PRESIDENCY UNIVERSITY
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PROGRAMME REGULATIONS & CURRICULUM 2026-31

PRESIDENCY SCHOOL OF ALLIED AND HEALTHCARE PROFESSIONS

BACHELOR OF OCCUPATIONAL THERAPY (B.OT)

PRESIDENCY UNIVERSITY
Presidency University Act, 2013 of the Karnataka Act No. 41 of 2013 | Established under Section 2(f) of UGC Act, 1956
Approved by AICTE, New Delhi | Approved By BCI
Bengaluru

Presidency School of Allied and Healthcare Professions

BACHELOR OF OCCUPATIONAL THERAPY

(B.OT)

Program Regulations and Curriculum

Based on Competency Based Curriculum

Program: BACHELOR OF OCCUPATIONAL THERAPY

(B.OT)

2026-2030

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PART A – PROGRAM REGULATIONS

1. Vision & Mission of the University and the School / Department

1.1 Vision of the University

To be a Value-driven Global University, excelling beyond peers and creating professionals of integrity and character, having concern and care for society.

1.2 Mission of the University

- Commit to be an innovative and inclusive institution by seeking excellence in teaching, research and knowledge-transfer.
- Pursue Research and Development and its dissemination to the community, at large.
- Create, sustain and apply learning in an interdisciplinary environment with consideration for ethical, ecological and economic aspects of nation building.
- Provide knowledge-based technological support and services to the industry in its growth and development.
- To impart globally-applicable skill-sets to students through flexible course offerings and support industry's requirement and inculcate a spirit of new-venture creation.

1.3 Vision of Program: Bachelor of Occupational Therapy (B.OT)

To be a nationally and globally recognized center of excellence in occupational therapy education, research, and clinical practice, committed to developing competent, ethical, and compassionate professionals who contribute significantly to health promotion, disease prevention, rehabilitation, and evidence-based patient care across all levels of healthcare.

1.4 Mission of Program: Bachelor of Occupational Therapy (B.OT)

- To deliver a competency-based education that integrates scientific knowledge with clinical expertise, fostering critical thinking, lifelong learning, and professional excellence.
- To prepare occupational therapists as first-contact autonomous practitioners capable of functioning as integral members of interdisciplinary healthcare teams.
- To promote leadership, ethical practice, social responsibility, and cultural sensitivity among graduates for holistic patient care.
- To encourage innovation and research that advances the science and practice of occupational therapy and addresses national and global health challenges.

2. Preamble to the Program Regulations and Curriculum

This is the subset of Academic Regulations, and it is to be followed as a requirement for the award of Bachelor of Occupational Therapy (B.OT) degree.

The curriculum for the Occupational Therapy program is designed in alignment with the Choice Based Credit System (CBCS), aims to develop competent ethical and skilled professionals through a competency-based education model focusing on clinical excellence evidence-based practice and interdisciplinary learning preparing graduates to contribute to rehabilitation health promotion and patient-centred care across diverse healthcare settings.

In exercise of the powers conferred by and in discharge of duties assigned under the relevant provision(s) of the Act, Statutes and Academic Regulations, 2026 of the University, the Academic Council hereby makes the following Regulations.

3. Short Title and Applicability

a. These Regulations shall be called the Bachelor of Occupational Therapy (B.OT) Degree Program Regulations and Curriculum 2026-2031.

b. These Regulations are subject to, and pursuant to the Academic Regulations.

c. These Regulations shall be applicable to the ongoing Bachelor of Occupational Therapy (B.OT) Degree Programs of the 2026-2031 batch, and to all other Bachelor of Occupational Therapy (B.OT) Degree Programs which may be introduced in future.

d. These Regulations shall supersede all the earlier Bachelor of Occupational Therapy (B.OT) Degree Program Regulations and Curriculum, along with all the amendments thereto.

e. These Regulations shall come into force from the Academic Year 2026-2027.

4. Definitions

In these Regulations, unless the context otherwise requires:

a. *"Academic Calendar"* means the schedule of academic and miscellaneous events as approved by the Vice Chancellor;

b. *"Academic Council"* means the Academic Council of the University;

c. *"Academic Regulations"* means the Academic Regulations, of the University; d. *"Academic Term"* means an Year;

e. *"Act"* means the University Act, 2013;

f. *"Basket"* means a group of courses bundled together based on the nature/type of the course;

g. *"BOE"* means the Board of Examinations of the University;

h. *"BOG"* means the Board of Governors of the University;

i. *"BOM"* means the Board of Management of the University;

j. *"BOS"* means the Board of Studies of a particular Department/Program of Study of the University; k. *"CGPA"* means Cumulative Grade Point Average as defined in the Academic Regulations;

l. *"Clause"* means the duly numbered Clause, with Sub-Clauses included, if any, of these Regulations; m. *"COE"* means the Controller of Examinations of the University;

n. *"Course In Charge"* means the teacher/faculty member responsible for developing and organising the delivery of the Course;

o. *"Course Instructor"* means the teacher/faculty member responsible for teaching and evaluation of a Course;

p. *"Course"* means a specific subject usually identified by its Course-code and Course-title, with specified credits and syllabus/course-description, a set of references, taught by some teacher(s)/course-instructor(s) to a specific class (group of students) during a specific Academic Term;

q. *"Curriculum Structure"* means the Curriculum governing a specific Degree Program offered by the University, and, includes the set of Baskets of Courses along with minimum credit requirements to be earned under each basket for a degree/degree with specialization/minor/honours in addition to the relevant details of the Courses and Course catalogues (which describes the Course content and other important information about the

Course). Any specific requirements for a particular program may be brought into the Curriculum structure of the specific program and relevant approvals should be taken from the BOS and Academic Council at that time.

r. *"DAC"* means the Departmental Academic Committee of a concerned Department/Program of Study of the University;

s. *"Dean"* means the Dean / Director of the concerned School;

t. *"Degree Program"* includes all Degree Programs;

u. *"Department"* means the Department offering the degree Program(s) / Course(s) / School offering the concerned Degree Programs / other Administrative Offices;

v. *"Discipline"* means specialization or branch of B.Sc. Degree Program;

w. *"HOD"* means the Head of the concerned Department;

x. *"L-T-P-C"* means Lecture-Tutorial-Practical-Credit – refers to the teaching – learning periods and the credit associated;

y. *"MOU"* means the Memorandum of Understanding;

z. *"NCAHP"* means National Commission for Allied Health Professionals;

aa. *"Occupational Therapy"* means a holistic, evidence-based, client-centred first contact and/or referral profession of the modern health care system, based on the science of occupation, with primary focus on purposeful, goal-oriented activity/occupations, enhanced with the use of the latest technological systems for evaluation, diagnosis, education and treatment of clients whose function(s) is/are impaired by physical, psychosocial and cognitive impairments, whether congenital or acquired, affecting their quality of life, with the aim to prevent disability, promote health and well-being, and enable return to optimum occupational roles;

bb. *"Occupational Therapist"* means a professional with a broad education in the medical, social, behavioural, psychological, psychosocial and occupational sciences, equipped with the attitudes, skills and knowledge to work collaboratively with people, individually or in groups or communities, including those who have an impairment of body structure or function owing to a health condition, or who are restricted in their participation or socially excluded, with a commitment to lifelong learning and evidence-based practice;

cc. *"Parent Department"* means the department that offers the Degree Program that a student undergoes;

dd. *"Program Head"* means the administrative head of a particular Degree Program/s;

ee. *"Program Regulations"* means the Bachelor of Science Degree Program Regulations and Curriculum, 2026-2031;

ff. *"Program"* means the Bachelor of Occupational Therapy (B.OT) Degree Program; gg. *"Registrar"* means the Registrar of the University;

hh. *"School"* means a constituent institution of the University established for monitoring, supervising and guiding, teaching, training and research activities in broadly related fields of studies;

ii. *"Section"* means the duly numbered Section, with Clauses included in that Section, of these Regulations;

jj. *"Statutes"* means the Statutes of University;

kk. *"Sub-Clause"* means the duly numbered Sub-Clause of these Program Regulations; ll.

"UGC" means University Grant Commission;

mm. *"Vice Chancellor"* means the Vice Chancellor of the University.

5. Program Description

5.1 The Bachelor of Occupational Therapy (B.OT) Degree Program Regulations and Curriculum 2026-2031 are subject to, and, pursuant to the Academic Regulations.

5.2 These Program Regulations shall be applicable to other similar programs, which may be introduced in future.

5.3 These Regulations may evolve and get amended or modified or changed through appropriate approvals from the Academic Council, from time to time, and shall be binding on all concerned.

5.4 Statement of Philosophy and Scope: Occupational Therapy practice spans the continuum from health promotion to prevention to rehabilitation for individuals and populations throughout the lifespan. The Occupational Therapist diagnoses impairments/dysfunctions based on skilful examination and evaluation, regardless of cause or aetiology, and provides skilled therapeutic intervention to foster improvement in a client's functioning and maximize overall quality of life. Occupational Therapists provide the initial access into the health care system for persons with impairments and functional
limitations amenable to Occupational Therapy, and engage in collegial referral relationships with other health care professionals. The Bachelor of Occupational Therapy program is designed to be patient-centric and futuristic, incorporating the latest advancements in technology, and aligned with global standards to allow global mobility of its graduates.

6. Minimum and Maximum Duration

6.1 Bachelor of Occupational Therapy (B.OT)

The Bachelor of Occupational Therapy (B.OT) degree Program is a Five-Year, Full Time, Annual Program. The minimum duration of the program is five (05) years, consisting of four (4) years of academic training and 1-year full time rotatory internship.

The academic structure includes:

- Academic Training (Theory + Practical): 1560 Hours/year (6240 Hours total over 4 years)
- Annual Pattern: 40 weeks per year (39 hours/week x 40 weeks)
- Elective Posting: Minimum 35 Hours/week x 4 weeks = 140 Hours
- Internship: Minimum 2016 Hours (52 weeks full-time rotatory internship)
- Total Hours: 8396 Hours

6.2 Maximum Period for Completion: The maximum permissible period to complete the B.OT program is ten (10) years. If a candidate fails to complete the program within ten years, 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.

6.3 No extension of duration post maximum 10 years in any case.

6.4 The time taken by the student to improve Grades/CGPA, and in case of temporary withdrawal/re-joining, shall be counted in the permissible maximum duration for completion of

a Program.

6.5 The enrolment of the student who fails to complete the mandatory requirements for the award of the concerned Degree in the prescribed maximum duration, shall stand terminated and no Degree shall be awarded.

7. Program Educational Objectives (PEO)

After five years of successful completion of the program, the graduates shall be able to:

PEO No.	Program Educational Objectives (PEO)
PEO1	Professional Competence: Examine, evaluate, diagnose, plan, execute, and document occupational therapy treatment independently or as part of a multidisciplinary team, including operating and maintaining occupational therapy equipment used in patient treatment.
PEO2	Research and Innovation: Pursue further qualification and continuous professional education to keep abreast of recent advances, new technology, and research, contributing to innovation in occupational therapy practice.
PEO3	Ethical and Responsible Practice: Uphold professionalism, ethics, patient confidentiality, and safety standards while promoting health, preventing diseases, and contributing to community-based rehabilitation.
PEO4	Teamwork and Leadership: Work collaboratively with multidisciplinary healthcare teams while effectively communicating with patients, caregivers, and society, and demonstrate leadership through responsible documentation and reporting.
PEO5	Lifelong Learning and Career Advancement: Engage in teaching, learning, and continuous professional development to remain competent and responsive to evolving healthcare technologies and occupational therapy practices.

8. Program Outcomes (PO) and Program Specific Outcomes (PSO)

8.1 Program Outcomes (PO)

On successful completion of the Program, the students shall be able to:

PO No.	Program Outcome
PO1	Knowledge Base: Demonstrate strong knowledge of anatomy, physiology, pathology, biomechanics, and kinesiology and apply this knowledge effectively in occupational therapy assessment and treatment across clinical settings.
PO2	Clinical Skills: Assess, diagnose, plan, and implement occupational therapy interventions for all age groups and provide safe and effective treatments using appropriate occupational therapy techniques and approaches.

PO3	Patient-Centered Care: Provide ethical, compassionate, and culturally sensitive care respecting patient rights and involve patients and caregivers in care planning and decision-making for better outcomes.
PO4	Critical Thinking and Problem Solving: Apply critical thinking and problem-solving skills in analysing patient conditions and use evidence-based reasoning to make sound clinical decisions for effective care.
PO5	Communication Skills: Communicate clearly and respectfully with patients, families, and healthcare team and ensure accurate documentation of clinical assessments, treatments, and patient progress.
PO6	Professionalism and Ethics: Demonstrate professionalism, accountability, and ethical behavior in all situations and commit to continuous learning and professional development throughout their career.
PO7	Research and Evidence-Based Practice: Apply research principles and evidence-based methods to enhance patient care and engage in ongoing learning to integrate the latest research into clinical practice.
PO8	Teamwork and Leadership: Collaborate effectively within multidisciplinary healthcare teams for quality care and demonstrate leadership skills in managing patient care and guiding team members.
PO9	Community Health Awareness: Promote preventive healthcare and actively participate in community health programs and contribute to health education and wellness initiatives within the community.
PO10	Scientific Interpretation: Interpret diagnostic tests and clinical data to guide occupational therapy interventions and use scientific evidence to support clinical decision-making and treatment planning
PO11	Information and Digital Literacy: Use digital tools and health information systems for effective clinical practice and apply digital literacy skills to access and manage healthcare data efficiently.

8.2 Program Specific Outcomes (PSOs)

On successful completion of the Program, the students shall be able to:

PSO No.	**Program Specific Outcome**
PSO1	Patient Assessment and Diagnosis: Perform comprehensive physical neurological musculoskeletal and cardiorespiratory assessments to identify impairments and develop occupational therapy diagnoses and treatment plans.

PSO2	Therapeutic Intervention and Rehabilitation: Apply evidence-based occupational therapy techniques including electrotherapy exercise therapy manual therapy and functional training to improve recovery mobility and functional independence.
PSO3	Clinical Reasoning and Problem Solving: Demonstrate clinical reasoning, critical thinking and reflective practice to manage acute and chronic health conditions and adapt treatment plans as needed.
PSO4	Multidisciplinary Collaboration and Communication: Collaborate and communicate effectively with patients' families and healthcare teams to deliver integrated and patient centered occupational therapy care

9. Admission Criteria (as per NCAHP)

The University admissions shall be open to all persons irrespective of caste, class, creed, gender, or nationality. All admissions shall be made on the basis of merit in the qualifying examinations and an entrance examination conducted by the University. The admission criteria for the Bachelor of Occupational Therapy program are listed in the following sub-clauses:

9.1 The applicant must have passed the Higher Secondary (10+2) or equivalent examination by a recognised Indian board or a duly constituted Board, with pass marks and a minimum of 50% in aggregate of Physics, Chemistry and Biology (B.OTany & Zoology).

9.2 Admission to the Bachelor of Occupational Therapy course shall be made on the basis of eligibility and an entrance test conducted for the purpose. No candidate shall be admitted on any ground unless he/she has appeared in the University Entrance admission test.

9.3 Candidates who have studied abroad and have passed the equivalent qualification, as determined by the Association of Indian Universities, will form the guideline to determine eligibility, and must have passed Physics, Chemistry, Biology and English up to the 12th Standard level.

9.4 Candidates who have passed the Senior Secondary School Examination of the National Open School with a minimum of four subjects, in any of the following group of subjects, with pass marks (minimum 50% marks): (a) English, Physics, Chemistry, B.OTany and Zoology; or (b) English, Physics, Chemistry, and Biology. For candidates belonging to Scheduled Castes, Scheduled Tribes, or Other Backward Classes (NCL), the minimum marks obtained in Physics, Chemistry, and Biology are taken together in the qualifying examination shall be 40% marks instead of 50% marks.

9.5 He/she should have attained the age of 17 years as on the date of admission. The candidate must furnish, at the time of submission of the application form, a certificate of physical fitness from a registered medical practitioner certifying that the candidate is physically fit to undergo the Bachelor of Occupational Therapy program. Candidates with the following locomotor disabilities shall not be eligible for the B.OT program: involvement of B.OTh upper limbs, involvement of the dominant upper limb of more than 50%, involvement of the spine, or more than 50% involvement of the lower limb.

9.6 Reservation for the SC / ST and other backward classes shall be made in accordance with the directives issued by the Government of Karnataka from time to time.

9.7 Re-admission after break of study – 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. 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. Candidates having a break of study shall be considered for re-admission provided that they are not subjected to any disciplinary action and no charges are pending or contemplated against them. All re-admissions of candidates are subject to the approval of a duly empowered committee of university constituted by the Vice Chancellor. The candidates having a break of study of up to five years shall apply for readmission to the appropriate
authority of the University. The candidates shall be granted exemption in the subjects they have already passed.

9.8 Candidates must fulfil the medical standards required for admission as prescribed by the University.

9.9 If, at any time after admission, it is found that a candidate had not in fact fulfilled all the requirements stipulated in the offer of admission, in any form whatsoever, including possible misinformation and any other falsification, the Registrar shall report the matter to the Board of Management (BOM), recommending revoking the admission of the candidate.

9.10 The decision of the BOM regarding the admissions is final and binding.

10. Transfer Students Requirements

10.1 Transfer of student(s) from another recognized University to the 2nd year of the B.OT Program of the University

- The Vice Chancellor shall have the power to place any migration/transfer request before the Board of Management and obtain approval for grant of permission for migration/transfer to candidates undergoing a course of study in another University, as prescribed by the University.

11. Specific Regulations regarding Assessment and Evaluation (including the Weightages of Continuous Assessment and End Term Examination for various Course Categories)

11.1 The academic performance evaluation of a student in a Course shall be according to the University Letter Grading System based on the class performance distribution in the Course.

11.2 Academic performance evaluation of every registered student in every Course registered by the student is carried out through various components of Assessments spread across the year. The nature of components of Continuous Assessments and the weightage given to each component of Continuous Assessments shall be clearly defined in the Course Plan for every Course, and approved by the DAC.

11.3 Format of the End-Term examination shall be specified in the Course Plan.

11.4 Grading is the process of rewarding the students for their overall performance in each Course. The University follows the system of Absolute Grading to classify the students based on the pre-defined performance standards/benchmarks fixed for the concerned Course.

Grading shall be done at the end of the Academic Term by considering the aggregate performance of the student in all components of Assessments prescribed for the Course. Letter Grades shall be awarded to a student based on her/his overall performance against the pre-defined absolute performance standards/benchmarks fixed for the concerned Course. These Letter Grades not only indicate a qualitative assessment of the student's performance but also carry a quantitative (numeric) equivalent called the Grade Point.

11.5 Assessment Components and Weightage

Table 1: Assessment Components and Weightage for different category of Courses			
Nature of Course and Structure	Evaluation Component	Weightage	Minimum Performance Criteria
Lecture-based Course L component in the L-T-P Structure is predominant (more than 1) (Examples: 3-0-0; 3-0-2; 2-1-0; 2-0-2, 2-0-4 etc.)	Continuous Internal Evaluation (CIE) (a) 60% of CIE from two notified midterm exams (b) 40% of CIE from presentations, assignments/Project work/Attendance etc.	20% (CIE Total)	50% (CIE to be eligible for ETE)
	End Year Examination University-conducted Theory exam with specified pattern, type, and weightage as per curriculum	80%	50%
Lab/Practice based Course P component in the L T-P Structure is predominant (Examples: 0-0-4; 1- 0-4; 1-0-2; etc.)	Continuous Internal Evaluation (CIE) Laboratory work including records, performance, attendance, project reports, etc. along with two formative tests and internal assessments (seminars, case-based assessments)	20% (CIE Total)	50% (CIE to be eligible for ETE)
	End Year Examination	80%	50%

	Practical exam: Spotters, equipment demonstration, case-based discussion, etc.		
Skill-based Courses Industry Internship, Capstone Project, Dissertation, Summer/Short Internship, Field Projects, Portfolio, etc., with non-L-T-P pedagogy	Guidelines for the assessment components and recommended weightages will be specified in the concerned Program Regulations and Course Plans	As specified	As per Program Regulations

The exact weightages of Evaluation Components shall be clearly specified in the respective Course Plan.

Normally, for Practice/Skill based Courses, without a defined credit structure (L–T–P), but with assigned Credits, the method of evaluation shall be based only on Continuous Assessments. The various components of Continuous Assessments, the distribution of weightage among such components, and the method of evaluation/assessment, shall be as decided and indicated in the Course Plan/PRC. The same shall be approved by the respective DAC.

11.6 Minimum Performance Criteria

11.6.1 Theory only Course and Lab/Practice Embedded Theory Course student shall satisfy the following minimum performance criteria to be eligible to earn the credits towards the concerned Course:

a. The student shall secure a minimum of 75% attendance in theoretical classes and 85% attendance in Skills training (practical) to qualify to appear for the final examination, with no relaxation permissible under any ground including indisposition.

b. The passing marks for every subject shall be 50% in theory and 50% in practical. A candidate must pass B.OTh theory and practical separately with a minimum of 40% in each, but must secure a minimum of 50% marks in aggregate of theory and practical. If a candidate fails in either the practical or theory examination, he/she must reappear in B.OTh the theory and practical examinations.

11.6.2 Lab/Practice only Course and Project Based Courses

The student must obtain a minimum of 50% of the AGGREGATE of the marks/weightage of all assessment components in the concerned Course.

11.6.3 A student who fails to meet the minimum performance criteria listed above in a Course shall be declared as "Fail" and given "F" Grade in the concerned Course. For theory Courses, the student shall have to re-appear in the "Make-Up Examinations" as scheduled by the University in any subsequent year, or, re-appear in the End Term Examinations of the same Course when it is scheduled at the end of the following Year or Summer Term, if offered.

The marks obtained in the Continuous Assessments (other than the End Term Examination)

shall be carried forward and be included in computing the final grade, if the student secures the minimum requirements in the "Make-Up Examinations" of the concerned Course. Further, the student has an option to re-register for the Course and clear the same in the summer term/subsequent year if he/she wishes to do so, provided the Course is offered.

The eligibility for promotion to the next academic year is subject to securing the minimum academic performance specified below: First year to second year requires a minimum of 70% of the credits at the end of the first year; second year to third year requires a cumulative minimum of 80% of the credits at the end of the second year; and third year to fourth year requires a cumulative minimum of 90% of the credits at the end of the third year. The student must complete all course work requirements and credits to be eligible for internship.

In addition to the above, it is recommended that a student be permitted to proceed to the next academic year only if the number of failed Courses/subjects is two or fewer. Such failed Courses/subjects must be cleared before the student appears for the final examination of the subsequent academic year; for example, failed Courses of Year I must be cleared before the student appears for the final examination of Year III, and failed Courses of Year II must be cleared before the student appears for the final examination of Year IV. A student shall be permitted to undertake the internship only after passing all Courses/subjects of all academic years.

Classification of successful candidates: A candidate who secures 75% and above in the aggregate marks and passes the whole examination in the first attempt shall be declared to have secured "First Class with Distinction". A candidate who secures above 60% and less than 75% in the aggregate marks and completes the course within the stipulated period, passing in the first attempt, shall be declared to have passed in the "First Class". A candidate who secures above 50% and less than 60% in the aggregate marks and completes the course within the stipulated period shall be declared to have passed in the "Second Class". All other successful candidates shall be declared to have "Passed" the examination.

12. Structure / Component with Credit Requirements – Course Baskets & Minimum Basket-wise Credit Requirements

Bachelor of Occupational Therapy (B.OT) Program Structure (2026-2031) is a Five-Year Annual Pattern Program comprising four (4) years of academic training (1560 teaching hours per year, totalling 6240 hours), a minimum of 140 hours of elective posting, followed by a one (1) year full-time rotatory internship of a minimum of 2016 hours, aggregating to 8396 total hours for the Program. The table below summarizes the Year-wise teaching hours and credits as prescribed for the completion of the Degree.

Table 2: Bachelor of Occupational Therapy: Year-wise Distribution of Teaching Hours and Credits (Annual Pattern)

Year	Academic Training	Teaching Hours	Credits
B.OT I	Theory + Practical/Demo /Lab Work + Clinical (incl. Supervised Clinical Training/Field Work)	1560	69

B.OT II	Theory + Practical/Clinical (incl. OT Diagnostics & Practice I & II, Biomechanics & Kinesiology)	1560	64
B.OT III	Theory + Practical/Clinical (incl. Occupational Therapy in Medical and Surgical Conditions)	1560	64
B.OT IV	Theory + Practical/Clinical (incl. Occupational Therapy in Musculoskeletal, Psychiatric, Paediatric and Neurological Conditions)	1560	79
Total (4 Years Academic)		6240	276
Internship	Full-time rotatory internship (52 weeks)	2016 (Minimum)	—
Total Hours (Program)		8396	

13. Minimum Total Credit Requirements of Award of Degree

The minimum total credit requirements for the Award of Degree shall be as per the guidelines of NCAHP credits required for the award of a Bachelor's Degree. Accordingly, a candidate shall be required to secure a minimum of 276 Credits across the four (4) academic years (B.OT I – B.OT IV) and 45 Credits during the Compulsory Rotatory Internship (Year V), aggregating to a Grand Total of 321 Credits for the Award of the B.OT Degree (refer Table 3.7).

14. Other Specific Requirements for Award of Degree, if any, as prescribed by the Statutory Bodies

14.1 The award of the Degree shall be recommended by the Board of Examinations and approved by the Academic Council and Board of Management of the University.

14.2 A student shall be declared to be eligible for the award of the concerned Degree if she/he:

a. Fulfilled the Minimum Credit Requirements and the Minimum Credits requirements under various baskets;

b. Has no dues to the University, Departments, Hostels, Library, and any other such

Centres/Departments of the University; and

c. Has satisfied all other conditions prescribed by the University for the award of the Degree.

15. Curriculum Structure – Basket Wise Course List

All the courses are listed Basket/Category-wise based on the actual Year-wise credit distribution (B.OT I–IV) as prescribed in the reference curriculum, summarized in Table 3 below.

Table 3: Bachelor of Occupational Therapy: Summary of Minimum Credit Contribution from various Baskets

Sl. No.	Baskets / Category	Credit Contribution
1	Core Courses (CC)	186
2	Ability Enhancement Courses (AEC)	3
3	Multi-Disciplinary Courses (MDC)	24
4	Skill Enhancement Courses (SEC)	6
5	Research Project (PWR)	57
Total Credits (B.OT I – B.OT IV, Academic Years)		**276**
6	Internship (Year V)	2016 Hours / 45 Credits (Rotatory Clinical Internship)

Table 3.1 Core Courses (CC)

Table 3.1 Core Courses (CC)

S. No	Course code	Course Name	Credits
1	AN	Human Anatomy	16
2	PI	Human Physiology	16
3	BC	Biochemistry	3
4	FOT I	Fundamentals of Occupational Therapy I	10
5	FOT II	Fundamentals of Occupational Therapy II	10

6	PM	Pathology & Microbiology	6
7	PH	Pharmacology	3
8	BMK	Biomechanics & Kinesiology	10
9	OTDP I	Occupational Therapy Diagnostic & Practice I	10
10	OTDP II	Occupational Therapy Diagnostic & Practice II	10
11	MCV	Medicine & Cardiovascular Medicine	6
12	NP	Neurology & Paediatrics	6
13	OTMC	Occupational Therapy in Medical Conditions	8
14	SO	Surgery & Orthopaedics	6
15	PS	Psychiatry	4
16	OTSC	Occupational Therapy in Surgical Conditions	9
17	OTMC	Occupational Therapy in Orthopaedic Conditions	12
18	OTNC	Occupational Therapy in Neurological Conditions	11
19	COTR	Community Occupational Therapy & Rehabilitation	7
20	OTPP	OT Practices in Psychiatry	11
21	OTPC	OT in Paediatrics Conditions	12
Total No. of Credits			**186**

Table 3.2 Ability Enhancement Courses (AEC)

Table 3.2 Ability Enhancement Courses (AEC)			
S. No	**Course Code**	**Course Name**	**Credits**
1	ENCS	English & Communication Skills – NUE	3
Total No. of Credits			**3**

Table 3.3 Multi-Disciplinary Courses (MDC)

Table 3.3 Multi-Disciplinary Courses (MDC)			
S. No	**Course Code**	**Course Name**	**Credits**
1	EVS	Environmental Sciences – NUE	3
2	PSY	Psychology	6
3	WPER G	Work Physiology & Ergonomics	7
4	OTSM	Occupational Therapy services & management	4
5	CMS	Community Medicine & Public Health, Sociology	4
Total No. of Credits			**24**

Table 3.4 Skill Enhancement Courses (SEC)

Table 3.4 Skill Enhancement Courses (SEC)			
S. No	**Course Code**	**Course Name**	**Credits**
1	COMP	Computer Sciences – NUE	3
2	FAE	First Aid & Emergency Care – NUE	3
Total No. of Credits			**6**

Table 3.5 Research Project (PWR)

Table 3.5 Research Project (PWR)			
S. No	**Course Code**	**Course Name**	**Credits**
1		Supervised Clinical Training/Field Work – Year I	8
2		Supervised Clinical Training/Field Work – Year II	13
3	RMB	Research Methodology & Biostatistics	3
4		Supervised Clinical Training/Field Work – Year III	15

5		Project Work	2
6		Supervised Clinical Training/Field Work – Year IV	16
Total No. of Credits			**57**

Table 3.6 Internship

	Table 3.6 Internship			
S. No	**Course Code**	**Course Name**	**Hours**	**Credits**
1		Rotatory Clinical Internship (Year V)	2016	45

The Compulsory Rotatory Internship (Year V) is allotted a total of 45 Credits, in addition to the minimum 2016 Hours of clinical training prescribed above.

Table 3.7: Total Credit Requirement for Award of the B.OT Degree

Sl. No.	**Component**	**Credits**
1	B.OT I (First Year)	69
2	B.OT II (Second Year)	64
3	B.OT III (Third Year)	64
4	B.OT IV (Fourth Year)	79
Sub-Total: 4-Year Academic Programme (B.OT I – B.OT IV)		**276**
5	Compulsory Rotatory Internship (Year V)	45
GRAND TOTAL CREDITS (B.OT Programme, Year I – Year V)		**321**

The candidate shall be required to secure a minimum of 276 Credits across the four (4) academic years (B.OT I – B.OT IV) and 45 Credits during the Compulsory Rotatory Internship (Year V), aggregating to a Grand Total of 321 Credits, to become eligible for the Award of the Bachelor of Occupational Therapy Degree.

16. Practical / Skill-based Courses – Internship / Research Project / Dissertation

Practical / Skill-based Courses like internship, project work, capstone project, research project/dissertation, and such similar courses, where the pedagogy does not lend itself to a typical L-T-P-C Structure, are simply assigned the number of Credits based on the quantum of work/effort required to fulfil the learning objectives and outcomes prescribed for the concerned Courses.

These Courses are designed to provide students with hands-on experience and skills essential for their professional development. These courses aim to equip students with abilities in problem identification, root cause analysis, problem-solving, innovation, and design thinking through industry exposure and project-based learning. The expected outcomes are first-level proficiency in problem solving and design thinking skills to better equip graduates for their professional careers. The method of evaluation and grading for the Practical/Skill-based Courses shall be prescribed and approved by the concerned Departmental Academic Committee (refer Annexure A of the Academic Regulations). The same shall be prescribed in the Course Handout.

16.1 Internship

The Bachelor of Occupational Therapy program includes a 12-month compulsory rotatory internship (totalling 2016 hours) designed to provide hands-on clinical experience in various specialties of occupational therapy. The internship aims to enhance clinical skills, professional ethics, and patient
management abilities through supervised training in hospitals, rehabilitation centres, and community health settings.

16.1.1 All students of Bachelor of Occupational Therapy must undergo a compulsory rotatory internship for a period of one year, approved by the college, after passing all examinations in all subjects.

16.1.2 Teaching institutes shall be responsible for ensuring the internship of the students in the hospital of the institute or affiliated/approved hospitals. During the period of internship, a stipend amount must be paid to the students by the institute as prescribed by the State Council.

16.2 Research Project / Dissertation

The candidate shall submit a project under the supervision of an Occupational Therapy faculty during internship. The project may be a case study, a study of a recent technique, or a literature review, etc., to give the student a research mind and to facilitate higher studies.

16.2.1 The Research Project / Dissertation shall be approved by the concerned HOD and be carried out under the guidance of a faculty member.

16.2.2 The candidate shall maintain the record of work, which is to be verified and certified by the Occupational Therapy faculty under whom he/she works. Based on the record of work and project, the internship completion shall be reported in the form of grades by the HOD/Principal while issuing a "Certificate of Satisfactory Completion" of internship, following which the University shall award the B.OT degree.

17. Recommended Year-wise Course Structure / Flow Including the Program / Discipline Elective Paths / Options

Year 1

Table 4.1: Year 1: Distribution of Teaching Hours & Credits (Annual Pattern)

Sr. No.	Course Code	Course / Subject	Total Teaching Hours			Credits			Total Credits
			Theory	Practical / Demo/Lab Work	Clinical	Theory	Practical/ Demo /Lab Work	Clinical	
1	AN	Human Anatomy	180	120	--	12	4	--	16
2	PI	Human Physiology	180	120	--	12	4	--	16
3	BC	Biochemistry	45	--	--	3	--	--	3
4	FOT I	Fundamentals of Occupational Therapy I	90	120	--	6	4	--	10
5	FOT II	Fundamentals of Occupational Therapy II	90	120	--	6	4	--	10
6	ENCS	English & Communication Skills	30	30	---	2	1	---	3
7	EVS	Environmental Sciences	45	--	--	3	--	--	3
8		Supervised Clinical Training / Field Work	--	--	360	--	--	8	8
Total no. of Teaching Hours / Year			**1560**			**Total Credits**			**69**

Year 2

Table 4.2: Year 2: Distribution of Teaching Hours & Credits (Annual Pattern)									
Sr. No.	**Course Code**	**Course / Subject**	**Total Teaching Hours**			**Credits**			**Total Credits**
			Theory	**Practical / Demo/Lab Work**	**Clinical**	**Theory**	**Practical / Demo/Lab Work**	**Clinical**	
1	PM	Pathology & Microbiology	90	--	--	6	--	--	6
2	PH	Pharmacology	45	--	--	3	--	--	3
3	PSY	Psychology	90	--	--	6	--	--	6
4	BMK	Biomechanics & Kinesiology	90	120	--	6	4	--	10
5	OTDP I	Occupational Therapy Diagnostic & Practice I	90	120	--	6	4	--	10
6	OTDP II	Occupational Therapy Diagnostic & Practice II	90	120	--	6	4	--	10
7	COMP	Computer Sciences – NUE	30	30	--	2	1	--	3
8	FAE	First Aid & Emergency Care – NUE	30	30	--	2	1	--	3
9		Supervised Clinical Training / Field Work	--	--	585	--	--	13	13
Total no. of Teaching Hours / Year			**1560**			**Total Credits**			**64**

Year 3

Table 4.3: Year 3: Distribution of Teaching Hours & Credits (Annual Pattern)									
Sr. No.	**Course Code**	**Course / Subject**	**Total Teaching Hours**			**Credits**			**Total Credits**
			Theory	**Practical / Demo/Lab Work**	**Clinical**	**Theory**	**Practical / Demo/Lab Work**	**Clinical**	
1	MCV	Medicine & Cardiovascular Medicine	75	30	--	5	1	--	6
2	NP	Neurology & Paediatrics	75	30	--	5	1	--	6
3	OTMC	Occupational Therapy in Medical Conditions	90	60	--	6	2	--	8
4	WPER G	Work Physiology & Ergonomics	90	30	--	6	1	--	7
5	SO	Surgery & Orthopaedics	75	30	--	5	1	--	6
6	PS	Psychiatry	45	30	--	3	1	--	4
7	OTSC	Occupational Therapy in Surgical Conditions	90	90	--	6	3	--	9
8	RMB	Research Methodology & Biostatistics	45	--	--	3	--	--	3
9		Supervised Clinical Training / Field Work (incl. 40 hrs visits to external institutes)	--	--	635 + 40	--	--	15	15
Total no. of Teaching Hours / Year			**1560**			**Total Credits**			**64**

Year 4

Table 4.4: Year 4: Distribution of Teaching Hours & Credits (Annual Pattern)									
Sr. No.	**Course Code**	**Course / Subject**	**Total Teaching Hours**			**Credits**			**Total Credits**
			Theory	**Practical / Demo/Lab Work**	**Clinical**	**Theory**	**Practical / Demo/Lab Work**	**Clinical**	
1	OTOC	Occupational Therapy in Musculoskeletal Conditions	90	60	180	6	2	4	12
2	OTSM	Occupational Therapy Services & Management	60	--	--	4	--	--	4
3	CMS	Community Medicine & Public Health, Sociology	60	--	--	4	--	--	4
4	OTNC	Occupational Therapy in Neurological Conditions	90	30	180	6	1	4	11
5	COTR	Community Occupational Therapy & Rehabilitation	90	30	--	6	1	--	7
6	OTPP	OT Practices in Psychiatry	90	30	180	6	1	4	11
7	OTPC	Occupational Therapy in Paediatric Conditions	90	60	180	6	2	4	12
8		Project Work	--	60	--	--	2	--	2
9		Supervised Clinical Training / Field Work	--	--	--	--	--	16	16
Total no. of Teaching Hours / Year			**1560**			**Total Credits**			**79**

Internship (Year 5)

Table 4.5: Internship (Rotatory Clinical Internship): Distribution of Hours – Total Duration: One Year / 12 Months (52 Weeks)		
Sr. No.	**Distribution of Work**	**Hours**
1	Clinical / Field Work	1826
2	Reflective Writing (Log Book)	52
3	Project Work	90
4	Transition Seminars / Workshop	48
Total		**2016**

18. Course Catalogue

1. Human Anatomy

Course Code: AN	**COURSE TITLE: HUMAN ANATOMY**
Version No. 01	
Course Pre requisites: NIL	
Anti-requisites: Nil	
Course Description	
For first year B.OT students this course gives the detail knowledge about the cells, different systems such as musculoskeletal, cardiovascular, pulmonary, digestive, Nervous also the functional anatomy of various systems. Course Goals: Give the detailed knowledge of Human structure, body functions, anatomical orientation of different systems. The knowledge about cardiovascular & circulatory system, cell functions, the detail skeletal system & muscular system.	
Course Objective	
• Gain knowledge of human body's structure and function. • Understand normal anatomical position, various planes, relation, comparison, laterality & movement in our body. • Know different types of cells and describe their functions. • Describe the major components of the skeletal system and describe their functions, different types of bones and provide an example of each type. • Learn and identify the major components of the integumentary system and their functions. • Differentiate types of bones and provide an example of each type. • Learn and identify the three types of muscle and the muscular system's functions. • Learn and identify the major components of the digestive, circulatory, respiratory, endocrine, reproductive & urinary system and their functions. • Learn and explain the major components of the nervous system and their functions.	
Course Outcomes	
After completion of this course the student shall be able to (Skill): • Identify or recognize various muscle tissues, bones and organs of the body. • Identify the parts of the brain and other organs of the body. • Recognize the importance of an in-depth knowledge of the topics consistent with a proper medical education. • Identify the fundamental role of a proper theoretic knowledge of the subject in the clinical practice. • Identify the possible use of the acknowledged skills in the future career. • Assess the importance of the acquired knowledge in the overall medical education process. Attitude: • Knowledge of anatomy will help to communicate with the clients and peers efficiently.	

Course Content:

MODULE 1	**GENERAL ANATOMY (Anatomical Terminology; Bones & Joints; Muscle; Skin & Fascia)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**11 HOURS**

• Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body
• Describe composition of bone and bone marrow
• Describe parts, blood and nerve supply of a long bone
• Enumerate laws of ossification
• Enumerate special features of a sesamoid bone
• Describe various types of cartilage with its structure & distribution in body • Describe various joints with subtypes and examples
• Explain the concept of nerve supply of joints & Hilton's law
• Classify muscle tissue according to structure & action
• Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples
• Describe different types of skin & dermatomes in body
• Describe structure & function of skin with its appendages
• Describe superficial fascia along with fat distribution in body

MODULE 2	**GENERAL CARDIOVASCULAR & LYMPHATIC SYSTEM**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**11 HOURS**

• Differentiate between blood vascular and lymphatic system
• Differentiate between pulmonary and systemic circulation
• List general differences between arteries & veins
• Explain functional difference between elastic, muscular arteries and arterioles
• Describe portal system giving examples
• Describe the concept of anastomoses and collateral circulation with significance of end- arteries
•Explain function of meta- arterioles, precapillary sphincters, arterio-venous anastomoses
• Define thrombosis, infarction & aneurysm
• Describe the types of circulation and its importance, classification of vessels (anatomical and physiological) Structure of blood vessels. Factors affecting venous return. anastomosis, end arterie. Pulmonary and systemic circulation, define portal circulation with examples • List the components and functions of the lymphatic system
• Describe structure of lymph capillaries & mechanism of lymph circulation
• Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system

MODULE 3	**UPPER LIMB - OSTEOLOGY (Individual Bones)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**5 HOURS**
• Identify the given bone, its side, important features & keep it in anatomical position • Identify & describe joints formed by the given bone • Enumerate peculiarities of clavicle • Demonstrate important muscle attachment on the given bone • Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform • Describe scaphoid fracture and explain the anatomical basis of avascularnecrosis				
MODULE 4	**UPPER LIMB REGIONS & THORAX (Shoulder/Axilla/Arm; Forearm & Hand; Thoracic Cage; Heart/Pericardium/Mediastinum; Lungs & Trachea; Radiological Anatomy - Thorax)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**55 HOURS**

• Describe attachment, nerve supply & action of pectoralis major and pectoralis minor • Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast

• Describe development of breast

• Identify & describe boundaries and contents of axilla

• Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein

• Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus

• Explain variations in formation of brachial plexus

• Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis • Explain anatomical basis of enlarged axillary lymph nodes

• Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi

• Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation

• Describe and identify the deltoid and rotator cuff muscles

• Describe & demonstrate attachment of serratus anterior with its action

• Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy

• Explain anatomical basis of Injury to axillary nerve during intramuscular injections • Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii

• Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm

• Describe the anatomical basis of Saturday night paralysis

• Identify & describe boundaries and contents of cubital fossa

• Describe the anastomosis around the elbow joint

• Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions

• Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm

• Identify & describe flexor retinaculum with its attachments

• Explain anatomical basis of carpal tunnel syndrome

• Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved

• Describe & demonstrate movements of thumb and muscles involved

• Identify & describe course and branches of important blood vessels and nerves in hand • Describe anatomical basis of Claw hand

• Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths • Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions

• Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm

• Describe the anatomical basis of Wrist drop

• Identify & describe compartments deep to extensor retinaculum

• Identify & describe extensor expansion formation

• Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage

• Describe dermatomes of upper limb

• Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio- ulnar joints, wrist joint & first carpometacarpal joint

• Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint

• Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand

• Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula

• Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis

• Identify and describe the salient features of sternum, typical rib, Ist rib andtypical thoracic vertebra

• Identify & describe the features of 2nd, 11th and 12th ribs, 1st, 11th and 12ththoracic vertebrae • Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet • Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles

• Describe & demonstrate mechanics and types of respiration

• Describe costochondral and interchondral joints

• Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum • Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium

• Describe & demonstrate external and internal features of each chamber of heart • Describe & demonstrate origin, course and branches of coronary arteries • Describe anatomical basis of ischaemic heart disease

• Describe & demonstrate the formation,course, tributaries and termination of coronary sinus

• Mention the parts, position and arterial supply of the conducting system of heart • Describe

& demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus

• Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy

• Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate

• Describe a bronchopulmonary segment

• Identify phrenic nerve & Describe its formation & distribution

• Mention the blood supply, lymphatic drainage and nerve supply of lungs

• Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea

• Understand Various imaging techniques with Principles of plain radiograms and CT scan, Ultrasonography,

• Bones and joints seen in AP and lateral view radiographs of shoulder, elbow, wrist joints & hand

MODULE 5	**LOWER LIMB (Individual Bones; Thigh; Knee, Leg & Foot)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**26 HOURS**

• Identify the given bone, its side, important features & keep it in anatomical position • Identify & describe joints formed by the given bone

• Describe the importance of ossification of lower end of femur & upper end of tibia • Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint • Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior, medial & gluteal region of thigh

• Describe and demonstrate major muscles with their attachment, nerve supply and actions

• Describe and demonstrate boundaries, floor, roof and contents of femoral triangle • Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections • Explain the anatomical basis of Trendelenburg sign

• Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions

• Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa • Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint • Describe anatomical basis of complications of fracture neck of femur

• Describe dislocation of hip joint and surgical hip replacement

• Describe and demonstrate major muscles of anterolateral compartment ofleg with their attachment, nerve supply and actions

• Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of of leg

• Explain the anatomical basis of foot drop

• Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint

• Explain the anatomical basis of locking and unlocking of the knee joint

• Describe knee joint injuries with its applied anatomy

• Explain anatomical basis of Osteoarthritis

• Explain the anatomical basis of rupture of calcaneal tendon

• Describe factors maintaining importance arches of the foot with its importance • Explain the anatomical basis of Flat foot & Club foot

• Explain the anatomical basis of Metatarsalgia & Plantar fasciitis

• Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint • Describe the subtalar and transverse tarsal joints

• Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb

• Explain anatomical basis of varicose veins and deep vein thrombosis

• Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular

MODULE 6	**FACE, SCALP, NECK & FACIAL REGION**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**20 HOURS**

• Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull • Describe features of typical and atypical cervical vertebrae (atlas and axis)

• Describe the features of the 7th cervical vertebra

• Describe & demonstrate muscles of facial expression and their nerve supply • Describe sensory innervation of face

• Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels • Describe & demonstrate branches of facial nerve with distribution

• Identify superficial muscles of face, their nerve supply and actions of facial muscles • Explain the anatomical basis of facial nerve palsy

• Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid

• Explain anatomical basis of Erb's & Klumpke's palsy

• Explain anatomical basis of wry neck

• Describe & demonstrate attachments of 1)inferior belly of omohyoid, 2)scalenus anterior, 3)scalenus medius & 4)levator scapulae

• Describe & identify extra ocular muscles of eyeball

• Describe & demonstrate nerves and vessels in the orbit

• Describe anatomical basis of Horner's syndrome

• Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus

• Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication

• Describe & demonstrate articulating surface, type & movements of temporomandibular joint • Explain the clinical significance of pterygoid venous plexus

• Describe the features of dislocation of temporomandibular joint

• Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion

• Describe the basis of formation of submandibular stones

MODULE 7	VERTEBRAL COLUMN, SPINAL CORD & BRAIN	Assignment/ Quiz	Viva voce / Skills Assessment	33 HOURS

• Describe the parts, extent, attachments, modifications of deep cervicalfascia • Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland

• Demonstrate & describe the origin, parts, course & branches subclavianartery • Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins

• Describe the course and branches of IX, X, XI & XII nerve in the neck

• Describe the anatomically relevant clinical features of Thyroid swellings • Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib

• Describe the contents of the vertebral canal

• Describe the boundaries and contents of Suboccipital triangle

• Describe the curvatures of the vertebral column

• Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis

• Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida

• Identify external features of spinal cord

• Describe extent of spinal cord in child & adult with its clinical implication • Draw & label transverse section of spinal cord at mid- cervical & mid- thoracic level • Enumerate ascending & descending tracts at mid thoracic level of spinal cord • Describe anatomical basis of syringomyelia

• Identify external features of medulla oblongata

• Describe transverse section of medulla oblongata at the level of 1) Pyramidal decussation, 2) Sensory decussation 3)ION

• Enumerate cranial nerve nuclei in medulla oblongata with their functionalgroup • Describe anatomical basis & effects of medial & lateral medullary syndrome • Identify external features of pons

• Draw & label transverse section of pons at the upper and lower level

• Enumerate cranial nerve nuclei in pons with their functional group

• Describe & demonstrate external & internal features of cerebellum

• Describe connections of Cerebellar cortex and intracerebellar nuclei

• Describe anatomical basis of cerebellar dysfunction

• Identify external & internal features of midbrain

• Describe internal features of midbrain at the level of superior & inferior colliculus • Describe anatomical basis & effects of Benedikt's and Weber's syndrome • Enumerate cranial nerve nuclei with its functional component

• Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere • Describe the white matter of cerebrum

• Enumerate parts & major connections of basal ganglia & limbic lobe

• Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus

• Describe & identify formation, branches & major areas of distribution of circle of Willis • Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle • Describe anatomical basis of congenital hydrocephalus

MODULE 8	ABDOMINAL CAVITY & PERINEAL REGION/SACRAL PLEXUS	Assignment/ Quiz	Viva voce / Skills Assessment	11 HOURS
• Describe boundaries and recesses of Lesser & Greater sac • Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery • Describe important nerve plexuses of posterior abdominal wall, describe the abdominal muscles in different layers • Describe & demonstrate the attachments, openings, nerve supply &action of the thoracoabdominal diaphragm • Describe the (position, features, important eritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera • Desccribe the origin, course, important relations and branches of internal iliac artery • Describe the branches of sacral plexus • Describe the neurological basis of Automatic bladder • Describe the superficial & deep perineal pouch (boundaries and contents) • Describe & identify Perineal body • Describe Perineal membrane in male & female • Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure				
MODULE 9	**LARYNX, EYES, HEARING & RADIOLOGICAL ANATOMY (Abdomen/General)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**5 HOURS**
• Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx • Describe the anatomy of ear • Describe anatomy of eyes & muscles • Explain the anatomical basis of hypoglossal nerve palsy • Understand Various imaging techniques with Principles of plain radiograms and CT scan, Ultrasonography, • . Bones and joints seen in AP and lateral view radiographs of hip, knee, ankle joints and foot				
MODULE 10	**APPLIED ANATOMY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**3 HOURS**
• Muscles Describe Classification, each type: structure, ultrastructure, function, applied anatomy • Nervous Tissue Describe structure, coverings, functions of Peripheral nerve&. Ganglia: • Skin Describe Types: features of skin with examples and functions, cells, appendages				

Targeted Application & Tools that can be used

• Articulated and disarticulated skeleton sets, bone models, and joint models for identification and surface marking practice.
• Anatomical charts, torso models, and 3D anatomy software/apps for visualizing organ systems. • Radiograph viewing box and sample plain X-rays for correlating osteology with radiological anatomy.
• Cadaveric prosected specimens or digital cadaver-dissection resources (where available) for regional anatomy demonstration.
• Living anatomy/surface marking sessions on volunteers to identify palpable bony landmarks and vessels.

List of Laboraory Tasks

1. Demonstrate the normal anatomical position, planes, and movements of the body. 2. Identify a given long bone, its side, important features, and demonstrate it in anatomical position.
3. Demonstrate important muscle attachments on a given bone.
4. Identify and describe the boundaries and contents of the axilla and cubital fossa. 5. Demonstrate the formation, branches and relations of the brachial plexus. 6. Demonstrate the muscle groups of the forearm and the small muscles of the hand. 7. Identify the salient features of the sternum, typical rib, and thoracic vertebra. 8. Demonstrate the external and internal features of each chamber of the heart on a model. 9. Identify a given lower limb bone, its side, and important features in anatomical position. 10. Demonstrate the boundaries and contents of the femoral triangle and popliteal fossa. 11. Demonstrate the hip, knee and ankle joints, their ligaments and movements. 12. Demonstrate the muscles of mastication and the temporomandibular joint. 13. Identify the curvatures and general features of the vertebral column.
14. Demonstrate the gross parts of the brain and the ventricular system on a model.
15. Identify the bones and joints of the upper and lower limb on anteroposterior and lateral view radiographs.

Text Book(s)

1. B.D. Chaurasia's Human Anatomy. Volume: 1, 2, 3, 4 – 8th Edition
2. Vishram Singh's Textbook of Anatomy. Volume: 1, 2, 3 – 3rd Edition
3. B.D. Chaurasia's General Anatomy – 6th Edition

Reference Book(s)

1. Vishram Singh's Textbook of Neuroanatomy – 4th Edition
2. Netter's Human Anatomy Atlas – 7th Edition
3. Grant's Human Anatomy Atlas – 13th Edition
4. Vishram Singh's General Anatomy
5. Gray's Anatomy for Students
6. Histology Text and Atlas – Brijesh Kumar, 2nd Edition
7. Surface and Radiological Anatomy – A. Halim, 3rd Edition
8. Cunningham's Practical Anatomy

Project Work/ Assignments
1. Prepare a labelled chart of the long bone showing its parts, blood supply, and nerve supply. 2. Illustrate the brachial plexus with its branches and correlate with clinical conditions such as Erb's palsy and Klumpke's paralysis. 3. Diagram the chambers of the heart, great vessels, and mediastinal boundaries with their clinical correlations. 4. Chart the hip and knee joints with their ligaments, movements, and applied anatomy relevant to common injuries. 5. Prepare a presentation on the gross anatomy of the brain and ventricular system with applied clinical correlations.
Online Resources (ebooks, notes, ppts, video lectures etc.)
NPTEL – Anatomy and Physiology (NOC, IIT Madras): https://nptel.ac.in/courses/102106087 https://presiuniv.knimbus.com
Topics relevant to "SKILL DEVELOPMENT"
Identification of bones, joints, and surface landmarks; demonstration of muscle attachments; and correlation of regional anatomy with radiographs, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

2. Human Physiology

Course Code: PI	COURSE TITLE: HUMAN PHYSIOLOGY

Version No. 1

Course Pre requisites: NIL

Anti-requisites: Nil

Course Description

An overall goal of this course is to enable students to understand the role of molecules, cells, tissues, organs, and organ systems (endocrine, nervous, muscular and immune systems) in human health and disease. This class focuses on understanding physiology – the functioning of a living organism and its component parts. This requires going beyond memorization of facts to acquire an understanding of how and why the body functions the way it does, and what happens when it does not function properly.

Course Objective

- Understanding of the physiology and basic regulatory concepts related to the functioning of life processes.
- Understand the functions of important physiological systems including the cardio-respiratory, renal, reproductive and metabolic systems.
- Define homeostasis and explain how homeostatic mechanisms normally maintain a constant interior milieu.
- State the functions of each organ system of the body, explain the mechanisms by which each functions, and relate the functions and the anatomy and histology of each organ system. • Understand and demonstrate the interrelations of the organ systems to each other. • Predict and explain the integrated responses of the organ systems of the body to physiological and pathological stresses.
- Understand physiology of the neuromuscular system, particularly the regulation of strength and velocity of a contraction by muscle receptors interacting with the nervous system. • Understand the function of the cardiovascular, circulatory and respiratory systems at rest and during exercise, and their adaptations to training.
- Explain the pathophysiology of common diseases related to the organ systems of the body receptors interacting with the nervous system.
- Understand the function of the cardiovascular, circulatory and respiratory systems at rest and during exercise, and their adaptations to training.
- Explain the pathophysiology of common diseases related to the organ systems of the body.

Course Outcomes

After completion of this course the student shall be able to (Skill):

- Perform, analyse and report on experiments and observations in physiology. • Recognise and identify principal tissue structures.
- Identify different blood cells in a film, and indicate the identifying features of each type of leukocyte.
- Clinically examine the Cardiovascular and respiratory system and record BP and pulse at rest and in different postures.

Course Content:

MODULE 1	**GENERAL PHYSIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**12 HOURS**
• Introduction to Physiology, Organisation of Human Body • Compartments of Body Fluid • Homeostasis and Biofeedback Mechanism • Cell Physiology • Cell Membrane and Concept of Membrane Potentials • Transport Across Cell Membrane • Concept of Osmolar and Tonicity Units				
MODULE 2	**HAEMATOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**17 HOURS**
• Describe the composition and functions of blood components • Discuss the origin, forms, variations and functions of plasma proteins • Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin • Describe RBC formation (erythropoiesis & its regulation) and its functions • Describe different types immunity and its regulation • Describe WBC formation (granulopoiesis) and its regulation • Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura) • Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion • Define and classify different types of immunity. Describe the development of immunity and its regulation • Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT				
MODULE 3	**CARDIOVASCULAR PHYSIOLOGY (CVS)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**23 HOURS**

• Classify muscle tissue according to structure & action

• Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples

• Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.

• Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions

• Discuss the events occurring during the cardiac cycle

• Describe generation, conduction of cardiac impulse

• Describe and discuss haemodynamics of circulatory system

• Describe and discuss local and systemic cardiovascular regulatory mechanisms • Describe the factors affecting heart rate, regulation of cardiac output& blood pressure

• Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin foetal pulmonary and splanchnic circulation, • Describe the patho- physiology of shock, syncope and heart failure

• Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment

• Describe interpretation of normal ECG in a volunteer or simulated environment

MODULE 4	**RESPIRATORY PHYSIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**12 HOURS**

• Describe the functional anatomy of respiratory tract

• Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar, Surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs

• Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide • Describe and discuss the physiology of high altitude and deep sea diving

• Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing

• Describe and discuss lung function tests & their clinical significance

• Demonstrate the correct technique to perform & interpret Spirometry

MODULE 5	**RENAL PHYSIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**11 HOURS**

• Describe structure and function of kidney

• Describe the structure and functions of juxta glomerular apparatus and role of renin angiotensin system

• Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism

• Describe & discuss the significance & implication of Renal clearance

• Describe the renal regulation of fluid and electrolytes & acid-base balance • Describe the innervations of urinary bladder, physiology of micturition and its abnormalities

MODULE 6	**ENDOCRINE PHYSIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**10 HOURS**

• Describe the physiology of bone and calcium metabolism
• Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus
• Describe the physiology of Thymus & Pineal Gland
• Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas • Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome. • Describe & differentiate the mechanism of action of steroid, protein and amine hormones

MODULE 7	**MUSCLE PHYSIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**26 HOURS**

• Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & Other growth factors/cytokines
• Describe the types, functions & properties of nerve fibers
• Describe the degeneration and regeneration in peripheral nerves
• Describe the structure of neuro- muscular junction and transmission of impulses • Discuss the action of neuro- muscular blocking agents
• Describe the Pathophysiology of Myasthenia gravis
• Describe the different types of muscle fibres and their structure
• Describe action potential and its properties in different muscle types (skeletal & smooth) • Describe the molecular basis of muscle contraction in skeletal andin smooth muscles • Describe the mode of muscle contraction (isometric and isotonic)
• Explain energy source and muscle metabolism
• Explain the gradation of muscular activity
• Describe muscular dystrophy: myopathies
• Perform Ergography
• Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters

MODULE 8	**PHYSIOLOGY OF DIGESTIVE SYSTEM**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**14 HOURS**

• Describe the structure and functions of digestive system
• Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion
• Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.
• Describe the physiology of digestion and absorption of nutrients
• Describe the source of GIT hormones, their regulation and functions
• Describe the Gut-Brain Axis
• Describe & discuss the structure and functions of liver and gallbladder
• Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests

MODULE 9	REPRODUCTIVE PHYSIOLOGY	Assignment/ Quiz	Viva voce / Skills Assessment	9 HOURS

- Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.
- Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.
- Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness
- Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes
- Describe and discuss the physiological effects of sex hormones

MODULE 10	NEURO PHYSIOLOGY	Assignment/ Quiz	Viva voce / Skills Assessment	30 HOURS

- Describe and discuss the organization of nervous system
- Describe and discuss the functions and properties of synapse, reflex, receptors • Describe and discuss somatic sensations & sensory tracts
- Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus
- Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)
- Describe and discuss Spinal cord, its functions, lesion & sensory disturbances • Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities
- Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production
- Describe and discuss the physiological basis of memory, learning and speech • Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).
- Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment
- Identify normal EEG forms
- Describe and discuss perception of smell and taste sensation
- Describe and discuss patho- physiology of altered smell and taste sensation • Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing
- Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex
- Describe and discuss the physiological basis of lesion in visual pathway

MODULE 11	CARDIORESPIRATORY PHYSIOLOGY	Assignment/ Quiz	Viva voce / Skills Assessment	16 HOURS

• Describe and discuss mechanism of temperature regulation

• Describe and discuss adaptation to altered temperature (heat and cold) • Describe and discuss cardio- respiratory and metabolic adjustments during exercise; physical training effects

• Discuss & compare Cardio respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold) • Describe physiology of Infancy

• Interpret growth charts

• Interpret anthropometric assessment of infants

• Discuss the physiological effects of meditation

• Describe and discuss physiology of aging; free radicals and antioxidants

Targeted Application & Tools that can be used

• Sphygmomanometer, stethoscope, and pulse oximeter for cardiovascular and respiratory physiology demonstrations.

• Spirometer for lung function testing and interpretation.

• ECG machine/simulator for recording and interpreting a normal electrocardiogram. • Haematology kits (haemoglobinometer, microscope, blood grouping reagents) for blood-related practicals.

• Physiology simulation software/apps for nerve conduction, muscle contraction, and reflex demonstrations.

List of Laboratory Tasks

1. Estimate Hb, RBC count, TLC, DLC, RBC indices, blood grouping, and Bleeding Time/Clotting Time (BT/CT) using standard haematological techniques.

2. Record blood pressure and pulse rate at rest and at different grades of exercise and posture in a volunteer or simulated environment.

3. Record and interpret a normal Electrocardiogram (ECG) in a volunteer or simulated environment.

4. Demonstrate the correct technique to perform and interpret spirometry, and discuss its clinical significance.

5. Demonstrate nerve conduction, muscle contraction, and elicitation of common reflexes in a volunteer or simulated environment.

6. Observe and report on blood grouping, blood banking, and transfusion procedures (ECE visit to blood bank).

Text Book(s)

1. Human Physiology and Biochemistry for Physical Therapy and Occupational Therapy – A. K. Jain.

2. Essentials of Medical Physiology – K. Sembulingam and Prema Sembulingam. 3. Ross and Wilson Anatomy and Physiology in Health and Illness – Anne Waugh and Allison Grant.

4. Textbook of Medical Physiology – Guyton and Hall.

Reference Book(s)

1. Text book on Medical Physiology – Guyton

2. Textbook of Physiology – A K Jain

3. Review of Medical Physiology – Ganong

4. Samson & Wright's Applied Physiology

Project Work/ Assignments

1. Prepare a report on the physiology of blood components and their clinical significance in common haematological disorders. 2. Demonstrate and document the recording of blood pressure and pulse at rest and during graded exercise. 3. Prepare a case-based assignment on the pathophysiology of common cardiovascular or respiratory conditions. 4. Illustrate the mechanism of neuromuscular transmission and correlate with a clinical condition such as myasthenia gravis. 5. Prepare a report on the physiological basis of growth and aging relevant to occupational therapy practice.
Online Resources (ebooks, notes, ppts, video lectures etc.)
NPTEL – Human Physiology (IISER Pune): https://nptel.ac.in/courses/102106340 Presidency University Knimbus Digital Library: https://presiuniv.knimbus.com
Topics relevant to "SKILL DEVELOPMENT"
Clinical measurement and interpretation skills (blood pressure, pulse, spirometry, ECG) and laboratory skills (haematology estimations), attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

3. Biochemistry

Course Code: BC	**COURSE TITLE: BIOCHEMISTRY**
Version No. 01	
Course Pre requisites ; Nil	
Anti-requisites: Nil	
Course Description	
Biochemistry, the study of biological phenomena at cellular and molecular level, is studied to gain knowledge about the principles that govern complex biological systems. The primary objective of this course is to give students a solid foundation in biochemical processes, to develop analytical, technical and critical thinking skills and to make them scientifically literate.	
Course Objective: • Explain the scientific basis for an understanding of the mechanisms of metabolic and functional disturbances. • Gain knowledge and understand the principles that govern the structures of macromolecules and their participation in molecular recognition. • Understand molecular and functional organization of cell and its subcellular components. • Provide concept of enzymes. • Describe the chemistry, metabolism of Carbohydrates, lipids and proteins and its related disorders. • Understand the Integration and homeostasis of various metabolism. • Understand the metabolism of Purines, Pyrimidines, Minerals and its related disorders. •	

Understand the process of Acid-base and Water-Electrolyte balance and imbalance. • Recognize the Biochemical role of vitamins and manifestations of its deficiencies.

Course Outcomes

After completion of this course the student shall be able to (Skill):

• Describe the structure and function of the plasma membrane and intracellular organelles. • Classify and explain the biochemical importance of carbohydrates, lipids, proteins, amino acids and nucleic acids.

• Classify enzymes, explain factors affecting enzyme activity, and describe the diagnostic clinical importance of enzymes and isoenzymes.

• Describe the electron transport chain, oxidative phosphorylation, and the mechanism of hormone action.

• Explain the metabolism of carbohydrates, lipids, proteins and nucleic acids, and correlate disturbances in metabolism with common clinical disorders.

• Describe the biochemical role of vitamins and minerals and the manifestations of their deficiencies.

• Explain the principles of acid-base balance and water-electrolyte balance and imbalance. Attitude:

• Apply biochemical knowledge to interpret common clinical laboratory investigation reports.

Course Content:

MODULE 1	**ENZYMES**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**4 HOURS**
• Describe Classification of enzymes, Factors affecting enzyme activity. • Enumerate Enzyme inhibitors (kinetic is not required) • Describe Diagnostic clinical importance of enzymes & Isoenzymes • Diagnostic uses of enzymes				
MODULE 2	**BIOLOGICAL OXIDATION MECHANISM OF HORMONE ACTION AND METABOLISM OF CARBOHYDRATE, LIPID, PROTEIN AND NUCLEIC ACID**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**17 HOURS**

• Describe the Electron transport chain
• Describe Substrate level & oxidative phosphorylation
• Definition, Describe Classification OF Enzymes
• Describe Mechanism of hormone action
• Describe Biochemical aspects of digestion and absorption of carbohydrates • Describe Glycolysis (Aerobic and Anaerobic)
• Describe Glycogen metabolism, its regulation and glycogen storage diseases • Explain Gluconeogenesis-Cori's cycle, HMP shunt and its significance
• Explain: Blood glucose regulation, Lactose intolerance and Diabetes mellitus • Describe Biochemical aspects of digestion and absorption of proteins
• Describe Fate of amino acids in the body (deamination, Transamination, transmethylation), fates of ammonia and urea cycle & disorders
• Describe Biochemical aspects of digestion and absorption of lipids
• Describe Beta oxidation of fatty acids and its energetics Ketogenesis, ketolysis & ketosis • Describe Cholesterol and its importance (No biosynthesis y
• Explain Classification and functions of Lipoproteins
• Describe Fates of- acetyl CoA and glycerol
• Describe Catabolism of purines and related disorders
• Describe Lipid Profile- Triacylglycerol, cholesterol (HDL, LDL & VLDL)
• Describe. Catabolism of purines and related disorders

MODULE 3	**VITAMINS, MINERAL & NUTRITION**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**11 HOURS**

• Describe Classification, sources, functions and RDA of fat soluble and Water-soluble vitamins.
• Describe Active forms & metabolic role, deficiency manifestations
• Describe Co-enzyme firms of vitamin B-complex group
• Explain Hypervitaminosis
• Describe Calcium and Phosphorous: Sources, RDA, functions and disorders • Describe Trace elements: Iron, Manganese, Selenium, Zinc & Fluoride
• Describe Importance of nutrition
• Describe Calorimetry, Respiratory Quotient and its significance
• Describe Energy requirement with reference to age and sex
• Describe Thermogenesis and specific dynamic action
• Discuss the Balance diet for normal adult and role of fibres in diet
• Describe Nitrogen balance and its significance.
• Describe Protein energy malnutrition (Kwashiorkor & Marasmus)

MODULE 4	**ACID BASE AND WATER ELECTROLYTE BALANCE AND IMBALANCE**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**4 HOURS**

- Describe Sodium, Potassium and their importance in body
- Describe Balance & imbalance of Water, Electrolytes
- Describe Balance & imbalance of Water, Electrolytes
- Describe Liver function tests and Renal function tests
- Describe Relevance of blood levels of glucose, urea, calcium, phosphorus and uric acid

MODULE 5	**MUSCLE CONTRACTION AND CONNECTIVE TISSUE**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**4 HOURS**

- Enumerate Contractile elements
- Describe Biochemical events during contraction
- Describe Energy metabolism in skeletal and cardiac muscles
- Describe Biochemistry of connective tissue

MODULE 6	**FUNDAMENTAL UNIT OF LIFE: THE CELL AND CHEMISTRY OF BIOMOLECULES (CARBOHYDRATES, LIPIDS, PROTEINS, NUCLEIC ACIDS)**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**5 HOURS**

- Describe Plasma membrane; structure and function
- Understand Function of intracellular organelle in brief (no structural details) • Define & explain the Classification (with proper examples) and their functions • Define& explain the Various ways of Classification (with proper examples) proteins, amino acids, peptides & their biochemical importance, Denaturation, coagulation, isoelectric pH and its significance
- Definition, Class Define& explain the ification (with proper examples) and functions of Lipids and fatty acids.
- Describe Structure & functions of DNA, RNA, Nucleotides & their biological importance

Targeted Application & Tools that can be used

- Basic biochemistry laboratory glassware and reagents for qualitative tests (urine, blood sugar, proteins).
- Colorimeter/spectrophotometer for demonstrating enzyme and metabolite estimation principles.
- Charts and models of metabolic pathways (glycolysis, TCA cycle, protein synthesis). • Case-based clinical biochemistry reports (liver function tests, renal function tests) for interpretation practice.

Text Book(s)
1. Textbook of Biochemistry for Medical Students – D. M. Vasudevan, Sreekumari S., Kannan Vaidyanathan. 2. Essentials of Biochemistry – Pankaja Naik.
Reference Book(s)
1. Essentials of Biochemistry, 1st Edition: Dr. Pankaja Naik 2. Essentials of Biochemistry 7th Edition: Dr. D M Vasudeva 3. Biochemistry 2012 Edition: Dr. U Satyanarayan 4. Review of Biochemistry (24th edition) – Harpar
Project Work/ Assignments
1. Prepare a chart summarizing the major metabolic pathways (carbohydrate, protein, and lipid metabolism). 2. Write an assignment on the biochemical basis of a common metabolic disorder (e.g., diabetes mellitus). 3. Prepare a report interpreting a set of common clinical biochemistry investigation reports.
Online Resources (ebooks, notes, ppts, video lectures etc.)
NPTEL – Biochemistry (IIT Kharagpur): https://nptel.ac.in/courses/104105076 https://presiuniv.knimbus.com
Topics relevant to "SKILL DEVELOPMENT"
Basic laboratory skills in biochemical estimation and interpretation of clinical biochemistry reports, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

4. Fundamentals of Occupational Therapy I

Course Code: FOT I	**COURSE TITLE: FUNDAMENTALS OF OCCUPATIONAL THERAPY I**
Version No. 1.0	
Course Prerequisites: Nil	
Anti-requisites: Nil	
Course Description: This course gives an introduction to the foundational concepts of Occupational Therapy. This course introduces students to the professional standards, ethical principles, and documentation in occupational therapy practice. It also gives an overview of the Occupation Therapy process, its frameworks, components – OTPF,	

Rehabilitation Philosophy, methods of assessment of ROM & muscle strength. Goal: The primary goal of a first-year occupational therapy program is to lay the foundational knowledge and skills necessary for students to become competent and ethical occupational therapy practitioners. The program encourages students to progress through their education with a solid understanding of the profession and the skills needed to begin their journey as occupational therapy professionals.

Course Objective

- Remember and understand conceptual foundations of ethics and documentation.
- Understand the therapeutic relationship among the rehabilitation team members, the patient and the therapist.
- Understand the assessment methods to improve participation in social and community life. • Understand use of therapeutic activity and apply knowledge of activity analysis to choose appropriate activity for therapeutic use.
- Understand the principles & application of ROM, muscle strength assessment, its importance in Occupational Therapy.

Course Outcomes

After completion of this course the student shall be able to (Skill):

- Analyse various Therapeutic activities & match them with clients demands for participation in daily skills.
- Demonstrate assessment skills for ROM & muscle strength.

Attitude:

- Demonstrate understanding of respect and empathy in conduct with patients.

Course Content:

MODULE 1	**INTRODUCTION TO OCCUPATION, OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**13 HOURS**

- Define and describe occupation, theory of occupation and evolutionary traits. • Enumerate and describe dimensions of occupation.
- Enumerate and describe forms of occupation.
- Explain the need to understand occupation.
- Understand the philosophy and concept of occupation.
- Explain therapeutic application of occupation.
- Explain occupational science and application of its theory to occupational therapy. • Define and explain the scope of occupational therapy.

MODULE 2	**HISTORY & EVOLUTION OF OCCUPATIONAL THERAPY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**13 HOURS**

• Describe the Historical Context of Occupational Therapy Across the World • Explain the influences on Evolution of Occupational Therapy • Explain Rehabilitation philosophy • Describe Principles of Physical Medicine and Rehabilitation • Enlist International /National/State Organizations of Occupational Therapy • Describe how Professional Organizations Supports Professional Development and Enlist Benefits of Professional Associations • Historical Context of Occupational Therapy in India Including State Council and NCAHP (National Commission for Allied & Healthcare professions) • Describe composition and Functions of NCAHP, SCAHP				
MODULE 3	**HUMAN DEVELOPMENT AND MATURATION**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**7 HOURS**
• Define and describe importance of knowledge of human development. • Describe aspects of human development. • Describe factors influencing human growth and development. • Describe general principles of human development and specific principles of maturation.				
MODULE 4	**PRINCIPLES AND METHODS OF ASSESSMENTS**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**30 HOURS**

• Define active, passive, and functional range of motion (ROM), total active and total passive motion.

• Describe various methods of range of motion evaluation.

• Enlist the purposes of measuring joint range of motion

• Enlist precautions for and contraindications to joint Measurement Understand and recognize norms of joint range of motion of various

• joints of upper extremity, lower extremity and spine and end feels for each motion and describe how to establish ROM norms for clients with bilateral as well as unilateral involvement.

• Describe various types of goniometers and parts of goniometers.

• Evaluate range of motion of the upper extremity joints using a goniometer based on joint range of motion principles and procedures on normal individuals and patients. • Evaluate range of motion of the lower extremity joints using a goniometer based on joint range of motion principles and procedures on normal individuals and patients. • Evaluate range of motion of the spinal joints using a goniometer, inclinometer and tape method based on joint range of motion principles and procedures on normal individuals and patients

• Understand evaluation of range of motion of the temporomandibular joint using a goniometer, and tape method based on joint range of motion principles and procedures on normal individuals.

• Define types of muscle contractions, types of muscle strength and muscle power.

• Enlist the steps of the manual muscle test procedure in correct order and describe the limitations of the procedure.

• Enumerate and explain the various muscle strength grading systems

• Perform/administer a manual muscle test to evaluate strength of the upper extremity group muscles based on manual muscle test principles and procedures on normal person. • Perform/administer a manual muscle test to evaluate strength of the lower extremity group muscles based on manual muscle test principles and procedures on normal person. • Perform/administer a manual muscle test to evaluate strength of the spine group muscles based on manual muscle test principles and procedures on normal person. • Define and explain muscle endurance and general endurance or aerobic capacity. • Perform/administer a muscle endurance test based on the principles and procedures on normal person.

MODULE 5	**THERAPEUTIC EXERCISES**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**13 HOURS**

• Explain principles of therapeutic exercises.

• Enumerate purposes and indications of therapeutic exercises.

• Enumerate precautions and contraindications of therapeutic exercises. • Determine pre-requisites of prescriptions of therapeutic exercises.

• Define, classify, differentiate and demonstrate types of therapeutic exercises and give examples of its application to activities.

• Describe treatment goals and enlist therapeutic activities for patients who have problems with range of motion and flexibility.

• Describe treatment goals and enlist therapeutic activities for patients who have problems with muscle strength.

• Describe treatment goals and enlist therapeutic activities for patients who have problems with muscle and general endurance.

MODULE 6	ACTIVITY ANALYSIS	Assignment/ Quiz	Viva voce / Skills Assessment	7 HOURS

• Explain principles of activity analysis with respect to biomechanical, sensory motor & socio-cultural aspects including the criteria for selection of an activity for a client. • Determine grading of occupations/activities/tasks to challenge the person's abilities to improve performance.

• Determine adaptation of occupations/activities/tasks to increase their therapeutic value or to bring them within the capability of a person.

• Administer, demonstrate and explain activity analysis of any adjunctive activities, enabling activities (occupation-as-means), purposeful activities (occupation-as- end) and occupation.

MODULE 7	MEDIA, METHODS AND THERAPEUTIC AND PHYSICAL AGENT MODALITIES	Assignment/ Quiz	Viva voce / Skills Assessment	7 HOURS

• Define media, methods and modalities.

• Describe the phases of tissue healing.

• Describe the appropriate indications, precautions and contraindications for use of superficial thermal agents, deep thermal agents, and electrotherapeutic agents (Physical agent modalities are used only as an adjunct to Occupational Therapy only)

• Enlist the role of physical agent modalities in occupational therapy practice. (Physical agent modalities are used only as an adjunct to Occupational Therapy only)

Targeted Application & Tools that can be used

• Activities of Daily Living (ADL) kit, adaptive devices, and assistive technology samples for hands-on practice.

• Splinting materials and tools (thermoplastic sheets, heat gun, splinting scissors) for fabrication exercises.

• Sample orthoses, prostheses, and adaptive device sets for identification and application demonstration.

• Activity analysis worksheets and task-grading templates for occupation-based practice. • Standardized OT assessment tools (COPM, functional independence measures) for evaluation practice.

List of Laboratory Tasks

1. Demonstrate the use of activity analysis to break down a common daily activity into its component steps.

2. Perform grading of a selected occupation/activity/task to challenge a client's performance ability.

3. Demonstrate adaptation of a given activity to increase its therapeutic value for a hypothetical client.

4. Conduct a developmental screening exercise using a standard human development checklist.

5. Demonstrate administration of a standardized assessment tool (e.g., COPM) on a peer. 6. Demonstrate basic therapeutic exercise techniques (active, active-assisted, passive range of motion).

7. Identify and describe common media, methods, and therapeutic/physical agent modalities used in OT practice.
8. Demonstrate the phases of tissue healing using a case-based discussion format. 9. Prepare an activity analysis worksheet for a purposeful occupation-based activity. 10. Identify and demonstrate the safe use of common therapeutic media and methods used in occupational therapy practice.

Text Book(s)

1. Fundamentals of Occupational Therapy: An Introduction to the Profession – Bernadette Hattjar.
2. Pedretti's Occupational Therapy: Practice Skills for Physical Dysfunction – Heidi McHugh Pendleton, Winifred Schultz-Krohn.

Reference Book(s)

1. Willard and Spackman's Occupational Therapy by Elizabeth Blesedel Crepeau, Ellen S. Cohn, Barbara A. Boyt Schell.
2. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby.
3. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins.
4. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by Annie Turner, Marg Foster, Sybil E. Johnson. Published by Churchill Livingstone. 5. Introduction to Occupational Therapy by Hussey Subonis, Chafea O Brien.

Project Work/ Assignments

1. Conduct an activity analysis of a common activity of daily living and present its therapeutic adaptations.
2. Design and fabricate a simple static splint for a given clinical condition and document the process.
3. Prepare a case study applying the occupational therapy process (assessment to intervention planning) for a hypothetical client.
4. Present a comparative report on commonly used adaptive devices and their indications.

Online Resources (ebooks, notes, ppts, video lectures etc.)

WFOT (World Federation of Occupational Therapists) Resources: https://wfot.org/resources https://presiuniv.knimbus.com

Topics relevant to "SKILL DEVELOPMENT"

Activity analysis, task grading and adaptation, basic splinting, and use of standardized occupational therapy assessment tools, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

5. English & Communication Skills (NUE)

Course Code: ENCS	COURSE TITLE: ENGLISH & COMMUNICATION SKILLS (NUE)

Version No. 1.0

Course Pre requisites: Nil

Anti-requisites: Nil

Course Description

This course gives a brief overview of understanding of the importance of grammar for writing & speaking of English language & communication skills in Occupational Therapy practice, Gives the guidelines for developing communication skills for professional. Goal: The primary goal of delivering the effective communication & English speaking & writing for the first year Occupational Therapy under graduate aware about the effective communication skills & need for addressing them.

Course Objective

- Converse & write the texts/documents in English.
- Remember and understand the importance and process of communication. • Explain education and career skills, planning, decision making and organization, culture and etiquette.
- Describe the method of creating a first impression and explain the way of introduction & presentation of self (physical appearance) at the university and during academic meetings and conferences.
- Enlist online and offline meeting etiquette.

Course Outcomes:

After completion of this course the student shall be able to (Skill):

- Converse and write texts/documents in English with correct grammar and usage. • Demonstrate the process and importance of effective verbal and non-verbal communication.
- Differentiate between behaviours and apply appropriate behaviour and etiquette in social and professional settings.
- Draft letters, e-mails, reports, case studies and basic compositions following professional writing conventions.
- Apply education and career planning skills, including decision making, organization and workplace etiquette.
- Demonstrate appropriate self-presentation and introduction skills at academic meetings and conferences.

Attitude:

- Demonstrate professionalism, active listening and respectful communication with patients, peers and colleagues.

Course Content:

MODULE 1	**BEHAVIORS & METHODS OF COMMUNICATION**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**7 HOURS**

• Define and classify behaviours and describe the concept of behaviour training. • Define and describe the method of creating a first impression and explain the way of introduction & presentation of self (physical appearance) at the university and during academic meetings and conferences.

• Understand how to exhibit professionalism in social settings. Describe and enlist online and offline meeting etiquette.

MODULE 2	**ENGLISH LANGUAGE**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**4 HOURS**

• Understand English Language Grammar & Converse in English

• Explain & demonstrate the different methods of writing like letters, E- mails, report, case study, collecting the patient data etc. Basic compositions, journals, with a focus on paragraph form and organization.

MODULE 3	**CONCEPT, PURPOSE & PROCESS OF COMMUNICATION SKILLS**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**19 HOURS**

• Enlist the importance and process of communication.

• Enumerate the Barriers to effective communication.

• Differentiate between verbal and non-verbal communication.

• Define types of and describe communication skills and etiquettes.

• Describe purpose of communication skills and define roles of varied stakeholders of communication.

• Define and explain the concept of self-care, self- development, self- appraisal, goal setting and time management.

• Enlist the goals of education and career skills, planning, decision making and organization, culture and etiquette.

• Define and describe the concept of group discussion and team skills, interpersonal and intrapersonal people skills.

• Understand the process of preserving documents in hard and soft copy [In various National portals e.g. Digi locker]

Targeted Application & Tools that can be used

• Language lab software/apps for pronunciation and listening practice.

• Sample case-presentation templates and clinical documentation formats for professional writing practice.

• Role-play and simulated patient-communication scenarios for interpersonal and therapeutic communication skills.

• Audio-visual aids (recorded conversations, presentations) for listening and comprehension exercises.

List of Laboratory Tasks

1. Practice and demonstrate correct pronunciation and grammar usage through guided reading exercises.
2. Draft a sample patient case history/report following professional documentation conventions.
3. Conduct a role-play exercise demonstrating verbal and non-verbal communication with a simulated patient.

4. Participate in a group discussion demonstrating effective communication etiquette and active listening.

5. Prepare and deliver a short seminar presentation on a given topic with appropriate body language.
6. Draft a formal letter/e-mail following standard professional correspondence format. 7. Demonstrate self-introduction and interview etiquette in a simulated setting.

Text Book(s)

1. Communicative English for Nurses – Shama Lohumi, Rakesh Lohumi.
2. Textbook of Communicative English for Undergraduate and Diploma Nursing Students – Shivani Sharma, Sarika Sood.

Reference Book(s)

1. Cole K. Crystal clear communication. 2nd ed. Chennai: East West Books, 2001. 2. Taylor G. English conversation practice. New Delhi: Tata Mc Graw Hill Publishing Company; 2001.

3. Thomas EB. The most common mistakes in English. New Delhi: Tata Mc Graw Hill Publishing Company; 2001.
4. English for all (Beginners to advanced).

Project Work/ Assignments

1. Prepare and deliver a case presentation on a clinical topic using appropriate medical terminology and professional communication.

2. Write a reflective journal entry on a simulated patient-communication exercise. 3. Prepare a sample clinical documentation report (case history/discharge summary) following professional writing conventions.

Online Resources (ebooks, notes, ppts, video lectures etc.)

NPTEL – Communication Skills (IIT Kanpur):
https://nptel.ac.in/courses/109104031 https://presiuniv.knimbus.com

Topics relevant to "SKILL DEVELOPMENT"

Professional communication, clinical documentation, and presentation skills relevant to patient and interdisciplinary team interaction, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

6. Fundamentals of Occupational Therapy II

Course Code: FOT II	**COURSE TITLE: FUNDAMENTALS OF OCCUPATIONAL THERAPY II**

Version No. 1.0

Course Pre requisites: Nil

Anti-requisites: Nil

Course Description

This course gives an introduction to the foundational concepts of Occupational Therapy. This course introduces students to the professional standards, ethical principles, and documentation in occupational therapy practice. It also gives an overview of the Occupation Therapy process, its frameworks, components – Activities of daily living, Work, hand functions and hand splinting. Goal: The primary goal of a first-year occupational therapy program is to lay the foundational knowledge and skills necessary for students to become competent and ethical occupational therapy practitioners. The program encourages students to progress through their education with a solid understanding of the profession and the skills needed to begin their journey as occupational therapy professionals.

Course Objective

- Remember and understand conceptual foundations of ethics and documentation.
- Understand the therapeutic relationship between the patient and the therapist. • Understand the role of activities of daily living for maintaining health, well-being, and participation in social and community life.
- Understand concept of work and work evaluation and apply knowledge for return to work when dealing with clients in the forthcoming years.
- Understand the basic hand functions and assessment tools used.
- Identify equipment, material, and tools used in occupational therapy practice. • Understand basics of hand splint making.

Course Outcomes

After completion of this course the student shall be able to (Skill):

- Analyse various jobs with respect to psychological and physical demands. • Demonstrate making a paper pattern of commonly used hand splints by applying the principles of splint making.

Attitude:

- Demonstrate understanding of respect and empathy in conduct with patients.

Course Content:

MODULE 1	**CODE OF ETHICS AND CONDUCT IN OCCUPATIONAL THERAPY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**12 HOURS**

• Define the terms ethics, morality and moral reasoning • Discuss ethical implications of trends in healthcare and Occupational therapy practice • Enumerate the ethical theories and principles that apply to clinical practice of occupational therapy • Enumerate the code of ethics and the principles of National Commission of Allied & Healthcare Professions (NCAHP) • Outline the ethical elements of the therapeutic relationship between client and Therapist				
MODULE 2	**UNIFORM TERMINOLOGY AND OCCUPATIONAL THERAPY PRACTICE FRAMEWORK**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**10 HOURS**
• Describe historical overview of uniform terminology • Describe the evolution of the occupational therapy practice framework (OTPF) • Describe Domains (Occupations, Contexts, Performance Patterns, Performance Skills & Client Factors) and Practice (Evaluation, Intervention & Outcomes) of OTPF • Give brief overview of ICF				
MODULE 3	**OVERVIEW OF THE OCCUPATIONAL THERAPY PROCESS AND OUTCOME**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**5 HOURS**
• Describe Occupational therapy as a process and enumerate its components • Describe the evaluation related to Occupational profile, occupational performance and targeted outcomes				
MODULE 4	**DOCUMENTATION OF OCCUPATIONAL THERAPY SERVICES**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**7 HOURS**
• Describe the terms Screening, Evaluation and Assessment • Differentiate standardised, non standardised, subjective and objective assessments • Understand purpose and types of documentation				
MODULE 5	**ACTIVITIES OF DAILY LIVING**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**10 HOURS**

• Define and classify activities of daily living (ADL) • Discuss ADL evaluation and describe various scales used in evaluation of B.OTh basic and instrumental ADL • Discuss and understand principles and Specific Techniques in ADL Training for: Weakness, Low Endurance, Limited Range of Motion, Inco-ordination, Loss of Use of One Side of the Body, Limited Vision, Decreased Sensation, Access to Home, Community and Workplace • Define Adaptation and explain its process				
MODULE 6	**RETURN TO WORK**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**12 HOURS**
• Define and classify work • Understand and describe Work Evaluations & its assessment tools – • Define Prevocational Testing and Training and describe work conditioning and work hardening • Enumerate assessment needs and components of job analysis • Understand and explain job analysis of Tailoring, carpentry, Driving, data entry on computers				
MODULE 7	**HAND FUNCTIONS & ITS EVALUATION METHODS**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**10 HOURS**
• Define and classify normal hand functions • Describe resting and functional position of the hand • Describe various assessment methods for hand functions • Define oedema and describe its assessment by various methods				
MODULE 8	**TOOLS, EQUIPMENT AND MATERIALS USED IN SPLINT FABRICATION**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**10 HOURS**
• Identify and explain the types, components, therapeutic values & demonstrate the uses of various tools used in fabrication of splints • Identify and explain the uses of various equipment used in fabrication of splints • Identify and explain the uses of various materials used in fabrication of splints • understand and apply its knowledge in use, storage and maintenance of tools and equipments				
MODULE 9	**INTRODUCTION TO HAND SPLINTING**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**14 HOURS**

- Define & classify hand splints
- Explain the various characteristics of splint fabrication materials
- Enumerate the indications and therapeutic uses of hand splints
- Describe the various principles of hand splints
- Demonstrate the fitting and the check out of hand splints
- Prepare the paper model of following splints – finger gutter , functional hand splint, short opponens, radial bar cock up, dynamic extension outrigger splint.

Targeted Application & Tools that can be used

- Electrotherapy and electro-physical agent equipment (TENS, ultrasound therapy unit, IFT) for demonstration of safe use.
- Exercise therapy equipment (therapy bands, weights, plinths, balance boards) for therapeutic exercise practice.
- Goniometer and manual muscle testing charts for range-of-motion and strength assessment practice.
- Sample treatment planning worksheets correlating modalities with clinical conditions. • Clinical orientation checklists and hospital department orientation schedules.

List of Laboratory Tasks

1. Demonstrate adherence to a code of ethics and conduct through a case-based ethical dilemma discussion.
2. Practice documentation of occupational therapy services using a standard SOAP note format.
3. Demonstrate the steps of the occupational therapy process (screening, assessment, intervention planning) for a given case.
4. Conduct an Activities of Daily Living (ADL) assessment on a peer using a standardized checklist.
5. Demonstrate hand function evaluation techniques including grip and pinch strength testing.
6. Identify and demonstrate the use of common tools, equipment, and materials used in splint fabrication.
7. Fabricate a simple static hand splint using thermoplastic material under supervision. 8. Demonstrate goniometric measurement of joint range of motion relevant to hand function.
9. Prepare a return-to-work assessment plan for a hypothetical client with an upper limb injury.
10. Apply the Occupational Therapy Practice Framework (OTPF) domains and process to analyse a given case scenario.

Text Book(s)

1. Fundamentals of Occupational Therapy: An Introduction to the Profession – Bernadette Hattjar.
2. Pedretti's Occupational Therapy: Practice Skills for Physical Dysfunction – Heidi McHugh Pendleton, Winifred Schultz-Krohn.

Reference Book(s)

1. Willard and Spackman's Occupational Therapy by Elizabeth Blesedel Crepeau, Ellen S. Cohn, Barbara A. Boyt Schell.
2. Occupational Therapy - Practice Skills for Physical Dysfunction by Lorraine Williams Pedretti. Published by Mosby.

3. Occupational Therapy for Physical Dysfunction by Catherine A. Trombly, Mary Vining Radomski. Published by Lippincott Williams & Wilkins.

4. Occupational Therapy and Physical Dysfunction: Principles, Skills and Practice by Annie Turner, Marg Foster, Sybil E. Johnson. Published by Churchill Livingstone. 5. Therapeutic Exercise by John V. Basmajian & Steven L. Wolf. Published by Williams & Wilkins.

6. Therapeutic Exercise, Foundation & Techniques by Carolyn Kisner & Lynn Allen Colby. Published by F. A. Davis Company.

7. Muscle Testing & Function by F.P. Kendall.

8. Daniel's & Worthingham's Muscle Testing.

9. Measurement of Joint Motion: A guide to goniometry by C.C. Norkin & D. J. White. 10. Principle of Exercise Therapy by Dena Gardiner.

Project Work/ Assignments

1. Prepare a comparative report on the indications, contraindications, and physiological effects of common electro-physical agents.

2. Design a therapeutic exercise program for a given clinical condition and justify the choice of exercises.

3. Prepare a case study correlating clinical orientation observations with classroom learning of OT fundamentals.

4. Present an assignment on safety precautions and documentation while using electrotherapy modalities.

Online Resources (ebooks, notes, ppts, video lectures etc.)

WFOT (World Federation of Occupational Therapists) Resources: https://wfot.org/resources https://presiuniv.knimbus.com

Topics relevant to "SKILL DEVELOPMENT"

Safe and appropriate use of electro-physical agents, therapeutic exercise prescription, and goniometric/manual muscle testing assessment, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.

7. Environmental Sciences (NUE)

Course Code: EVS	**COURSE TITLE: ENVIRONMENTAL SCIENCES (NUE)**

Version No. 1.0

Course Pre requisites: Nil

Anti-requisites: Nil

Course Description

This course gives a brief overview of understanding of the effects of climate change on the natural systems and processes on earth, need for substantive environmental laws and growing public awareness of a need for action in addressing environmental problems.
Goal: The primary goal of environmental sciences is to make the first year Occupational Therapy under graduate aware about the environmental problems and need for action in addressing them.

Course Objective

• Remember and understand the ecological and biological concepts of environment. • Explain forms of energy, effects of climate change and conservation methods as relating to green house gas emissions.
• Understand and be aware about the policy and governance and ethics related to environment.

Course Outcomes

After completion of this course the student shall be able to (Skill):
• Describe the structure and function of ecosystems and the importance of biodiversity conservation.
• Identify the causes, effects and control measures of air, water, soil and noise pollution. • Explain the principles of natural resource management and sustainable development. • Describe the social issues related to environment, including population growth and environmental legislation.
• Correlate environmental factors with human and occupational health.
Attitude:
• Demonstrate responsible environmental practices and awareness relevant to community and occupational health settings.

Course Content:

MODULE 1	**INTRODUCTION TO ECOLOGY AND BIOLOGY**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**18 HOURS**

• Explain the concepts of ecosystems and ecology
• Describe Biotic and abiotic components of ecosystem and the Interactions between populations and communities in an ecosystem
• Describe cycling and importance of essential and nonessential chemicals in biosphere • Describe the two main kingdoms of Biology i.e. plant and animal kingdoms • Discuss the functioning of basic unit of life i.e. cell
• Enumerate Principles of Biological diversity
• Enumerate causes and consequences of biodiversity loss
• Explain established and emerging conservation actions and measures.

MODULE 2	**ENERGY, CLIMATE CHANGE, ECONOMICS AND ENVIRONMENT**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**18 HOURS**

• Enumerate the various forms of energy
• Describe the effect of the various forms of energy on the climate of the planet • Explain economics of energy use
• Enumerate the factors that determine the climate of our planet
• Explain the natural variability and variations in climate due to anthropogenic causes • Discuss the policies related to climate change
• Describe Procedures, tools and technique for Environmental Impact Assessment (EIA) • Explain the Concepts of carbon accounting & carbon footprint and greenhouse gas emission

MODULE 3	**POLICY AND GOVERNANCE**	**Assignment/ Quiz**	**Viva voce / Skills Assessment**	**9 HOURS**

• Explain the concept of Environmental Law and Governance
• Describe Formulation of Environmental Policy, and its Implementation and Evaluation • Explain Environmental Ethics and Justice
• Describe role of research in conservation science

Targeted Application & Tools that can be used
• Charts, posters, and videos on ecosystems, biodiversity, and pollution control relevant to community health.
• Case studies on environmental health hazards and their impact on occupational health and disability.
• Field visit reports/templates (water treatment plant, waste management facility) for applied learning.
• Audio-visual resources on sustainable development goals and environmental legislation in India.

Text Book(s)

1. Textbook of Environmental Studies for Undergraduate Courses – Erach Bharucha.

Reference Book(s)
1. Sustainable Environmental Science by Sahu DD. New India Publishing Agency. 2. Textbook of Environmental Sciences by Shivashanmugam P. New India Publishing Agency.

Project Work/ Assignments
1. Prepare a report on a field visit to a water treatment plant, sewage treatment facility, or waste management unit. 2. Write an assignment on the impact of environmental pollution on occupational and community health. 3. Prepare a presentation on a current environmental policy or sustainable development goal relevant to healthcare settings.
Online Resources (ebooks, notes, ppts, video lectures etc.)
NPTEL – Environmental Science (IIT Kharagpur): https://nptel.ac.in/courses/109105203 https://presiuniv.knimbus.com
Topics relevant to "SKILL DEVELOPMENT"
Field-based observation, environmental impact assessment, and report writing relevant to community and occupational health, attained through Skill Development via Participative Learning techniques as part of the assessment component mentioned in the course plan.