



INTEGRAL UNIVERSITY, LUCKNOW
INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PHYSIOTHERAPY

**BACHELOR OF PHYSIOTHERAPY
(BPT)
SYLLABUS**

YEAR/ SEMESTER: I/I



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT101	Title of the Course	HUMAN ANATOMY-I	L	T	P	C
Year	I	Semester	I	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human anatomy as needed for the study and practice of physiotherapy.						

Course Outcomes: After the successful course completion, learners will develop following attributes:

CO1	To understand the level of organization of the human body & its application in practice of physiotherapy.
CO2	To understand the muscles, bones and joints of the various regions & its application in practice of physiotherapy.
CO3	To understand the level of organization of the human different system of the body & its application in practice of physiotherapy.
CO4	To understand the topographical and functional anatomy of the upper limb & its application in practice of physiotherapy.
CO5	To understand the topographical and functional anatomy of the lower limbs and its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL ANATOMY	1. Introduction and subdivisions of Anatomy. 2. Anatomical nomenclature: Terms of Planes, Positions, Body parts and movements. 3. Basic tissues of the body: Definition, location and their function. 4. Structure and appendages of skin. 5. Superficial & deep fascia: Definition and functions, modifications of deep fascia.	8	CO1
2	OSTEOLOGY & ARTHROLOGY	1. Define skeleton, classification of skeleton. 2. Bone: properties, function, types, structure, blood supply, ossification. Applied anatomy of bone. 3. Cartilage: types, characteristic and function. Applied anatomy of cartilage. 4. Arthrology: Joint, structure, function and classification. 5. Basic feature and classification of synovial joint. Applied anatomy of joint.	8	CO2
3	SYSTEMIC ANATOMY (Brief outline)	1. Myology: Classification of muscles and its characteristics features. Properties and structure of skeletal muscle. 2. Classification of skeletal muscle according to shape and fascicular architecture, action of muscles. 3. Fascia structure and function Applied anatomy of muscle and fascia. 4. CVS: Arteries, Capillaries, Veins, Heart, Lymphatic system. 5. Respiratory system: Anatomy of upper and lower respiratory tract including lungs, pleura, nose larynx, trachea. 6. Neurology: Anatomical and functional division of nervous system.	8	CO3
4	SUPERIOR EXTREMITY	1. Outline the anatomical features, attachments, ossification and side determination of the bones of upper limb. 2. Muscles of Scapular region and back their origin, insertion action and nerve supply. Details of Deltoid, Trapezius and latissimus dorsi. 3. Fascia and Muscles of front and back of upper arm, fore arm and hand: origin, insertion, nerve supply and action. 4. Joints of superior extremity: Shoulder girdle, Shoulder joint, Elbow, Wrist and joints of hand. 5. Nerves and blood vessels of Superior Extremity and their position course, relations & distribution. 6. Boundaries and contents of axilla and cubital fossa, details of Brachial plexus. 7. Applied anatomy of all structures of Superior Extremity.	8	CO4
5	INFERIOR EXTREMITY	1. Outline the anatomical features, attachments, ossification and side determination of the bones of upper limb. 2. Fascia and Muscles of front, back and medial thigh: origin, insertion, nerve supply and action. 3. Fascia and Muscles of Gluteal region: origin, insertion, nerve supply and action. 4. Fascia and Muscles of anterior, posterior and lateral compartment of leg: origin, insertion, nerve supply and action. 5. Fascia and Muscles of soles of foot: origin, insertion, nerve supply and action. 6. Joints of inferior extremity: Hip girdle, Hip joint, Knee, Ankle and joints of foot. 7. Arches of foot and its significance. Applied anatomy of all structures of inferior Extremity.	8	CO5

Reference Books:

- 1 B.D. Chaurasia's, Human Anatomy-Volume 1, 2, 3 CBS Publishers & Distributors.
- 2 Inderbir Singh, Textbook of Anatomy with Colour Atlas-Vol. 1, 2, 3 Jaypee Brothers.
- 3 Snell-Clinical Anatomy by regions -Lippincott.
- 4 McMinn's Last's Anatomy-Regional and applied, Churchill Livingstone.
- 5 Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.
- 6 Williams & Warwick, Gray's Anatomy-Churchill Livingstone.
- 7 Basic Anatomy & Physiology by Smout and McDowell

e-Learning Source:

1. <https://youtu.be/XSRUFZZBH4>
2. https://youtu.be/06o_XNKwuOE
3. <https://youtu.be/4Sab-2E4ZDI>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	1	-	2	2	1	2	-	3
CO2	2	3	2	2	-	-	-	1	3	1	-	3	2	2	1	-	2
CO3	1	3	1	2	-	-	-	1	2	-	-	2	2	1	2	-	3
CO4	2	3	1	2	-	-	-	1	3	-	-	3	2	2	3	-	3
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	2	-	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT101	HUMAN ANATOMY-I	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√			√	√	



Integral University, Lucknow

Effective from Session: 2022-23

Course Code	PT102	Title of the Course	HUMAN PHYSIOLOGY-I	L	T	P	C
Year	I	Semester	I	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human physiology as needed for the study and practice of physiotherapy.						

Course Outcomes

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
CO1	To understand about general physiology& its application in practice of physiotherapy.			
CO2	To understand the nerve, muscle physiology& its application in practice of physiotherapy.			
CO3	To understand about basics of hematology& its application in practice of physiotherapy.			
CO4	To understand about respiratory system & its application in practice of physiotherapy.			
CO5	To understand about cardiovascular system and its application in practice of physiotherapy.			

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL PHYSIOLOGY	1. The cell & cell organelles – structure & functions. 2. Homeostasis, biofeedback mechanisms. 3. Transport across cell membrane. 4. Outline of membrane potential & action potential.	8	CO1
2	NERVE PHYSIOLOGY& MUSCLES PHYSIOLOGY	1. Structure properties and classification of nerve and types of nerve fiber. 2. Resting Membrane Potential Action potential, Propagation of nerve impulse, Degeneration and regeneration of nerve. 3. Muscle –classification, structure, sarcomere & properties of muscles, Myoneural junction & transmission. 4. Molecular basis of muscle contraction Motor unit, EMG. 5. 5. Difference between smooth, skeletal and cardiac, Applied physiology – Myasthenia gravis, Rigor mortis, Reaction of degeneration, Muscle disorders.	8	CO2
3	HAEMATOLOGY	1. Composition and functions of blood. 2. Red blood cell – morphology, formation, normal count, functions, physiological and pathological Variation. 3. White blood cell – morphology, classification, properties, functions, physiological & pathological variation. 4. Hemoglobin – basic chemistry, fate and functions, Immunity – definition, classification, concept of antigen & antibody. 5. Homeostasis – steps, role of platelets, Blood groups – A,B,O, AB and Rh system, Anemias, ESR & PCV. 6. Plasma proteins, Anticoagulants, Blood transfusion, Applied aspects of hematology.	8	CO3
4	RESPIRATION	1. General organization of respiratory system , Mechanics of respiration – Inspiratory and expiratory. 2. Muscles, intra-pleural pressure, lung & thoracic, Compliance, surfactant, lung volumes & capacities. 3. Diffusion of gases, Transport of respiratory gases, Regulation of respiration, Outline of hypoxia (types & physiological changes). 4. Acclimatization to high altitude, Dead space, Ventilation/ perfusion ratio. 5. Maximum breathing capacity & breathing reserve, pulmonary function tests, Artificial respiration. 6. Asphyxia, cyanosis (types and physiological changes).	8	CO4
5	CARDIOVASCULAR SYSTEM & EXERCISE PHYSIOLOGY	1. General organization and properties of cardiac muscle, Origin and conduction of cardiac impulse, cardiac cycle and heart sounds. 2. Normal heart rate, bradycardia, tachycardia, Normal ECG, Cardiac output- normal values, physiological variations, Factors affecting cardiac out- put and regulation. 3. Blood pressure – normal values, measurement, determinants, short term and long term regulation 4. Regional circulation- Coronary, muscular, cerebral, Functions of Lymph, Pressure and volume changes during cardiac cycle. 1. 5. Patho-physiology of circulatory shock and edema, Effects of exercise training, Hyper/Hypotension, Hemodynamic.	8	CO5

Reference Books:

1. Concise Medical Physiology by Chaudhuri, 4th Edition; New Central Book Agency.
2. Human Physiology, Sembulingam; 4th ed, Jaypee Brothers.
3. A Textbook of Practical Physiology, Ghai C L, Jaypee Brothers.
4. Practical physiology by Vijaya Joshi; Vora Medical Publication.
5. Human Physiology, Chatterjee. Vol: 1&2; 10th Edition; Medical & Allied Agency
6. Textbook of Medical Physiology by Guyton & Hall, 11th Edition; Elsevier Publication
7. Principles of Anatomy & Physiology, Tortora, 8th Edition; Harper & Row Publication
8. Textbook of Physiology : Ganong

e-Learning Source:

1. <https://youtu.be/JuhDx9hQAx8>
2. https://youtu.be/Ta_vWU5rjho
3. <https://youtu.be/h1qSFZ9aw94>
4. https://youtu.be/uYm4L_alVV0
5. <https://youtu.be/VWamhZ8vTL4>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	-	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	2	-	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	-	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	-	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT102	HUMAN PHYSIOLOGY-I	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23

Course Code	PT103	Title of the Course	BIOCHEMISTRY	L	T	P	C
Year	I	Semester	I	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in clinical as needed for the study and practice of physiotherapy.						

Course Outcomes: After the successful course completion, learners will develop following attributes:

CO1	To understand about carbohydrate & its application in therapeutic exercises and rehabilitation of sport injury.
CO2	To understand about protein & its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO3	To understand about lipid and nucleic acid & its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO4	To understand about vitamin and enzyme and hormones & its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO5	To understand about Nutrition and its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	CARBOHYDRATE	1. Chemistry, Definition, Classification with Examples and Functions of Glycolysis. 2. Chemistry, Definition, Classification with Examples and Functions of TCA cycle. 3. Glycogen metabolism, Glycogen storage disorder, Diabetes Mellitus and glycosuria. 4. Hormonal regulation of blood glucose, HbA1C and GTT.	8	CO1
2	PROTEIN	1. Chemistry-definition-function-classification of Amino acids-protein structure 2. Effect of temperature on proteins- denaturation-coagulation; isoelectric pH & its importance 3. Metabolism-Digestion and absorption Decarboxylation- De-amination 4. Trans methylation transamination & their importance-Detoxification of ammonia including urea cycle 5. Clinical biochemistry: Relevance of blood levels of, urea, & uric acid, Protein in urine.	8	CO2
3	LIPIDS AND NUCLEIC ACID	1. Chemistry-definition-classification-[including fatty acids with examples]-function 2. Metabolism-Digestion and absorption of lipids— β oxidation of saturated fatty acids and its energetics and regulation of fat metabolism in adipose tissue Ketone bodies formation & utilization—cholesterol and its importance[no biosynthesis needed]- classification, sources & function of lipoproteins lipoproteinemia atherosclerosis 3. Clinical Biochemistry - Lipid profile-Tri - glyceride, cholesterol/HDL/LDL/VLDL etc, Liver function test & Renal function test. 4. DNA/RNA definition-structure and function types-Genetic code-catabolism of purine -gout.	8	CO3
4	VITAMINS & ENZYMES & HORMONES	1. Definition, classification, functions dietary sources, daily requirement & Deficiency disorders. 2. Definition, Classification of enzymes, properties, mechanism of action, Clinical importance & regulation of activity 3. Introduction Definition & Classification of hormones. 4. Mechanism of hormone action, Effects of hormones on various metabolism & hormonal disorders.	8	CO4
5	NUTRITION & SPECIAL TOPICS	1. Introduction of Nutrition, Nutrients of their role in human 2. Nutritional requirements, Balance diet, Nutritional disorder, SDA (special dynamic action) 3. Respiratory quotient (RQ) & Basal Metabolism rate (BMR) 4. Water electrolyte balance & acid base balance.	8	CO5

Reference Books:

1. Fundamentals of Biochemistry-by Dr. Deb Jyoti Das,
2. Essentials of Bio-chemistry by U. Satyanarayan, 1st Edition, Books and Allied Publications.
3. Textbook of Biochemistry –Chatterje and Shinde
4. Text book of Medical Bio-Chemistry – Dr. M.N.Chatterjee, 5th Edition, Jaypee Publication.
5. Fundamental of Bio-Chemistry –Dr. A. C. Deb, 5th Edition, Central Publication.
6. Bio-Chemistry introduction – Meke, 2nd Edition, McGraw-Hill Publication.

e-Learning Source:

1. <https://youtu.be/t5DvF5OVr1Y>
2. <https://youtu.be/gggC9vctvBQ>
3. <https://youtu.be/ufvZ8bYtyO8>
4. <https://youtu.be/Q6R4o-oECxs>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	2	1	-	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	3	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	2	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT103	BIOCHEMISTRY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	PT104	Title of the Course	BASICS OF ELECTROTHERAPY	L	T	P	C
Year	I	Semester	I	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in basic of electrotherapy as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand basic principles of physics, Laws of Electricity, Electro-magnetic spectrum & its application in practice of physiotherapy.
CO2	To understand basic principles of electric current & its application in practice of physiotherapy.
CO3	To understand basic of electrical supply & its application in practice of physiotherapy.
CO4	To understand basic of various agents & its application in practice of physiotherapy.
CO5	To understand circuit diagrams and basic knowledge of equipment's & its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	PHYSICAL PRINCIPLES	1. Structure and properties of matter–solids, liquids and gasses, adhesion, surface tension, viscosity, density and elasticity. 2. Structure of atom, molecules, elements and compounds, Electron therapy static and current electricity. 3. Conductors, Insulators, Potential difference, Resistance and intensity. 4. Ohm's Law – Its application to AC & DC currents. Rectifying Devices Thermionic Valves, Semiconductors, Transistors, Amplifiers, Transducer and Oscillator circuits. 5. Capacitance condensers and in DC and AC circuits. Display devices and indicators– analogue and digital.	8	CO1
2	EFFECTS OF CURRENT ELECTRICITY	1. Chemical effects- ions and electrolytes, ionization, Production of an EMF by chemical actions. 2. Magnetic effects, Molecular theory of magnetism, Magnetic fields Electromagnetic Induction. 3. Mili Ammeter and voltmeter transformers and choke coil. 4. Electromagnetic spectrum.	8	CO2
3	ELECTRICAL SUPPLY	1. Brief outline of main supply of electric current. 2. Dangers- short circuit, electric shocks. 3. Precaution – safety devices, earthing fuses etc. 4. First aid and initial management of electric shock.	8	CO3
4	VARIOUS AGENTS	1. Electro physical Agents. 2. Thermal agents, Superficial and deep heat. 3. Cryotherapy, Physical Principles of cold, 4. Electro-magnetic Radiation Physical Principles and their Relevance to Physiotherapy. 5. Electric Currents: Physical Principles and their Relevance to Physiotherapy Practice.	8	CO4
5	CIRCUIT DIAGRAMS AND BASIC KNOWLEDGE OF EQUIPMENTS	1. Shortwave Diathermy (SWD) 2. Ultrasound (US) 3. Microwave Diathermy (MWD) 4. "Light Amplification by Stimulated Emission of Radiation" (LASER)	8	CO5

Reference Books:																	
1. Clayton's Electrotherapy (theory and practice) – Clayton's AIBS publications.																	
2. Electrotherapy Explained by John Low and Reed, 3rd edition, B & H Publications.																	
3. Practical in Electrotherapy by Joseph Kahn, Churchill livingstone.																	
4. Electrotherapy: Evidence Based Practice by Kitchen Sheild, 11th ed.																	
5. Physical Agents in Rehabilitation: From Research to Practice by Cameron.																	
e-Learning Source:																	
1. https://youtu.be/P_RQuRzp7SE																	
2. https://youtu.be/G7UccfwRvwY																	
3. https://youtu.be/dNnTubgY2gs																	
4. https://youtu.be/7OkYTUZelpw																	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	-	-	2	3	1	2	3	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	3	-	1	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	2	2	1	2	2
CO4	1	3	1	2	-	-	-	1	3	1	-	3	2	3	1	3	2
CO5	1	3	1	2	-	-	-	1	2	2	-	2	3	1	2	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation
Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT104	BASICS OF ELECTROTHERAPY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	CS107	Title of the Course	COMPUTER APPLICATION IN PHYSIOTHERAPY	L	T	P	C
Year	I	Semester	I	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The main objective of the course is to provide fundamental knowledge of computers, windows, MS word, and Power point						

Course Outcomes	
CO1	After studying this course the students will know –The fundamentals of computers and computer systems.
CO2	After studying this course the students will know –Understanding the basic concepts of DOS commands.
CO3	After studying this course the students will know –A Basic understanding of the windows.
CO4	After studying this course the students will know –Understanding MS Word.
CO5	After studying this course the students will know –Knowledge, understanding, and basic concepts of presentation software.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	COMPUTER FUNDAMENTALS	What is a computer? Components of a computer system. Classification of computers. Types of computers. A brief history of the evolution of computers and generation of computers. Computer hardware and software. Input/ Output devices.	6	CO1
2	DOS	Elementary knowledge of DOS commands DIR, CLS, DATE, TIME, MD, CD, RD, RENAM,DEL, BACKUP, RESTORE, COPY, SCANDISK, CHKDSK.	5	CO2
3	WINDOWS	Difference between windows and DOS. Basic Features - Date, Time, Time Zone, Display, Screen Saver, Fonts, Mouse, and mouse pointers. Using accessories such as a calculator, paintbrush, CD player, etc. Use of Windows Explorer for moving and copying files. Introduction to MS Office and its integrated nature.	6	CO3
4	MS-WORD	Starting Word, new documents, entering text, changing text, aligning, underlining, and justifying text. Use of tabs. Tables - creation, adding rows and columns, splitting, and combining cells, Borders. Saving, closing, and operating documents. Adding headers and footers. Print preview, and print a document. Mail merge: creating main document and data source. Adding and removing fields from the data source.	6	CO4
5	POWERPOINT (PRESENTATION SOFTWARE)	The basic concept of presentation software. Standard, Formatting, and drawing toolbars in PowerPoint and their use. Creating and opening a presentation. Creating, deleting, opening, and copying slides. Closing and saving a presentation. Use of slide sorter, adding header/footer. Use of master slides and color box. Use of animation features. Inserting pictures, resizing pictures. Inserting organization chart. Use of auto content wizard.	6	CO5

Reference Books:

1. A First Course in Computers: Saxena, Vikas Publishing House
2. Fundamentals of Computer science - M. Afshar Alam
3. Fundamental of Information Technology by D. S. Yadav- New age International

e-Learning Source:

1. https://youtu.be/ME_F9yypzsw
2. <https://youtu.be/FZqKyhfD7-E>
3. <https://youtu.be/S4Zio60b8P8>
4. https://youtu.be/eEo_aacpwCw

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	-	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	2	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	2	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
CS107	COMPUTER APPLICATION IN PHYSIOTHERAPY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4, 11
				√					



Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	LN101	Title of the Course	BASICS OF PROFESSIONAL COMMUNICATION	L	T	P	C
Year	I	Semester	I	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The major objective of the course is to develop professional communication skills among the students.						

Course Outcomes	
CO1	After studying this course the students will know –The meaning & importance of professional communication as well as effective professional communication.
CO2	After studying this course the students will know –Understanding the language through literature like essays and short stories.
CO3	After studying this course the students will know –Basic concepts and knowledge of vocabulary.
CO4	After studying this course the students will know –Understanding and practice of basic grammar.
CO5	After studying this course the students will know –Knowledge, understanding, and skills in report writing & business letter writing.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	PROFESSIONAL COMMUNICATION	a. Professional Communication: Meaning & importance b. Essentials of Effective Communication c. Barriers to Effective Communication	6	CO1
2	LANGUAGE THROUGH LITERATURE	a. Essays: “The Effect of the Scientific Temper on Man” by Bertrand Russell “The Aims of Science and Humanities” by Moody E. Prior b. Short Stories: “The Meeting Pool” by Ruskin Bond “The Portrait of a Lady” by Khushwant Singh	5	CO2
3	BASIC VOCABULARY	a. Euphemism, One-word Substitution, Synonyms, Antonyms b. Homophones, Idioms and Phrases, Common mistakes c. Confusable words and expressions	6	CO3
4	BASIC GRAMMAR	a. Articles, Prepositions, Tenses b. Concord (Subject-Verb agreement), Verbs: kinds & uses c. Degrees of Comparison	6	CO4
5	BASIC COMPOSITION	a. Report writing: What is a report? Kinds and objectives of reports, writing reports b. Business Letter Writing: Introduction to business letters, types of business letters, Layout of business letters, Letter of Enquiry / Complaint	6	CO5

Reference Books:

1. Lata, Pushp& Kumar, Sanjay. Communication Skills, Oxford University Press-2012
2. Quintanilla, Kelly M. & Wahl, Shawn T. Business and Professional Communication, Sage Publications India Pvt. Ltd-2011
3. Juneja, Om P & Mujumdar, Aarati. Business Communication: Techniques and Methods, Orient Black Swan-2010
4. Arora, V. N. & Chandra, Lakshmi. Improve Your Writing: From Comprehensive to Effective Writing, Oxford University Press-2010 (For the prescribed essays- “The Effect of the Scientific Temper on Man” by Bertrand Russell & “The Aims of Science and Humanities” by Moody E. Prior)

e-Learning Source:

1. https://www.youtube.com/watch?v=jQx_jZxdCbs
2. <https://www.sciencedirect.com/topics/psychology/linguistictheory#:~:text=Linguistic%20Theory%20was%20formed%20by,to%20all%20typically%20developing%20humans>
3. <https://linguistics.ucla.edu/undergraduate/what-is-linguistics/>
4. <https://www.thoughtco.com/noam-chomsky-4769113>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	-	2	-	2	-	-	-	2	-	-	-	-	-
CO2	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-
CO3	-	-	-	-	-	2	-	1	-	1	-	2	-	-	-	-	-
CO4	-	-	-	-	-	2	2	-	-	-	-	2	-	-	-	-	-
CO5	-	-	-	-	-	2	1	1	-	-	1	2	-	-	-	1	1

2- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
LN101	BASICS OF PROFESSIONAL COMMUNICATION	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4, 11



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT105	Title of the Course	HUMAN ANATOMY-I LAB	L	T	P	C
Year	I	Semester	I	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human anatomy as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To identify anatomical aspect of the level of organization of the human body practically & its application in practice of physiotherapy.
CO2	To identify anatomical and functional aspect of muscles, bones and joints of the various regions practically & its application in practice of physiotherapy.
CO3	To identify and practically apply various terms related to human different system of the body & its application in practice of physiotherapy.
CO4	To identify anatomical and functional aspect of neuromusculoskeletal structure of superior extremity & its application in practice of physiotherapy.
CO5	To identify anatomical and functional aspect of neuromusculoskeletal structure of inferior extremity & its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL ANATOMY	1. Practical demonstration of human body on model with using different anatomical terms. 2. Demonstration of Anatomical position and movement of joint with anatomical terms. 3. Practical demonstration of various type of tissue and there location on human body. 4. Practical demonstration of skin and fascia.	4	CO1
2	OSTEOLOGY & ARTHROLOGY	1. Practical demonstration and classification of axial and appendicular skeleton on model. Identification and orientation of bones and joints in an articulated skeleton. 2. Demonstration of types of bone on models. 3. Practical demonstration of various type of cartilage on models.. 4. Practical demonstration of various type of joint and there function on human models. 5. Practical demonstration of movement of various type of synovial joint on human body.	4	CO2
3	SYSTEMIC ANATOMY	1. Demonstrate different terms related to skeletal muscles on human body. 2. Demonstrate different shape of skeletal muscle and action of different group of muscle on human body. 3. Demonstrate location of fascia and fascial line on human body.	4	CO3
4	SYSTEMIC ANATOMY	1. Practical demonstration and identification, side determination, parts, and different bony. land marks and its attachment on non-articular bones of superior extremity. 2. Visual estimation and palpation of different vascular and Neuromusculoskeletal structure of superior extremity on human body. 3. Practical demonstration of action of different muscle of superior extremity. 4. Visual estimation and palpation of the joint line and structure around the joints. 5. Demonstration of Radio imaging anatomy of superior extremity.	4	CO4
5	INFERIOR EXTREMITY	1. Practical demonstration and identification, side determination, parts, and different bony. land marks and its attachment on non-articular bones of inferior extremity. 2. Visual estimation and palpation of different vascular and neuro musculoskeletal structure. of inferior extremity on human body. 3. Practical demonstration of action of different muscle of inferior extremity. 4. Visual estimation and palpation of the joint line and structure around the inferior extremity joints. 5. Demonstration of Radio imaging anatomy of inferior extremity.	4	CO5

Reference Books:	
1	B.D. Chaurasia's, Human Anatomy-Volume 1, 2, 3 CBS Publishers & Distributors.
2	Inderbir Singh, Textbook of Anatomy with Colour Atlas-Vol. 1, 2, 3 Jaypee Brothers.
3	Snell-Clinical Anatomy by regions -Lippincott.
4	McMinn's Last's Anatomy-Regional and applied, Churchill Livingstone.
5	Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.
6	Williams & Warwick, Gray's Anatomy-Churchill Livingstone.
7	Extremities by Quining Wasb
8	Basic Anatomy & Physiology by Smout and McDowell
e-Learning Source:	
4.	https://youtu.be/X5RUFXZZBH4
5.	https://youtu.be/06o_XNKwuOE
6.	https://youtu.be/4Sab-2E4ZDI

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3
CO2	2	3	2	2	-	-	-	1	3	1	-	3	-	2	1	-	2
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	2	-	3
CO4	2	3	1	2	-	-	-	1	3	-	-	3	-	2	3	-	3
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	2	-	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT105	HUMAN ANATOMY-I LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	3,4



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT106	Title of the Course	HUMAN PHYSIOLOGY-I LAB	L	T	P	C
Year	I	Semester	I	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate the practical knowledge in human anatomy as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand about general physiology& its application in practice of physiotherapy.
CO2	To understand the nerve, muscle physiology& its application in practice of physiotherapy.
CO3	To understand about basics of hematology& its application in practice of physiotherapy.
CO4	To understand about respiratory system & its application in practice of physiotherapy.
CO5	To understand about cardiovascular system and its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL PHYSIOLOGY	1. Learning through chart and models	4	CO1
2	NERVE PHYSIOLOGY & MUSCLES PHYSIOLOGY	1. NCV 2. Skeletal muscle-properties-pre / after Load-Fatigue-Starling's law 3. Cardiac muscle-properties-effect of Ach & Adrenaline 4. Ergography	4	CO2
3	BLOODS	1. Hb, RBC 2. WBC, Blood Groups 3. BT, CT	4	CO3
4	RESPIRATION	1. Spirometry 2. Lungs volume 3. Timed vital capacity 4. Respiratory sounds	4	CO4
5	CARDIOVASCULAR SYSTEM & EXERCISE PHYSIOLOGY	1. Blood Pressure – Effects of change in posture & exercise 2. Examination of Pulse 3. Heart sound 4. ECG	4	CO5

Reference Books:

1. Concise Medical Physiology by Chaudhuri, 4th Edition; New Central Book Agency.
2. Human Physiology, Sembulingam; 4th ed, Jaypee Brothers.
3. A Textbook of Practical Physiology, Ghai C L, Jaypee Brothers.
4. Practical physiology by Vijaya Joshi; Vora Medical Publication.
5. Human Physiology, Chatterjee. Vol: 1&2; 10th Edition; Medical & Allied Agency
6. Textbook of Medical Physiology by Guyton & Hall, 11th Edition; Elsevier Publication
7. Samson Wright's Applied Physiology 13th ed, Keele CA, Neil E & Joels N, Oxford Medical Pub.
8. Principles of Anatomy & Physiology, Tortora, 8th Edition; Harper & Row Publication.
9. Textbook of Physiology : Ganong

e-Learning Source:

1. <https://youtu.be/X5RUFXXZBH4>
2. https://youtu.be/06o_XNKwuOE
3. <https://youtu.be/4Sab-2E4ZDI>
4. https://youtu.be/uYm4l_alVV0
5. <https://youtu.be/VWamhZ8vTL4>

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO2	1	3	1	3	-	-	-	1	3	-	-	3	-	2	-	2	-
CO3	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	-	1	-
CO5	1	3	1	2	-	-	-	1	2	-	-	2	-	1	-	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs									
Course Code	Course Title	Attributes							SDGs No.
PT106	HUMAN PHYSIOLOGY-I LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23

Course Code	PT107	Title of the Course	BIOCHEMISTRY LAB	L	T	P	C
Year	I	Semester	I	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in clinical as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand about carbohydrate& its application in therapeutic exercises and rehabilitation of sport injury.
CO2	To understand about protein& its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO3	To understand about lipid and nucleic acid& its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO4	To understand about vitamin and enzyme and hormones & its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.
CO5	To understand about Nutrition and its application in practice of physiotherapy during rehab of various disease, trauma and fitness training.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	CARBOHYDRATE	Practical aspect of followings: 1. Glycolysis. 2. TCA cycle. 3. Hormonal regulation of blood glucose, HbA1C and GTT.	4	CO1
2	PROTEIN	Practical aspect of followings: 1. Amino acids-protein structure 2. Effect of temperature on proteins- denaturation-coagulation; isoelectric pH & its importance 3. Decarboxylation- De-amination 4. Trans methylation transamination & their importance-Detoxification of ammonia including urea cycle. 5. Clinical biochemistry: Relevance of blood levels of, urea, & uric acid, Protein in urine.	4	CO2
3	LIPIDS AND NUCLEIC ACID	Practical aspect of followings: 1. Fatty acids 2. lipids— β oxidation of saturated fatty acids and its energetics and regulation of fat metabolism in adipose tissue Ketone bodies formation & utilization., cholesterol/HDL/LDL/VLDL etc, Liver function test & Renal function test. 3. Genetic code-catabolism of purine -gout.	4	CO3
4	VITAMINS & ENZYMES & HORMONES	Practical aspect of followings: 1. Enzymes, properties, mechanism of action, Clinical importance & regulation of activity 2. Hormones. 3. Mechanism of hormone action, Effects of hormones on various metabolism & hormonal disorders.	4	CO4
5	NUTRITION & SPECIAL TOPICS	Practical aspect of followings: 1. Balance diet, Nutritional disorder, SDA (special dynamic action) 3. Respiratory quotient (RQ) & Basal Metabolism rate (BMR) 4. Water electrolyte balance & acid base balance.	4	CO5

Reference Books:

1. Fundamentals of Biochemistry-by Dr. Deb Jyoti Das,
2. Essentials of Bio-chemistry by U. Satyanarayan, 1st Edition, Books and Allied Publications.
3. Textbook of Biochemistry –Chatterje and Shinde
4. Text book of Medical Bio-Chemistry – Dr. M.N. Chatterjee, 5th Edition, Jaypee Publication.
5. Fundamental of Bio-Chemistry –Dr. A. C .Deb, 5th Edition, Central Publication.

e-Learning Source:

1. <https://youtu.be/t5DvF5OVr1Y>
2. <https://youtu.be/gggC9vctvBQ>
3. <https://youtu.be/ufvZ8bYtyO8>
4. <https://youtu.be/Q6R4o-oECxs>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	2	-	-	-	1	2	1	-	2	-	2	2	1	-
CO2	1	3	1	3	-	-	-	2	3	-	-	3	-	1	1	1	-
CO3	1	3	1	2	-	-	-	1	2	2	-	2	-	1	1	1	-
CO4	1	3	1	2	-	-	-	1	3	-	-	3	-	1	2	1	-
CO5	1	3	1	2	-	-	-	1	2	1	-	2	-	1	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT107	BIOCHEMISTRY LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	PT108	Title of the Course	BASICS OF ELECTROTHERAPY	L	T	P	C
Year	I	Semester	I	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate the practical knowledge in human anatomy as needed for the study and practice of phvsiotherapy.						

Course Outcomes	
CO1	Physical Principles: To understand basic principles of physics, Laws of Electricity, Electro-magnetic spectrum & its application in practice of physiotherapy.
CO2	Effects of Current Electricity: To understand basic principles of electric current& its application in practice of physiotherapy.
CO3	Electrical Supply: To understand basic of electrical supply& its application in practice of physiotherapy.
CO4	Various Agents: To understand basic of various agents& its application in practice of physiotherapy.
CO5	Circuit Diagrams and Basic Knowledge of Equipment's: To understand circuit diagrams and basic knowledge of equipment's& its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	PHYSICAL PRINCIPLES	Demonstration of followings: 1. Diode and Triode valves 1. Transistors, Ammeter 2. Voltmeter, Rheostat 3. Resistance Box, Transformer 4. Stimulator	4	CO1
2	EFFECTS OF CURRENT ELECTRICITY	Demonstration of followings: 1. AC current 2. DC Current 3. Faradic Current 4. Galvanic current 5. Micro current 6. Russian currents	4	CO2
3	ELECTRICAL SUPPLY	Demonstration of followings: 1. Main supply 2. Clinical observation of equipment placement.	4	CO3
4	VARIOUS AGENTS:	Demonstration of followings: 1. Electrophysical agents 2. Clinical observation of equipment placement	4	CO4
5	CIRCUIT DIAGRAMS AND BASIC KNOWLEDGE OF EQUIPMENTS	Demonstration of followings: 1. Short Wave Diathermy 2. Micro Wave Diathermy 3. LASER 4. Ultrasound 5. Clinical observation of equipment placement	4	CO5

Reference Books:

1. Clayton's Electrotherapy (theory and practice) – Clayton's AIBS publications.
2. Electrotherapy Explained by John Low and Reed, 3rd edition, B & H Publications.
3. Practical in Electrotherapy by Joseph Kahn, Churchill Livingstone.
4. Electrotherapy: Evidence Based Practice by Kitchen Sheild, 11th ed.
5. Physical Agents in Rehabilitation: From Research to Practice by Cameron.

e-Learning Source:

- 1 https://youtu.be/P_RQuRzp7SE
- 2 <https://youtu.be/G7UccfwRvwY>
- 3 <https://youtu.be/dNnTubgY2gs>
- 4 <https://youtu.be/7OkYTUZelpw>
- 5 <https://youtu.be/4WX0cp0fn5c>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	2	2	-	-	-	1	2	-	-	2	3	3	3	3	-
CO2	1	3	1	2	-	-	-	2	3	-	-	3	3	3	2	2	-
CO3	1	3	2	1	-	-	-	1	2	-	-	2	2	2	1	2	-
CO4	1	3	1	2	-	-	-	1	3	2	-	3	2	3	1	3	-
CO5	1	3	1	2	-	-	-	1	2	2	-	2	3	1	2	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT108	BASICS OF ELECTROTHERAPY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



INTEGRAL UNIVERSITY, LUCKNOW
INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PHYSIOTHERAPY

**BACHELOR OF PHYSIOTHERAPY
(BPT)**

**SYLLABUS
YEAR/ SEMESTER: I/II**



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT109	Title of the Course	HUMAN ANATOMY-II	L	T	P	C
Year	I	Semester	II	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To understand the location, structural configuration of the thoracic region, abdomen and brain & its application in practice of physiotherapy.						

Course Outcomes	
CO1	To understand about the structure of thoracic wall& its application in practice of physiotherapy.
CO2	To understand about the Viscera of thoracic cavity& its application in practice of physiotherapy.
CO3	To understand about the Abdomen and Pelvis& its application in practice of physiotherapy.
CO4	To understand about the Head and Neck & its application in practice of physiotherapy.
CO5	To understand about the Neuro Anatomy and its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	THORACIC WALL	1 Skeleton of thoracic wall, Thoracic outlets and inlets 2 Joints of thoracic wall, Movements of thoracic wall 3 Muscles of thoracic wall, Fascia of Thoracic wall 4 Nerves of Thoracic wall, Vasculature of Thoracic wall, Breast 5 Relevant applied anatomy	8	CO1
2	VISCERA OF THORACIC CAVITY	1 Pleura, Lungs, and Tracheobronchial Tree 2 Overview of mediastinum, superior mediastinum, Posterior mediastinum, anterior mediastinum 3 Diaphragm: Attachments, action and nerve supply of diaphragm. 4 Layer of pericardium, Introduction to heart, External feature and blood supply of heart 5 Location and branches of ascending arch of aorta and descending aorta, Location and tributaries of Brachiocephalic veins and superior vena cava. Azygos system of veins	8	CO2
3	ABDOMEN & PELVIS	1 Introduction to abdomen, its regions and quadrants, Abdominal wall, layers of abdominal wall 2 Muscles of anterior and posterior abdominal wall their origin insertion, action and nerve supply, Rectus sheath. 3 Overview of abdominal viscera and digestive tract. 4 Components of urinary system, their location and orientation in abdomino-pelvic cavity. Brief account of kidneys. 5 Reproductive system: Components of male & female reproductive system and their location. 6 Relevant clinical anatomy	8	CO3
4	HEAD AND NECK	1 Overview of different aspect of cranium 2 Scalp and muscles of facial expression, Layers of scalp, nerve and blood supply 3 Muscles of mastication, their origin, insertion action and nerve supply 4 Layers of deep cervical fascia, extent and attachment of investing layer, Sternocleidomastoid, digastric and strap muscles of neck. 5 Triangles of neck: Subdivision of anterior and posterior triangle and their contents. 6 Common carotid & external carotid artery & Internal Jugular vein. 7 Joints: Details of temporomandibular joint, atlantoaxial and atlanto-occipital joint.	8	CO4
5	NEURO-ANATOMY	1 General organization of C.N.S and brief outline of CNS structures, Blood supply of brain 2 Cranial nerves -Peripheral nervous system,Autonomic Nervous System -Sensory system 3 Neuro-muscular junction,Neuro-muscular integration 4 Important ascending and descending tracts. Cranial nerves 5 Brief account of visual and auditory path way 6 CSF – Formation, absorption and circulation in the ventricular system.	8	CO5

Reference Books:

1	B.D. Chaurasia's, Human Anatomy-Volume 1, 2, 3 CBS Publishers & Distributors.
2	Inderbir Singh, Textbook of Anatomy with Colour Atlas-Vol. 1, 2, 3 Jaypee Brothers.
3	Snell-Clinical Anatomy by regions -Lippincott.
4	McMinn's Last's Anatomy-Regional and applied, Churchill Livingstone.
5	Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.
6	Williams & Warwick, Gray's Anatomy-Churchill Livingstone.
7	Extremities by Quining Wasb
8	Basic Anatomy & Physiology by Smout and McDowell

e-Learning Source:

1	https://youtu.be/X5RUFZZBH4
2	https://youtu.be/06o_XNKwuOE
3	https://youtu.be/4Sab-2E4ZDI

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO2	1	3	2	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO3	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1
CO4	2	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO5	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT109	HUMAN ANATOMY-II	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT110	Title of the Course	HUMAN PHYSIOLOGY-II	L	T	P	C
Year	I	Semester	II	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human physiology as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand about excretory function& its application in practice of physiotherapy.
CO2	To understand about gastro intestinal tract& its application in practice of physiotherapy.
CO3	To understand about Nervous system and special senses& its application in practice of physiotherapy.
CO4	To understand about Endocrine system & its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	EXCRETORY FUNCTION	1 General introduction, structure and functions of kidney , Formation of urine- filtration, re-absorption and secretion 2 Physiology of micturition, Renal circulation, Plasma clearance test 3 Neurogenic bladder, Automatic bladder 4 Relevant applied physiology	8	CO1
2	GASTRO INTESTINALTRACT (GIT)	1 Motility nervous control, blood circulation 2 Composition, secretary function of saliva gastric juices 3 HCL secretion, pancreas gall bladder and small intestine 4 Digestion and absorption of food, Defecation and swallowing reflex 5 Relevant applied physiology	8	CO2
3	NERVOUS SYSTEM & SPECIALSENSES	1 Receptor physiology, synaptic structure, reflexes, physiology of touch, pain, temperature and Proprioception, labyrinth. 2 Function of sensory and motor cortex, ascending and descending tracts, motor function of spinal cord and reflexes, spinal cord transaction and spinal shock 3 Hypothalamus, thalamus, basal ganglia, cerebellum, limbic system, RAI system, learning memory and condition reflex 4 Posture, equilibrium and sleep, cerebral blood flow, CSF and brain metabolism 5 Eye, Ear, Olfaction, Taste. 6 Relevant applied physiology	8	CO3
4	ENDOCRINE SYSTEM	1 General organization of endocrine glands 2 Releasing hormones from hypothalamus , Anterior & Posterior pituitary hormones – physiological actions, regulation & disorders 3 Thyroid Hormones,Parathyroid Hormones – physiological actions, regulation & disorders 4 Pancreatic hormones, Adrenal cortex & medulla– physiological actions, regulation& disorders 5 Mechanism of hormone action, Relevant applied physiology	8	CO4
5	REPRODUCTIVE SYSTEM	1 Female menstrual cycle and related hormone puberty and menopause 2 Function of oestrogens, progesterone and testosterone 3 Male spermatogenesis and function of testosterone, 4 Sucking reflex- pregnancy and lactation. 5 Relevant applied physiology	8	CO5

Reference Books:																	
1. Concise Medical Physiology by Chaudhuri, 4th Edition; New Central Book Agency.																	
2. Human Physiology, Sembulingam; 4th ed, Jaypee Brothers.																	
3. A Textbook of Practical Physiology, Ghai C L, Jaypee Brothers.																	
4. Practical physiology by Vijaya Joshi; Vora Medical Publication.																	
5. Human Physiology, Chatterjee. Vol: 1&2; 10th Edition; Medical & Allied Agency																	
6. Textbook of Medical Physiology by Guyton & Hall, 11th Edition; Elsevier Publication																	
7. Samson Wright's Applied Physiology 13th ed, Keele CA, Neil E &Joels N, Oxford Medical Pub.																	
8. Principles of Anatomy & Physiology, Tortora, 8th Edition; Harper & Row Publication.																	
9. Textbook of Physiology : Ganong																	
e-Learning Source:																	
1. https://youtu.be/_jagVY0XMVk																	
2. https://youtu.be/cXPuW6ZwcFE																	
3. https://youtu.be/VAEmxt78bBI																	
4. https://youtu.be/vLdNX5TeIXo																	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT110	HUMAN PHYSIOLOGY- II	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT111	Title of the Course	BASIC OF EXERCISE THERAPY	L	T	P	C
Year	I	Semester	II	3	1	0	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to learn, analyze and explore the knowledge of basics of exercise therapy.						

Course Outcomes	
CO1	To understand about Mechanical principles of exercise& its application in practice of physiotherapy.
CO2	To understand about Mechanics of movement & its application in practice of physiotherapy.
CO3	To understand about Simple Mechanics& its application in practice of physiotherapy.
CO4	To understand about Fundamental and Derived Position& its application in practice of physiotherapy.
CO5	To understand about Introduction to movements & its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	MECHANICAL PRINCIPLES OF EXERCISE	1. Force and composition of force and their alteration and application in human body 2. Gravity, COG, LOG, and their alteration and application in human body 3. Base of support, Equilibrium and their alteration and application in human body 4. Fixation stabilization and their alteration and application in human body	8	CO1
2	MECHANICS OF MOVEMENT	1. Axis and plane and its application in physiotherapy 2. Power, Work, Energy and its application in physiotherapy 3. Velocity, Motion and its law its application in physiotherapy 4. Momentum, Inertia, Friction and its application in physiotherapy	8	CO2
3	SIMPLE MECHANICS	1. Levers and their Functions and classification and application in human body 2. Pulleys and their Functions and classification, and application in human body 3. Inclined Planes and their Functions, classification & theirs clinical relevance. 4. Stress, Strain, Hooke's Law Springs and their properties & theirs clinical relevance.	8	CO3
4	FUNDAMENTAL AND DERIVED POSITION	1. Fundamental position of human body effects, muscles uses and their importance 2. Role of fundamental position in physiotherapy practice 3. Derived position of human body, effects, muscles uses and their importance's. 4. Role of Derived position in physiotherapy practice	8	CO4
5	INTRODUCTION TO MOVEMENTS	1. Active range of motion, Passive range of motion 2. Active assisted range of motion, Resisted range of motion, 3. Types of muscle contraction and their clinical relevance 4. Nervous control of movement	8	CO5

Reference Books:																	
1. Practical Exercise Therapy- Hollis and Cook																	
2. Gardiner, Principle of Exercise Therapy, C. B. S. Delhi.																	
3. Norkins & White F.A. Davis, Measurement of Joint Motion: A Guide to Goniometry.																	
4. Kisner and Colby. F.A. Davis, Therapeutic Exercises Foundations and Techniques																	
5. Margaret Hollis, Massage for therapist: Margaret Hollis																	

e-Learning Source:																	
1. https://youtu.be/X5RUFXXZBH4																	
2. https://youtu.be/06o_XNKwuOE																	
3. https://youtu.be/4Sab-2E4ZDI																	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
CO2	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
CO3	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
CO4	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
CO5	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT111	BASIC OF EXERCISE THERAPY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT112	Title of the Course	GENERAL PSYCHOLOGY AND SOCIOLOGY	L	T	P	C
Year	I	Semester	II	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in clinical as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand about psychology & its application in physiotherapy practice.
CO2	To understand about arousal, emotion & awareness, perception & its application in physiotherapy practice.
CO3	To understand about testing, personality and behaviour, attitude & its application in physiotherapy practice.
CO4	To understand about basics of sociology and social factors in health & disease & its application in physiotherapy practice.
CO5	To understand about social group, family, culture and health, social problems & its application in physiotherapy practice.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	BASICS OF PSYCHOLOGY	1. Beginning the study of psychology & Subfields and methods of psychology, Genetics and behaviour, Nature and nurture 2. Development of behavior and principle of learning 3. Thinking and problem solving 4. Drives and motivation	6	CO1
2	AROUSAL, EMOTION & AWARENESS, PERCEPTION	1. Psychological basis of arousal & emotion Emotional feelings & Situations 2. Objective Perception, Perceptual Constancies 3. Depth Perception, Influences on Perception	6	CO2
3	TESTING, PERSONALITY AND BEHAVIOR, ATTITUDE	1. What is Personality, Theories of Personality, Shaping of Personality, Coping Behaviour 2. The Nature of Attitudes, Prejudice & Discrimination, Development of Attitudes, Social Movements 3. Behavior Disorders, Personality disorders 4. Uses of Psychological Tests, Intelligence & Aptitude Tests, Personality tests	6	CO3
4	BASICS OF SOCIOLOGY AND SOCIAL FACTORS IN HEALTH & DISEASE	1. Definition and scope of sociology 2. Importance of sociology to health care professionals. 3. The meaning and nature of socialization 4. The role of social factors in health and illness	6	CO4
5	SOCIAL GROUP, FAMILY, CULTURE AND HEALTH, SOCIAL PROBLEMS	1. Concept of culture, Culture and behaviour, Culture and Health Disorders 2. Population explosion, Poverty and unemployment 3. Beggary, Juvenile delinquency 4. Alcoholism, Problems of women in employment	6	CO5

Reference Books:

1. Fundamentals of Biochemistry-by Dr. Deb Jyoti Das,
2. Essentials of Bio-chemistry by U. Satyanarayan, 1st Edition, Books and Allied Publications.
3. Textbook of Biochemistry –Chatterje and Shinde
4. Text book of Medical Bio-Chemistry – Dr. M.N.Chatterjee, 5th Edition, Jaypee Publication.
5. Fundamental of Bio-Chemistry – Dr.Dr.A.C.Deb, 5th Edition, Central Publication.
6. Bio-Chemistry introduction – Meke, 2nd Edition, McGraw-Hill Publication

e-Learning Source:

1. <https://youtu.be/PgRvnUofNCU>
2. https://youtu.be/a1oHRj_t_Bw
3. <https://youtu.be/ghMjJRIksp0>
4. <https://youtu.be/PIIAwx--KtM>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	-	-	1	-	3	3	2	2	-	2	2	-	-	-	-	1
CO2	2	-	-	2	-	3	2	2	1	-	2	3	-	-	-	-	2
CO3	2	-	-	1	-	3	3	1	2	-	1	2	-	-	-	-	1
CO4	2	-	-	1	-	3	3	2	1	-	2	3	-	-	-	-	1
CO5	2	-	-	2	-	3	2	2	1	-	2	2	-	-	-	-	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT112	GENERAL PSYCHOLOGY AND SOCIOLOGY	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	3,4



Integral University, Lucknow

Effective from Session: 2015-16

Course Code	ES101	Title of the Course	ENVIRONMENTAL STUDIES	L	T	P	C
Year	I	Semester	II	2	1	0	3
Pre-Requisite	Nil	Co-requisite	Nil				

Course Objectives

- To study about the Environment and the Ecosystem.
- To study about the Natural Resources.
- To study about Biodiversity and Conservation.
- To study Environmental pollution, its policies and practices.
- To study Human Population and Environmental Ethics.

Course Outcomes

CO1	Gain knowledge about environment and ecosystem
CO2	Students will learn about natural resource, its importance and environmental impacts of human activities on natural resource.
CO3	Gain knowledge about the conservation of biodiversity and its importance.
CO4	Aware students about problems of environmental pollution, its impact on human and ecosystem and control measures.
CO5	Students will learn about increase in population growth and its impact on environment.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Environment and Ecosystem	Environment, its components and segments, Multidisciplinary nature of Environmental studies, Concept of Sustainability and sustainable development, Environmental movements, Ecosystem, Structure & Function, Energy flow in the Ecosystem, Ecological Pyramids and Ecological Succession.	6	CO1
2	Natural Resources	Renewable and non-renewable, Soil erosion and desertification, Deforestation, Water: Use and over exploitation, Impacts of large Dams, Case studies	6	CO2
3	Biodiversity and Conservation	Levels of biological diversity, Hot spots of biodiversity, India as a Mega Diversity Nation, Endangered and endemic species of India, Threats to Biodiversity, Conservation of Biodiversity, Ecosystem and biodiversity services.	6	CO3
4	Environmental Pollution, Policies and Practices	Environmental pollution, Solid waste management, Ill effects of fireworks, Climate change, Ozone layer depletion, acid rain and impacts on human communities and Environment, Environmental Laws: Environment Protection Act, Wildlife protection Act, Forest conservation Act, Convention on Biological Diversity (CBD), Tribal rights, Human wildlife conflicts.	6	CO4
5	Human Population and the Environment	Human population growth: Impacts on environment, human health and welfare, Resettlement and rehabilitation of project affected persons, Environmental ethics, Environmental communication and public awareness, case studies.	6	CO5

Reference Books:

- 1) Agarwal, K.C. 2001 Environmental; Biology, Nidi Pub. Ltd. Bikaner.
- 2) Bharucha Erach, The Biodiversity of India, Mapin Pub. Pvt. Ltd., Ahmedabad-380, India.
- 3) Brunner R.C. 1989. Hazardous waste incineration, Mc Graw Hill
- 4) Clark R.S. Marine Pollution, Clanderon Press Oxford (TB)
- 5) Cunningham W.P.2001.Cooper, T.H. Gorhani, E & Hepworth, Environmental encyclopedia, Jacob Publication House, Mumbai.
- 6) De. A.K. Environmental chemistry Willey Eastern Limited.
- 7) Glick, H.P.1993 water in crisis, Pacific Institute for studies in dev, Environment & security, Stockholm Env, Institute, Oxford Univ, Press 473 p.
- 8) Hawkins R. E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay.
- 9) Heywood, V.H. & Watson, R. T.1995.Global biodiversity Assessment. Cambridge Univ. Press 1140 p.
- 10) Jadhve, H. and Bhosale, V. M. 1995 Environmental protection and laws, Himalaya pub, house, Delhi.284 p.
- 11) Mckinnery, M.L. and School, R. M.1996 Environmental science systems and solutions, web enhanced edition 639 p.
- 12) Mhaskar A.K. Matter Hazardous, Techno Science Pub (TM)
- 13) Miller T.G. Jr, Environmental Ecology, W. B. Saunders Co.USA,574 p. 16
- 14) Odum, E.P.1997.Fundamental chemistry, Goel Pub House Meerut.
- 15) Survey of the Environment, The Hindu (M).
- 16) Sharma B.K.2001.Environmental Chemistry, Goel Pub House Meerut

e-Learning Source:

- <https://byjus.com/biology/difference-between-environment-and-eCosystem>.
- <https://www.youtube.com/watch?v=dRPI4TB8w7k>
- <https://www.youtube.com/watch?v=3fbEVyJyJck>
- <https://www.vedantu.com/biology/conservation-of-biodiversity>
- <https://youmatter.world/en/definition/soil-erosion-degradation-definition/>
- <https://byjus.com/biology/difference-between-environment-and-eCosystem>.

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
CO4	-	-	-	-	-	-	2	-	-	-	-	2	-	-	-	-	-	-
CO5	-	-	-	-	-	-	1	1	-	-	1	2	-	-	-	1	1	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches/Disciplines

Course Code	Course Title	Attributes							SDGs No.
ES01	Environmental Studies	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	6,13,14,& 15
						√			



Integral University, Lucknow

Effective from Session: 2017-18							
Course Code	LN131	Title of the Course	EFFECTIVE COMMUNICATION AND MEDIA STUDIES IN ENGLISH	L	T	P	C
Year	I	Semester	II	2	1	0	3
Pre-Requisite	10+2	Co-requisite	UG				
Course Object ives	The students will be able to: Developing the art of communication and learning basic skills of conversation along with knowledge of Professional and Media Skill Development, Career enhancement tips and goal oriented learning.						
Course Outcomes							
CO1	Students will be able to develop Formal and Informal Spoken skills, learn career development skills and learn to have clear idea of goal setting.						
CO2	Students will learn about the importance and usage of mass media and ways to develop their media skills.						
CO3	Academic Writing will help students to format and structure the content they create which will help them to be professional writers and bloggers.						
CO4	The unit will help students to learn and develop better conversation skills in formal and informal setup. They will learn the proper usage and pronunciation in various accent enabling them to converse in competitive environment.						
CO5	The unit enables students to put all the theoretical knowledge to practice, assuring complete learning and implementation.						

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	COMMUNICATION IN PRACTICE	1. Do's and Don'ts of Formal and Informal Communication 2. Tips on Career Management- Setting Clear Goals, Skill Development, Network Building and Professional Relationship Etiquette, Knowing Aptitude and Values. 3. Classroom Practice- 4. JAM (Just A Minute) 5. Extempore, Rebuttal, Forum, Role Play.	7	CO1
2	MASS COMMUNICATION AND JOURNALISM	1. Introduction to Mass Communication. 2. Types of Mass Communication/ Mass Media 3. Impact of Globalization on Mass Media 4. Socio Political Impact of Digital Media 5. Advertisement- Ethical and Unethical Advertisement, Jingles, Tag Lines, Punch Lines, Media Writing.	7	CO2
3	FUNDAMENTALS OF ACADEMIC WRITING	1. The four main types of academic writing- Descriptive, Analytical, Persuasive and Critical. 2. Writing Book Review, 3. Introduction to Descriptive Writing 4. Techniques and Features of Descriptive Writing - Character, Place and Travel Description, Event, Movie and Food description.	7	CO3
4	CONVERSATION SKILLS	1. Phonetics- Learning Speech Mechanism (Voice and Accent) A. Introduction- Self and Other-Guest Speaker / Colleague B. Polite Conversational Etiquette 1. Varieties of English Language; their difference in terms of Pronunciation, Vocabulary and Spelling: A. British B. American	7	CO4
5	ACADEMIC PROJECT	1. Creating News Bytes 2. Writing News Report 3. Creating Jingles and Tag Lines for Famous Brands. 4. Writing Editorial on a Topical Subject 5. Writing Film Reviews 6. Travelogue	4	CO5

Reference Books:

1. Kumar, Sanjay and PushpLata. Communication Skills. Oxford University Press, Oxford 2011.
2. Raman, Meenakshi, and Sangeeta Sharma. *Technical Communication: Principals and Practice*. Second Edition, Oxford University Press, 2012.
3. Raina, Roshan Lal, Iftikhar Alam, and Faizia Siddiqui. *Professional Communication*. Himalaya Publication House 2012.
4. Agarwal, Malti. *Professional Communication*. Krishna's Educational Publishers. 2016.
5. Carnegie, Dale. *How to Win Friends and Influence People in the Digital Age*. Simon and Schuster. 2012.
6. Covey, Stephen R. *The Seven Habits of Highly Successful People*. Free Press. 1989.
7. Verma, KC. *The Art of Communication*. Kalpaz. 2013.
8. Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2011). *Handbook of Technical Writing*, Tenth Edition (10th ed.). St. Martin's Press
9. Sherman, Barbara. (2014). *Skimming and Scanning Techniques*. Liberty University Press.
10. Barker, Alan. (2011). *Improve Your Communication Skills*. Kogan Page Pub. [later edited version to be added if any]
11. Seely, John. (1998). *The Oxford Guide to Effective Writing and Speaking*. Oxford UP.

e-Learning Source:

1. <http://www.uptunotes.com/notes-professional-communication-unit-i-nas-104...>
2. <https://www.docsity.com/en/subjects/professional-communication/>
3. <https://lecturenotes.in/download/note/22690-note-for-communication-skills-for-profession...>
4. https://www.files.ethz.ch/isn/125396/1154_trystnehu.pdf
5. <https://kr.usembassy.gov/martin-luther-king-jr-dream-speech-1963/#:~:text=I%20have%20a%20dream%20that,skin%20but%20by%20their%20>

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	1	2	2	1	2	3	3	1	2	2	3	2	2	3	2	3
CO2	3	3	2	2	2	2	2	1	2	2	2	3	2	2	3	3	3	3
CO3	3	2	2	3	2	3	3	2	2	3	2	3	2	3	3	3	3	3
CO4	2	3	1	2	3	1	2	2	3	3	3	3	3	3	2	2	2	2
CO5	3	2	2	1	2	3	3	3	2	3	2	2	3	2	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs										SDGs	
Course Code	Course Title	Attributes								SDGs No.	
LN131	Effective Communication and Media Studies in English	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics			
		✓	✓	✓				✓		3,4, 6	



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT113	Title of the Course	HUMAN ANATOMY-II LAB	L	T	P	C
Year	I	Semester	II	0	0	2	1
Pre-Requisite	NIL	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human anatomy as needed for the study and practice of physiotherapy.						

Course Outcomes	
CO1	To understand about the structure of thoracic wall& its application in practice of physiotherapy.
CO2	To understand about the Viscera of thoracic cavity& its application in practice of physiotherapy.
CO3	To understand about the Abdomen and Pelvis& its application in practice of physiotherapy.
CO4	To understand about the Head and Neck & its application in practice of physiotherapy.
CO5	To understand about the Neuro Anatomy and its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	THORACIC WALL	1. Practical demonstration of skeleton of thoracic wall 2. Practical demonstration of movement of thoracic wall 3. Practical demonstration of surface land marks of thoracic wall	4	CO1
2	VISCERA OF THORACIC CAVITY	1. Practical demonstration of surface anatomy of lung and heart 2. Auscultatory land marks for heart and lungs 3. Surface land marks and functional demonstration of diaphragm	4	CO2
3	ABDOMEN & PELVIS	1. Functional demonstration of abdominal muscle 2. Practical demonstration of region of abdomen 3. Practical demonstration of pelvic floor muscle 4. Surface and palpatory landmarks for pelvis	4	CO3
4	HEAD AND NECK	1. Functional demonstration of muscles responsible for facial expression 2. Palpation of muscle responsible for facial expression 3. Functional demonstration of muscles of mastication 4. Palpation of muscles of mastication 5. Functional demonstration and palpation of cervical muscles 6. Demonstration of movement and palpatory structure of TMJ and atlantoaxial, Atlantooccipital joint.	4	CO4
5	NEURO-ANATOMY	1. Functional demonstration of CNS. 2. Functional demonstration of cranial and spinal nerve.	4	CO5

Reference Books:	
1	B.D. Chaurasia's, Human Anatomy-Volume 1, 2, 3 CBS Publishers & Distributors.
2	Inderbir Singh, Textbook of Anatomy with Colour Atlas-Vol. 1, 2, 3 Jaypee Brothers.
3	Snell-Clinical Anatomy by regions -Lippincott.
4	McMinn's Last's Anatomy-Regional and applied, Churchill Livingstone.
5	Cunningham Manual of Practical Anatomy Vol. I, II, III, Churchill Livingstone.
6	Williams & Warwick, Gray's Anatomy-Churchill Livingstone.
7	Extremities by Quining Wasb
8	Basic Anatomy & Physiology by Smout and McDowell

e-Learning Source:	
1.	https://youtu.be/X5RUFXZZBH4
2.	https://youtu.be/06o_XNKwuOE
3.	https://youtu.be/4Sab-2E4ZDI

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO2	1	3	2	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO3	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1
CO4	2	3	1	2	-	-	-	1	1	1	-	3	2	2	1	1	1
CO5	1	3	1	2	-	-	-	1	1	1	-	3	2	1	1	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT113	HUMAN ANATOMY-II LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	3,4



Integral University, Lucknow

Effective from Session: 2022-23

Course Code	PT114	Title of the Course	HUMAN PHYSIOLOGY-II LAB	L	T	P	C
Year	I	Semester	II	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate knowledge in human physiology as needed for the study and practice of physiotherapy.						

Course Outcomes

CO1	To understand about excretory function& its application in practice of physiotherapy.
CO2	To understand about gastro intestinal tract& its application in practice of physiotherapy.
CO3	To understand about Nervous system and special senses& its application in practice of physiotherapy.
CO4	To understand about Endocrine system & its application in practice of physiotherapy.
CO5	To understand about reproductive system and its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	EXCRETORY FUNCTION	Practical demonstration of excretory function on models, charts and videos	4	CO1
2	GASTRO INTESTINALTRACT(GIT)	Practical demonstration of gastro intestinal tract on models, charts and videos	4	CO2
3	NERVOUS SYSTEM &SPECIALSENSES	1. Practical demonstration of nervous system and special senses on models, charts and videos 2. Practical demonstration of sensory and motor function on models, charts and videos 3. Practical demonstration of posture and equilibrium	4	CO3
4	ENDOCRINESYSTEM	Practical demonstration of endocrine system on models, charts and videos	4	CO4
5	REPRODUCTIVESYSTEM	Practical demonstration of reproductive system on models, charts and videos	4	CO5

Reference Books:

1. Concise Medical Physiology by Chaudhuri, 4th Edition; New Central Book Agency.
2. Human Physiology, Sembulingam; 4th ed, Jaypee Brothers.
3. A Textbook of Practical Physiology, Ghai C L, Jaypee Brothers.
4. Practical physiology by Vijaya Joshi; Vora Medical Publication.
5. Human Physiology, Chatterjee. Vol: 1&2; 10th Edition; Medical & Allied Agency
6. Textbook of Medical Physiology by Guyton & Hall, 11th Edition; Elsevier Publication
7. Samson Wright's Applied Physiology 13th ed, Keele CA, Neil E &Joels N, Oxford Medical Pub.
8. Principles of Anatomy & Physiology, Tortora, 8th Edition; Harper & Row Publication.
9. Textbook of Physiology : Ganong

e-Learning Source:

1. https://youtu.be/_jagVY0XMVk
2. <https://youtu.be/cXPuW6ZwcFE>
3. <https://youtu.be/VAEmxt78bBI>
4. <https://youtu.be/vLdNX5Te1Xo>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1
CO2	1	3	1	3	-	-	-	1	3	-	-	3	3	2	-	1	1
CO3	1	3	1	2	-	-	-	1	2	-	-	2	3	1	-	1	1
CO4	1	3	1	2	-	-	-	1	3	-	-	3	2	1	-	1	1
CO5	1	3	1	2	-	-	-	1	2	-	-	2	2	1	-	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT114	HUMAN PHYSIOLOGY-II LAB	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	3,4
		√	√	√	√		√	√	



Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	PT115	Title of the Course	BASIC OF EXERCISE THERAPY-LAB	L	T	P	C
Year	I	Semester	II	0	0	2	1
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	The student will be able to demonstrate the knowledge in basic of exercise therapy as needed for the study and practice of physiotherapy						

Course Outcomes: After the successful course completion, learners will develop following attributes:	
CO1	To understand about Mechanical principles of exercise& its application in practice of physiotherapy.
CO2	To understand about Mechanics of movement & its application in practice of physiotherapy.
CO3	To understand about Simple Mechanics& its application in practice of physiotherapy.
CO4	To understand about Fundamental and Derived Position& its application in practice of physiotherapy.
CO5	To understand about Introduction to movements& its application in practice of physiotherapy.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	MECHANICAL PRINCIPLES OF EXERCISE	1. Practical demonstration of Force and composition of force and their alteration and application on human model 2. Practical demonstration of Gravity, COG, LOG, and their alteration and application in human model 3. Practical demonstration of Base of support, Equilibrium and their alteration and application in human model 4. Practical demonstration of Fixation stabilization and their alteration and application in human model	4	CO1
2	MECHANICS OF MOVEMENT	1. Practical demonstration of Axis and plane and its application in human model 2. Practical demonstration of Power, Work, Energy and its application in human model 3. Practical demonstration of Velocity, Motion and its law its application in human model 4. Practical demonstration of Momentum, Inertia, Friction and its application in human model	4	CO2
3	SIMPLE MECHANICS	1. Practical demonstration of Levers and its application in human body model 2. Practical demonstration of Pulleys and its application in human body model 3. Practical demonstration of Inclined Planes and its application in human body model 4. Practical demonstration of Stress, Strain, Springs and its application in human model	4	CO3
4	FUNDAMENTAL AND DERIVED POSITION	1. Practical demonstration of Fundamental position on human model 2. Practical demonstration of Derived position on human model	4	CO4
5	INTRODUCTION TO MOVEMENTS	1. Practical demonstration of Active range of motion, Passive range of motion on human model 2. Practical demonstration of Active assisted range of motion, Resisted range of motion on human model 3. Practical demonstration of Types of muscle contraction on human model	4	CO5

Reference Books:

1. Practical Exercise Therapy- Hollis and Cook
2. Principles of Exercise Therapy- Deena Gardiner
3. Joint structure and function-Norkin
4. Exercise Therapy-Carolyn Kisner
5. Exercise Therapy in the management of musculoskeletal disorders- Fiona Wilson

e-Learning Source:

1. <https://youtu.be/X5RUFXZZBH4>
2. https://youtu.be/06o_XNKwuOE
3. <https://youtu.be/4Sab-2E4ZDI>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	-	2	1	-	-	-	1	1	-	1	2	1	3	2	1
CO2	1	3	-	2	-	-	-	-	1	-	-	1	2	1	3	2	1
CO3	2	3	-	2	-	-	-	-	1	1	-	1	2	1	3	2	1
CO4	1	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1
CO5	2	3	-	1	-	-	-	-	1	-	-	1	2	1	3	2	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Course Code		Course Title		Attributes & SDGs							SDGs No.	
				Attributes								
PT115		BASIC OF EXERCISE THERAPY-LAB		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics		
				√	√	√	√		√	√	3,4	