, viii. Wilson's disease
12.	Cerebellar and coordination disorders	● Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, management of: i. Congenital ataxia, ii. Friedreich's ataxia, iii. Ataxia talengiectasia, iv. Metabolic ataxia,

		v. Hereditary cerebellar ataxia, vi. Tabes dorsalis vii. Syphilis
13.	Spinal cord disorders	● Functions of tracts, ● Definition, etiology, risk factors, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – i. Spinal cord injury, ii. Compression by IVD prolapse, iii. Spinal epidural abscess, iv. Transverse myelitis, v. Viral myelitis, vi. Syringomyelia, vii. Spina bifida, viii. Sub-acute combined degeneration of the cord, ix. Hereditary spastic paraplegia, x. Radiation myelopathy, xi. Progressive encephalomyelitis, xii. Conus medullaris syndrome, xiii. Bladder & bowel dysfunction, xiv. Sarcodosis
14.	Brain tumors and spinal tumors	● Classification, clinical features, investigations, medical and surgical management
15.	Infections of brain and spinal cord	● Etiology, pathophysilogy, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – i. Meningitis,

		ii. Encephalitis, iii. Poliomyelitis and Post- polio syndrome. ● Complications of systemic infections on nervous system – i. Septic encephalopathy, ii. AIDS, iii. Rheumatic fever, iv. Brucellosis, v. Tetanus, vi. Pertussis
16.	Motor neuron diseases	● Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications of following disorders – i. Amyotrophic lateral sclerosis, ii. Spinal muscular atrophy, iii. Hereditary bulbar palsy, iv. Neuromyotonia v. Post-irradiation lumbosacral polyradiculopathy
17.	Multiple sclerosis	● Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, and complications.
18.	Disorders of neuromuscular junction	● Etiology, classification, signs & symptoms, investigations, management, of following disorders: i. Myasthenia gravis, ii. Eaton-Lambert syndrome, iii. Botulism
19.	Muscle diseases	● Classification, investigations, imaging methods, Muscle biopsy, management of muscle diseases,

		genetic counselling. ● Classification, etiology, signs & symptoms of following disorders – i. Muscular dystrophy, ii. Myotonic dystrophy, iii. myopathy, iv. Non-dystrophic myotonia
20.	Polyneuropathy	● Classification of Polyneuropathies, ● Hereditary motor sensory neuropathy, ● Hereditary sensory and Autonomic neuropathies, ● Amyloid neuropathy, ● Acute idiopathic Polyneuropathies. ● Guillain-Barre syndrome – Causes, clinical features, management of GBS, ● Chronic Idiopathic Polyneuropathies, ● Diagnosis of polyneuropathy, ● Nerve biopsy
21.	Focal peripheral neuropathy	● Clinical diagnosis of focal neuropathy, ● Neurotmesis, ● Axonotmesis, ● Neuropraxia. ● Etiology, risk factors, classification, neurological signs & symptoms, investigations, management, of following disorders – i. RSD, ii. Nerve tumors, iii. Brachial plexus palsy, iv. Thoracic outlet syndrome, v. Lumbosacral plexus lesions, vi. Phrenic & Intercostal nerve lesions, vii. Median nerve palsy,

		viii. Ulnar nerve palsy, ix. Radial nerve palsy, x. Musculocutaneous nerve palsy, xi. Anterior & Posterior interosseous nerve palsy, xii. Axillary nerve palsy, xiii. Long thoracic nerve palsy, xiv. Suprascapular nerve palsy, xv. Sciatic nerve palsy, xvi. Tibial nerve palsy, xvii. Common peroneal nerve palsy, xviii. Femoral nerve palsy, xix. Obturator nerve palsy, xx. Pudental nerve palsy
22.	Paediatric neurology	● Neural development, Etiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – i. Cerebral palsy, ii. Hydrocephalus, iii. Arnold-chiari malformation, iv. Basilar impression, v. Klippel-Feil syndrome, vi. Achondroplacia, vii. Cerebral malformations, viii. Autism, ix. Dandy walker syndrome x. Down's syndrome.
23.	Toxic, metabolic and environmental disorders	● Etiology, risk factors, classification, neurological signs & symptoms, investigations, management, of following disorders – i. Encephalopathy, ii. Alcohol toxicity,

		iii. Recreational drug abuse, iv. Toxic gases & Asphyxia, v. Therapeutic & diagnostic agent toxicity, vi. Metal toxicity, vii. Pesticide poisoning, viii. Environmental & physical insults, ix. Pant & Fungal poisoning, x. Animal poisons, ● Complications of organ transplantation
24.	Introduction, Indications and Complications of following Neuro surgeries	● Craniotomy, ● Cranioplasty, ● Stereotactic surgery, ● Deep brain stimulation, ● Burr-hole, ● Shunting, ● Laminectomy, ● Hemilaminectomy, ● Rhizotomy, ● Microvascular decompression surgery, ● Endarterectomy, ● Embolization, ● Pituitary surgery, ● Ablative surgery - Thalamotomy and Pallidotomy, coiling of aneurysm, Clipping of aneurysm, and Neural implantation

Textbooks recommended:

1. Davidson's Principles and Practice of Medicine
2. Textbook of Neurology- Victor Adams
3. Brains Clinical Neurology.
4. Illustrated Neurology & Neurosurgery

5. Brains Diseases of Nervous System

AP01OT6C4: SOCIOLOGY

Course Description: This course will introduce student to the basic sociology concepts, principles and social process, social institutions in relation to the individual, family and community and the various social factors affecting the family in rural and urban communities in India will be studied.

Sixth Semester (31-36 months)				
Course code &Title	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT6C4- Sociology	45	-	45	3

THEORY

SR. NO.	AREAS	CONTENT
1.	Introduction	● Meaning- Definition and scope of sociology ● Its relation to Anthropology, Psychology, Social Psychology. ● Methods of Sociological investigations- Case study, social survey, questionnaire, Interview and opinion poll methods. ● Importance of its study with special reference to Health Care Professionals
2.	Social Factors in Health and disease situations	● Meaning of social factors ● Role of social factors in health and illness
3.	Socialization	● Meaning and nature of socialization. ● Primary, Secondary and Anticipatory socialization. ● Agencies of socialization
4.	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 setup
5.	Family	● The family, meaning and definitions. ● Functions of types of family ● Changing family patterns ● Influence of family on the individual's health, family and nutrition, the effects of sickness in the family and psychosomatic disease and their importance to physiotherapy

6.	Community	● Rural community: Meaning and features –Health hazards of ruralities, health hazards to tribal community. ● Urban community: Meaning and features- Health hazards of urbanities
7.	Culture and Health	● Concept of Health ● Concept of Culture ● Culture and Health ● Culture and Health Disorders
8.	Social change	● Meaning of social changes. ● Factors of social changes. ● Human adaptation and social change ● Social change and stress. ● Social change and deviance. ● Social change and health programme ● The role of social planning in the improvement of health and rehabilitation
9.	Social Problems of disabled	● Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems: ● Population explosion i. Poverty and unemployment ii. Beggary iii. Juvenile delinquency iv. Prostitution v. Alcoholism vi. Problems of women in employment vii. Geriatric problems viii. Problems of underprivileged
10.	Social Security	● Social security and social legislation in relation to the disabled
11.	Social worker	● Meaning of Social Work ● The role of a Medical Social Worker

Sixth Semester (31-36 months)								
Sl. No.	Courses	Theory				Practical		Total
		Written		IA	Viva	Practical	IA	
		Time	Max. Marks	Max. Marks.	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1	**AP01OT6C1** Occupational Therapy in Orthopedics	3	80	20	20	60	20	200
2	**AP01OT6C2** Occupational Therapy in Neurosciences	3	80	20	20	60	20	200
3	**AP01OT6C3** Clinical Neurology & Neurosurgery	3	80	20	--	--	--	100
4	**AP01OT6C4** Sociology	2	40	10	--	--	--	50

Practical Exam: AP01OT6C1

Marks distribution:

Long case- 40 Marks

Short case- 20 Marks

Viva- 20 Marks

Practical Exam: APO1OT6C2

Marks distribution:

Long case- 40 Marks

Short case- 20 Marks

Viva- 20 Marks

SEMESTER-VII

AP01OT7C1: OCCUPATIONAL THERAPY IN PEDIATRICS AND DEVELOPMENTAL DISABILITIES

Course description: This course explores the neuro-developmental, sensory integrative and bio-mechanical influences on the development of the child along with the interaction of child-environment and context is also explored. Assessment and analysis of the occupational performance of the child with motor impairment is examined in detail.

Course objective: On completion of this course the student will understand the principles of normal and abnormal development in children, select and use appropriate evaluation methods to identify occupational limitation of the child at home and school or community.

SI. NO.	TOPIC	CONTENT	HOURS
1.	Overview of occupational therapy with children	● Multidisciplinary rehabilitation team ● Feeding and oral motor skills ● Visual perceptual disorders	10
2.	Paediatric occupational therapy assessment process	● Developmental reflexes ● Tone evaluation ● Voluntary control evaluation ● Transitional positions and patterns ● Balance evaluation ● Cognitive and perceptual evaluation	10
3.	Frame of reference	● Neurodevelopmental FOR ● Sensory integration FOR ● Biomechanical FOR	10
4.	Developmental Disabilities	● Cerebral palsy ● Mental retardation and down syndrome ● Hydrocephalus and neural tube defect ● High risk infants ● GDD ● Muscular dystrophies	15
5.	Functions & dysfunctions of hand		5
6.	Psychiatric disorder in childhood and adolescents	● Sensory Processing Disorders like ● Autism Spectrum Disorder, ● Attention Deficit Disorder, ● Attention Deficit Hyperactivity Disorder, ● Developmental Co-ordination disorder, ● learning disabilities ● Writing skills and disorder	15

7.	Assistive and adaptive devices related to paediatric occupational therapy		5
8.	Seizure disorders	● Aetio -pathogenesis, classification and manifestation. Clinical presentation. ● Assessment based on appropriate FOR. ● Prognostic determinants based on conservative, operative management. ● Strategies to optimize motor, sensory, visual, cognitive, endurance, components of function. ● Clinical reasoning for selection of therapeutic intervention models - Rehabilitative and Adaptive /compensatory.	5

Textbooks recommended:

- Occupational Therapy for Children, Jane Case Smith Occupational Therapy for Children, 2nd Edition - Pratt PN, Allen AS
- Willard and Spackmann's Occupational Therapy, 8 edition - Hopkin. Helen L, Smith Helen D
- Sensory Integration: Theory and Practice, 2nd Edition.-- Fisher and Bundy
- Frames of Reference for Pediatric Occupational Therapy, 2nd edition --- Kramer: Paula, Hindjosa Jim
- Treatment of Cerebral Palsy-and Motor Delay - Sophie Levitt Early Diagnosis and Therapy in Cerebral Palsy - Alfred I. Scherzer, Ingrid . Tshcarnuter...
- Orthopedic aspects of Cerebral Palsy - Eugene Bleck ..
- Introduction to Learning Disability - Daniel P. Hallaham, James M. Kauffmann, John Lloyd

AP01OT7C3: BIOSTATISTICS (Section –A) & RESEARCH METHODOLOGY (Section B)

Course description: This course provides basic knowledge in selected important topics in biostatistics. This course introduces the students to the types of data, data collection, tabulation, analysis and interpretation of data using suitable statistical tools. This course helps the student to understand the course on Evidence based practice also in their project work in 8th semester.

Seventh Semester (37-42 months)				
Course code & Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT 7C3- Biostatistics Research Methodology	60	-	60	4

BIOSTATISTICS
(Section- A)

SR. NO.	AREAS	CONTENT
1.	Introduction	● Meaning, definition, characteristics of statistics., ● Importance of the study of statistics, ● Branches of statistics, ● Statistics and health science including Occupational therapy, ● Parameters and Estimates, ● Descriptive and inferential statistics, ● Variables and their types, ● Measurement scales
2.	Tabulation of Data	● Basic principles of graphical representation, ● Types of diagrams – i. Histograms, ii. Frequency polygons, iii. Smooth frequency polygon,

		iv. Cumulative frequency curve, v. Normal probability curve
3.	Measure of Central Tendency	● Need for measures of central Tendency, ● Definition and calculation of mean – ungrouped and grouped, Meaning, interpretation and ● Calculation of median ungrouped and grouped., ● Meaning and calculation of mode, ● Comparison of the mean, median and mode, ● Guidelines for the use of various measures of central tendency
4.	Probability and Standard Distributions	● Meaning of probability of standard distribution, ● The binominal distribution, ● The normal distribution, ● Divergence from normality – i. Skewness, ii. Kurtosis
5.	Sampling techniques	● Need for sampling - Criteria for good samples, ● Application of sampling in community, ● Procedures of sampling and sampling designs errors, ● Sampling variation and tests of significance
6.	Analysis of variance & covariance	● Analysis of variance (ANOVA), ● What is ANOVA? ● Basic principle of ANOVA, ● ANOVA technique, ● Analysis of Co variance (ANACOVA).
7.	Format of scientific documents	● Structure of protocols, ● Formats reporting in scientific journals, ● Systematic reviews

		● Meta-analysis

RESEARCH METHODOLOGY
(Section-B)

SR. NO.	AREAS	CONTENT
1.	Introduction to Research methodology	● Meaning of research, ● Objectives of research, ● Motivation in research, ● Types of research & research approaches, ● Research methods vs methodology, ● Criteria for good research, ● Problems encountered by researchers in India.
2.	Research problem	● Statement of research problem, ● Statement of purpose and objectives of research problem, ● Necessity of defining the problem.
3.	Research design	● Meaning of research design, ● Need for research design, ● Features for good design, ● Different research designs, ● Basic principles of research design.
4.	Sampling Design	● Criteria for selecting sampling procedure, ● Implications for sample design, ● Steps in sampling design, ● Characteristics of good sample design, ● Different types of sample design
5.	Measurement & scaling techniques	● Measurement in research- ● Measurement scales, ● Sources of error in measurement, ● Technique of developing measurement tools, ● Meaning of scaling,

		● Its classification. ● Important scaling techniques
6.	Methods of data collection	● Collection of primary data, ● Collection data through questionnaires & schedules, ● Difference between questionnaires & schedules
7.	Sampling fundamentals need for sampling & some fundamental definitions, important sampling distributions	
8.	Processing & analysis of data	● Processing operations, ● Problems in processing, ● Types of analysis, ● Statistics in research, ● Measures of central tendency, ● Dispersion, ● Asymmetry, ● Relationship
9.	Testing of hypothesis	● What is hypothesis? ● Basic concepts concerning testing of hypothesis, ● Procedure of hypothesis testing, ● Measuring the power of hypothesis test, ● Tests of hypothesis, ● Limitations of the tests of hypothesis
10.	Computer technology	● Introduction to Computers, ● Computer application in research, ● Computers & researcher

Textbooks recommended:

1. Elements of Health Statistics: Rao.N.S.N
2. An introduction of Biostatistics: Sunder Rao.P.S.S.
3. Methods in Bio-Statistics 6thEdn. 1997: B.K. Mahajan
4. Biostatistics: A manual of Statistics Methods: K. Visweswara Rao
5. Elementary Statistics 1stEdn, 1990. in Medical Workers: Inderbir Singh
6. Statistics in Psychology and education: Great and Henry
7. An Introduction to Gupta C.B. Statistical Methods, 1972: Ram Prasad & Sons

8. Basic Statistics, 3rd Edn..: Simpsory G. Kaftha. P
9. Research; Principles and Methods: L Denise F. Poli & Hungler
10. Fundamentals of Research, 4thEdn.: David J. fox

AP01OT7C2: OCCUPATIONAL THERAPY IN MENTAL HEALTH

Course description: This course provides an overview of the signs and symptoms of common psychiatric disorders and their influence on the occupational performance of a person. Student will learn to assess and analyse the occupational performance of individuals with psychiatric impairment. The frames of reference, approaches and techniques to address psychosocial problems in occupational therapy intervention are examined. This course introduces common psychosocial conditions and discusses the occupational therapy management

Course objective: On completion of this course the student will learn to identify psychiatric sign and symptoms and respond to them appropriately. They will understand their influence on occupational performance and their prognosis. The student will learn the occupational therapy approaches / frames of reference, assessment methods & specific treatment techniques that guide the intervention for individuals with psychosocial dysfunction.

SI. NO.	TOPIC	CONTENT	HOURS
1.	Psychiatric occupational therapy assessment process	• Mini Mental Status Examination (MMSE). • Observations • Interviews and Checklists • Standardized and Non-Standardized Evaluation Techniques – Reisburg Allen's Cognitive Assessment Scale	5
2.	Frames of reference in mental health	• Model of human occupation • Cognitive behavioural FOR • Psychodynamic FOR • Humanistic FOR • Developmental FOR • Behavioural FOR	10
3.	Clinical conditions in psychiatry	• Schizophrenia • Substance related disorders • Manic depressive psychosis • Neurotic & stress related disorders • Epilepsy • Other psychotic disorders	35
4.	Treatment techniques in occupational therapy practice	• Group therapy • Family therapy • Social skills training • Assertiveness training • Stress management • Therapeutic use of self and counselling skills • Responding to signs and symptoms • Safety techniques	15

		• Daily living skills • Behavioral therapy • Projective techniques • Industrial activities • Arts and creative activities	
5.	Cognitive and sensorimotor activities	• Sensory Integrative Therapy and recent advances Allen's Cognitive Scale on patients • Analysis of activity in patients graded as level IV of Allen's cognitive scale	5
6.	Long term day care	• Role of an occupational therapist as a team member in: • Community based rehabilitation • Half way homes • Day care centres • Sheltered workshops • Long- term care. • Psychiatric unit of acute care hospitals • Child guidance clinic. • Care Givers Education • Various Support Group	5

Textbooks recommended:

- Occupational Therapy and Mental Health, Fourth edition - Jennifer Creek and Lesley Lougher
- Psychosocial frames. of reference, Third edition - Mary Ann Giroux Bruce and Barbara Borg: ..
- Mental Health Concepts and Techniques for the Occupational Therapy Assistant, Third and Fourth edition - Mary Beth Early;
- The Practice of Psychosocial Occupational Therapy Third edition - Linda Finlay Psychosocial Occupational Therapy: A Clinical Practice - Elizabeth Cara and Anne Macrae
- Psychiatric Occupational Therapy: A workbook of practical skills - P eggy Denton Occupational Therapy in Short-term Psychiatry, Third edition
- Moya Willson Occupational Therapy in long-term Psychiatry, Second edition - Moya Willson;
- A Short Textbook of Psychiatry, Sixth edition - Niraj Ahuja Kaplan and Saddock's Synopsis of Psychiatry; Tenth edition - Kaplan

AP01OT7C4: CLINICAL CARDIOVASCULAR AND PULMONARY CONDITIONS

Course description: Following the basic science and clinical science course, this course introduces the student in cardio-thoracic conditions which commonly cause disability.

Seventh Semester (37-42 months)				
Course Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT7C4- Clinical cardiovascular & pulmonary conditions	60	-	60	4

SI. NO.	**TOPIC**	**CONTENT**	**HOURS**
1.	Anatomy and Physiology	● Respiratory system i. Upper respiratory tract ii. Lower respiratory tract – Trachea, Bronchial tree, Bronchopulmonary segments iii. Respiratory unit, hilum of lung. iv. Muscles of respiration v. Pleura, intra pleural space, intra pleural pressure, surfactant vi. Mechanics of respiration – Chest wall movements, lung & chest wall compliance vii. V/Q relationship, airway resistance viii. Respiratory centre, Neural & chemical regulation of respiration ix. Lung volumes and lung capacities, Spiro meter, lung function test x. Pulmonary circulation, Lung sounds, cough reflex ● Cardiovascular systems i. Chambers of heart, semi lunar and atria ventricular valves	

		ii. Coronary circulation, conductive system of heart iii. Cardiac cycle, ECG, Heart sounds iv. Blood pressure, pulse, cardiac output	
2.	Cardio Vascular system	● Define, etiology, pathogenesis, clinical features, complications, ● Conservative and surgical management of the following conditions. ● Ischemia heart disease ● Myocardial infarction ● Heart failure ● Cardiac arrest ● Rheumatic fever ● Hypertension ● Infective endocarditis ● Myocarditis & cardiomyopathy ● Cardiovascular Disease: Examination of the Cardiovascular System Investigations: ● ECG, Exercise Stress Testing, Radiology ; Clinical manifestations of Cardiovascular disease ; Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases and disorders of the heart : Pericarditis, Myocarditis, Endocarditis, Rheumatic Fever – resulting in valve disorders, Ischemic Heart Disease, Coronary Valve Disease, Congenital disorders of the Heart, Cardiac Arrest ; Examination and Investigations of diseases of arteries and veins ; Hypertension : Definition, causes, classification, types, assessment, investigations and management. ● Disorders of the Heart – Definition, Clinical features, diagnosis and choice of management for the following disorders: Congenital Heart diseases – Acyanotic congenital heart disease & Cyanotic congenital heart disease : Patent Ductus Arteriosus, Coarctation of Aorta, Atrial Septal Defect, Ventricular Septal Defect, Tetraology of Fallot, Transposition of Great Vessels ; Acquired Heart Disease – Mitral Stenosis & Insufficiency, Aortic Stenosis and Insufficiency, Ischemic Heart Disease – Coronary Artery Disease, Cardiac tumors.	
3.	Respiratory System	● Respiratory Disease : Examination of the Respiratory System – Investigations : Chest	

		Radiographs, Pulmonary Function Testing, Arterial Blood Gas Analysis ; Clinical manifestations of Lung disease ; Patterns of lung disease – Chronic Obstructive Lung Disease and Restrictive Lung Disease ; Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following lung diseases : Chronic Bronchitis, Emphysema, Asthma, Bronchiectasis, Cystic Fibrosis, Upper Respiratory Tract Infections, Pneumonia, Tuberculosis, Fungal Diseases, Interstitial Lung Diseases, Diseases of the pleura, diaphragm and chest wall ; Respiratory failure – Definition, types, causes, clinical features, diagnosis and management. ● Chest wall disorders- Definition, Clinical features, diagnosis and choice of management for the following disorders – chest wall deformities, chest wall tumors, Spontaneous Pneumothorax, Pleural Effusion, Empyema Thoracis, Lung abscess, Bronchiectasis, Tuberculosis, Bronchogenic Carcinoma, Bronchial Adenomas, Metastatic tumors of the Lung, tracheal Stenosis, Congenital tracheomalacia, Neoplasms of the trachea, Lesions of the Mediastinum. Carcinoma of the female breast.	

Textbooks recommended:

1. Davidson’s Principles and Practice of Medicine
2. Harrison’s Internal Medicine
3. Braunwald Text of Cardiology
4. Textbook of Cardiology by Hurst

COURSE AND DISTRIBUTION OF MARKS OF UNIVERSITY EXAMINATION:

Seventh Semester (37-42 months)								
Sl. No.	Courses	**Theory**				**Practical**		Total
		Written		Viva-Voce	IA	Practical	IA	
		Time	Max. Marks	Max. Marks	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1	**AP01OT7C1** Occupational therapy in Pediatrics	3	80	20	20	60	20	200
2	**AP01OT 7C2** **Section A-** Biostatistics	3	40	--	10	--	--	100
	Section B- Research Methodology		40	--	10	--	--	
3	**AP01OT7C3** Occupational therapy in Mental health	3	80	20	20	60	20	200
4	**AP01OT7C4** Clinical cardiovascular & pulmonary conditions	2	40	--	10	--	--	50

Practical Exam: AP01OT7C1

Marks distribution:

Long case- 40 Marks

Short case- 20 Marks

Viva- 20 Marks

Practical Exam: AP01OT7C3

Marks distribution:

Long case- 40 Marks

Short case- 20 Marks

Viva- 20 Marks

SEMESTER-VIII

AP01OT8P1: RESEARCH PROJECT

The project is mandatory for a student to understand the steps in research. This also gives opportunity for a student to work in group. The project may be a case study, survey, or of recent technique or literature reviews and etc. to make the student to have research mind and to facilitate for higher studies.

Eighth Semester (43-48 months)				
Course Titles	**Hours**			**Weekly class hours**
	Theory	**Practical**	**Total**	
AP01OT 8P1- Research Project	15	30	45	3
AP01OT 8P2-Elective posting	--	200	200	

APO1OT8C1 ADVANCES IN OCCUPATIONAL THERAPY PRACTICE

***C*ourse description:** This course includes ethical aspects & essential skills (communication, clinical reasoning & managerial) for occupational therapy practice. The course also discusses issues that need to be considered influence the occupational therapy professional.

Course objectives: On completion of this course the students will learn the essential interaction skills for practice, clinical reasoning, evidence-based practice, administration & organizational skills in managing practice. The students will also learn about professional organizations & socio-legal considerations that influence practice.

SR. NO.	AREA	CONTENT	DIDATIC HOURS
1.	Ethics in Occupational Therapy	● Key Terms in Ethical issues. ● Ethical Jurisdiction of the Standards and Code of Ethics of All India Occupational Therapist's Association (AIOTA) & American Occupational Therapy Association (AOTA). ● Ethical dilemmas and conflicts in Occupational Therapy practice, Problem solving issues.	2
2.	Service management	● **Functions and strategies** i. Definition of administration. ii. Management styles. iii. Management by Objectives. iv. Hierarchy in Organization. v. Organizational Pattern. vi. Job description. vii. Job Specification. viii. Policies and procedures. ix. Productivity. ● **Quality Assurance (QA):** i. What is Quality Assurance? ii. Quality Assurance History. iii. Utilization Review. iv. Program Evaluation. v. Quality Assurance Monitoring. ● **Fiscal Management:** i. Budgeting. ii. Type of Budgeting, Process and	6

		methods. iii. Balance sheet. iv. Direct versus indirect costs. v. Chart of accounts. ● **Marketing:** i. Marketing plan. ii. Consumer research. ● **Documentation:** i. Guidelines for documentation. ii. Relevant, Understandable, Measurable, Behavioral Assessment (RUMBA). iii. Problem Oriented Medical Record (POMR). iv. Subjective Objective Assessment and Planning (SOAP). v. SMART vi. Goal Attainment Scale (GAS). vii. Computerized documentation.	
3.	The Human and Non-Human Environments and the Occupational Therapy Process.	● Definition of environment & types of environments. ● Components of human and non-human environments, science of environmental psychology. ● Its application to the practice of Occupational Therapy.	4
4.	Industrial Rehabilitation	● **Introduction** i. Historical Aspects for the development of Industrial Rehabilitation. ii. Industrial Rehab team. iii. Different Product lines of Industrial Rehabilitation. ● **Work assessment:** i. Work Conditioning and Hardening. ii. Classification of Work Levels. iii. Work, Physical and Functional Capacity Evaluation. iv. Job Analysis. v. Ergonomic Consultation. Physical Injury Prevention Program. vi. Symptom Magnification. vii. Expert Witness Testimony. viii. Consultation for Vocational Training.	6
5.	Home Care and Private Practice	● Home care delivery model, its	4

		implementation, parameters of Homecare, delivery service, skills required for effective practice, constraints, influence of various issues that shape home care practice. ● Role of Occupational Therapy practitioner in private practice.	
6.	Wellness Programs & Preventive Therapy.	● Definition of health, health promotion and wellness. ● Role of an occupational therapist in wellness programs and preventive therapy.	4
7.	Assistive Technology	● **Assistive technology solutions** The HAAT Model Strategies and methods of clinical implementation in the following- i. Posture. ii. Mobility. iii. Communication. iv. Manipulation. v. Sensory. vi. Cognition. vii. Motor. viii. ADL. ix. Affective. ● **Computer application in Occupational Therapy** i. Technology; assistive & computer technology application in OT ii. Use of computer as a tool in clinical implementation Software selection criteria & methods. iii. Method of clinical implementation in motor, sensory, cognition, ADL, affective domain.	8
8.	Stress Management	● Definitions, types and physiology of stress. ● Stress factors, stress response and techniques in stress management. ● Application of Mental techniques- i. Jacobson's. ii. Shavasana. iii. Breathing techniques. iv. Biofeedback.	4

		v. Acupressure. vi. Mental imagery. vii. Lifestyle management groups. viii. Laughter.	
9.	Disability management in Occupational Therapy	● Milestones & response cycle. Role of nervous system in Sexual functions, effect of nervous, cardiac & pulmonary dysfunctions on sexual functioning. ● Levels & formats provided to patients regarding sexual counseling appropriate to Occupational Therapy. ● Models of intervention in sexual problems. ● PLISSIT MODEL.	4
10.	Pain Management in Occupational Therapy	● Definition, Classification, Assessment of pain, pain behaviors & intervention methods as applied in Occupational Therapy. ● Theories and principles of pain management in various Neuro-Musculo-Skeletal conditions. Mechanism of wound healing and pain perception.	4
11.	Physical Agent Modalities	● Principles and regulatory guidelines for the use of physical agent modalities. ● Introduction, clinical application, precautions and contraindications of various physical agents such as thermal modalities, electrotherapy and therapeutic ultrasound and laser therapy. ● Practice of TENS, Ultrasound, thermal modalities, laser, Neuromuscular electrical stimulation (NMES), IFC as adjunct to Occupational therapy intervention to improve task performance.	8
12.	Adjunctive Therapies	● **Biofeedback** i. Definition of biofeedback. Principles, foundations and elements of biofeedback system. ii. Neurophysiological clinical reasoning in biofeedback system. iii. Types of biofeedback system and clinical applications with advantages	19

		of biofeedback iv. system as an adjunct to Occupational Therapy. v. Biofeedback techniques, EMG biofeedback, use of audio- visual and associated biofeedback techniques. ● **Yoga as an adjunct to Occupational Therapy** i. Principles and physiological effects of yogic postures and breathing practices in yoga. Basic postures of Yoga Sana and Pranayama. ii. Clinical applications, indications, contraindications and precautions in yogic exercise prescriptions. iii. Relaxation, meditation practices in yoga, therapeutic applications in OT. iv. Practice of basic yoga postures, breathing patterns and v. Pranayama. ● **Tai Chi as an adjunct to Occupational Therapy** i. Introduction, concepts of practice, relation to Occupational therapy practice as an adjunct, whole body co-ordination application to improve balance, preparatory towards spatial performance and navigation. ii. Basic patterns of Tai Chi to improve balance and motor control. ● **Aquatic Therapy** i. Properties of water and principles of aquatic therapy. Definition, Goals, Indications, Precautions & Contraindications of aquatic therapy. ii. Types of aquatic exercises and clinical application ● **Kinesio-taping** i. Introduction, basic functional concepts of Kinesio-taping and description of Kinesio- tape. ii. Types of tapes and taping. iii. Kinesio-taping application technique, indications, precautions and contraindications of Kinesio-taping	

		technique and its clinical applications. ● **Myo-fascial Release** i. Introduction, concepts, anatomy and physiology of the fascia. ii. Structural and Physiological effects of Myo-fascial release techniques. iii. Various techniques of Myo- fascial release and interventions for the treatment iv. of contractures, body posture and balance.	
13.	Introduction to Evidence Based practice & Professional reasoning in OT	● Introduction & Definition of Evidence Based Practice Introduction to Professional Reasoning ● Aspects of professional reasoning (Scientific, Narrative, Pragmatic, Ethical & Interactive reasoning)	2

Textbooks recommended:

1. Willard and Spackman's Occupational Therapy by Elizabeth BlesedellCrepeau, Ellen S. Cohn, Barbara A. Boyt Schell. Published by Lippincott Williams & Wilkins
2. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby
3. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins
4. Occupational Therapy and Physical Dysfunction : Principles, skills and practice , Fifth edition - Annie Turner
5. Therapeutic Exercise by John V. Basmajian& Steven L. Wolf. Published by Williams & Wilkins
6. Krusen's Handbook of Physical Medicine& Rehabilitation by Frederick J. Kottke, Justus F. Lehmann. Published by W. B. Saunders
7. Rehabilitation Medicine, Principles & Practice by Joel A. DeLisa, Bruce M. Gans. Published by Lippincott Williams & Wilkins
8. Biofeedback: Principles & Practice for Clinicians by John V. Basmajian. Published by Williams & Wilkins
9. Therapeutic Exercise, Foundation & Techniques by Carolyn Kisner& Lynn Allen Colby. Published by F. A. Davis Company
10. Hunter, Mackin, Callahan's Rehabilitation of the Hand and Upper Extremity by Evelyn Mackin, Anne D. Callahan. Published by Mosby
11. Yogic Exercises, physiologic and psychic processes by S. Dutta Ray. Published by Jaypee Brothers
12. Occupational Therapy and Mental Health by Jennifer Creek. Published by Churchill Livingstone
13. Neurological Rehabilitation by Darcy A. Umphred. Published by Mosby
14. Physical Agent Modalities: Theory and Application for the Occupational Therapist by Alfred G. Bracciano. Published by Thorofare NJ SLACK Inc
15. Rehabilitation Medicine by Joseph Goodgold. Published by The C.V. Mosby Company

16. Client - Centered practice in Occupational Therapy: A Guide to Implementation - Thelma Sumsion
17. Concepts of Occupational Therapy, Fourth Edition - Kathlyn .L. Reed & Sharon Nelson Sanderson

AP01OT8C2 OCCUPATIONAL THERAPY IN COMMUNITY PRACTICE

Course Description: Builds ability to screen and evaluate adult function in community. Prepares student to analyse, apply occupationally based activities appropriate to age and client needs, assess client for participation or restriction in community re-entry, evaluate for need of assistive technologic devices, assess for application of orthotics and prosthetics. Offers theoretical concepts to assess and intervene individual and population in institutions and de addiction canters, homes and community; participation in psychosocial rehabilitation driver assessment and simulated training. Assist disability rating in various disability states using ICF 2000, assess impact on family system. Assessment for access in community and home environment. Accommodation of the disabled in community.

SI. NO.	AREA	CONTENT	HOURS
1.	Community rehabilitation	• Definition, models, structure, process and outcome of CBR. Role of Occupational Therapy and the contributions of other health professionals in CBR. • Differentiate between CBR and IBR	15

		• Fall prevention to enhance mobility and safety. • Driving: Prerequisites for driving- visual perceptual assessment and training.	
2.	Occupational Health	• Definition of occupational health. Role of Occupational Therapy in occupational disorders like occupational lung disease. • Medical and engineering measures in prevention of occupational diseases. • Assessment of environment, and education on preventive measures.	15
3.	Occupational Therapy for Disaster management	• Anticipated calamities or disasters in India • Preventive role • Management in acute & post disaster events as a team member.	10
4.	Legislation policies and accessibility issues	• International Classification of Functioning, Disability & Health: WHO's ICF 2001 & older editions of ICIDH. • Magnitude of disability problems, its causes & future trends. • Persons with Disability Act (1995), • National Trust Act 1999, • RCI Act 1992 by	10

		Government of India. ● Basic concepts of disability evaluation and certification in India and its Social Legislation. ● Prevention & detection of disability & Role of Occupational Therapy in disability prevention. ● Practice administration of assessment procedures using ICF and ICIDH models in disability evaluations ● Role of occupational therapy in optimizing home, work and community accessibility: Specific interventions for access to the home, work and community environment. ● Factors affecting effectiveness of intervention strategies.	
5.	Organisation and Administration	● Principles of organization & administration. ● Organizational chart. ● Starting a new Rehabilitation Centre – its procedure, survey, and interview& planning. ● Practical in procedure and policies of organization.	10
6.	Community care & informal caring	● Innovative low-cost aids & appliances with respect to therapeutic equipment & adaptive devices, splints &	15

		mobility aids used in community-based rehabilitation set -ups ● Assessment and fabrication of low-cost devices in community	

Textbooks recommended:

1. Park's text book of Preventive and Social medicine by K. Park. Published by Banarsidas Bhanot.
2. Disabled village children, A guide for Community Health, Workers, Rehabilitation Workers & Families by David Werner. Published by The Hesperian Foundation.
3. Willard and Spackman's Occupational Therapy by Elizabeth BlesedellCrepeau, Ellen S. Cohn, Barbara A. Boyt Schell. Published by Lippincott Williams & Wilkins.
4. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins.
5. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby.
6. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by Annie Turner, Marg Foster, Sybil E. Johnson. Published by Churchill Livingstone.
7. Physical Rehabilitation by Susan B. O'Sullivan, Thomas J. Schmitz. Published by F. A. Davis Company.Indian Reprint by Jaypee Brothers.
8. Traction and Orthopaedic Appliances by John D. M. Stewart, Jeffrey P. Hallett. Published by Churchill Livingstone.
9. Atlas of Orthoses and Assistive Devices by Bertram Goldberg, John D. Hsu. Published by F. A. Davis Company.
10. Hand Splinting: Principles & Methods by Elaine Ewing Fess, Karan S. Gettle, James W. Strickland. Published by Mosby. 9. WHO's ICF Manual 2001.
11. Guidelines for evaluation of various disabilities and procedure for certification - By Ministry. of Social Justice and Empowerment Notification 2001
12. Objective Evaluation of Impairment and Ability in Locomotor Handicapped – Dr. SabapathyvinayagamRamar – 1993.
13. Community Based Rehabilitation by Malcolm Peat. Published by W. B. Saunders
14. Sociology and Occupational Therapy: An integrated approach by Derek Jones, Sheena E.E. Blair, Terry Hartery. Published by Churchill Livingstone
15. Introduction to Sociology by VidhyaBhushan and Sachdeva. Published by KitabMahal, Allahabad
16. Indian social problems: social disorganization and reconstruction by Gurmukh Ram Madan, Published by Allied Publishers. Original by University of Michigan

Clinical Postings:

1. Occupational Therapy OPD
2. Neurology, Neurosurgery & Neuro ICU
3. Community-PHC
4. Orthopedics
5. General Medicine & MICU
6. General Surgery & CTS ICU
7. Developmental Pediatrics & Child Guidance Clinic
8. Geriatric – Old Age Homes
9. Industrial Visits - Ergonomics

COURSE AND DISTRIBUTION OF MARKS OF UNIVERSITY EXAMINATION:

Eighth Semester (43-48 months)								
Sl. No.	Courses	**Theory**				**Practical**		Total
		Written		Viva-Voce	IA	Practical	IA	
		Time	Max. Marks	Max. Marks.	Max. Marks	Max. Marks	Max. Marks.	Max. Marks
1	**AP01OT8C1** Advances in Occupational therapy practice issues	3	80	20	20	60	20	200
2	**AP01OT8C2** Occupational therapy in community practice	2	40	--	10	--	--	50
	AP01OT8P1 Project Elective Subject	--	50	80	20	--	--	150

Practical Exam pattern: AP01OT8C1

Marks distribution:

Longcase-40Marks

Shortcase-20Marks

Viva-20Marks

ProjectPresentation-80Marks

INTERNSHIP

The internship time period provides the students the opportunity to continue to develop confidence and increased skill in simulation and treatment delivery. Students will demonstrate competence in beginning, intermediate, and advanced procedures in both areas. Students will participate in advanced and specialized treatment procedures. The student will complete the clinical training by practicing all the skills learned in classroom and clinical instruction. The students are expected to work for minimum 7 hours per day.

1. **Initial Assessment Documentation:** Clinical staff must document the following information:

    a. Initial assessment documented based on SOAP format.
    b. Subjective examination (symptomatic)
    c. Objective examination (measureable, observable)
    d. Action/Analysis (interpretation of current condition/intervention provided)

e. Plan of action
f. Written or verbal feedback to the client or other relevant careers
g. Discharge plan documented
h. Agreement to treatment plan by patient or "person responsible"

2. **Progress Documentation:** Progress documentation may include the following information:

a. Any individual intervention should be documented in SOAP format (including response to intervention/s using outcome measures)
b. Oral consent obtained and documented when there is a significant change in treatment/ treatment options/ status of patient's health.
c. Written consent obtained for designated invasive procedures
d. Change in status or events that may affect discharge plans/goals
e. Documented consultation with key clinical team member