

STUDY & EVALUATION SCHEME OF BACHELOR OF PHYSIOTHERAPY

(BPT - I YEAR/ II SEMESTER)

[Applicable w.e.f. Academic Session 2015-16 till revised]



**INTEGRAL UNIVERSITY, LUCKNOW
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**Syllabus approved by Board of Study, Faculty Board, Academic
Council, Executive Council of the Integral University, Lucknow**

DEPARTMENT OF PHYSIOTHERAPY INTEGRAL UNIVERSITY, LUCKNOW

STUDY & EVALUATION SCHEME

PROGRAM: BACHELOR OF PHYSIOTHERAPY (BPT)

I - Year

S. No	Course Category	Code No.	Name of the Course	Periods			Credits	Evaluation Scheme				
				L	T	P		C	Sessional (CA)			ESE
							CT		TA	Total		
II - Semester												
1.	DC	PT109	Human Anatomy-II	3	1	0	4	40	20	60	40	100
2.	DC	PT110	Human Physiology-II	3	1	0	4	40	20	60	40	100
3.	DC	PT111	Basic of Exercise therapy	3	1	0	4	40	20	60	40	100
4.	DC	PT112	Sociology	2	1	0	3	40	20	60	40	100
5.	DC	ES101	Environmental studies	2	1	0	3	40	20	60	40	100
6.	DC	LN202	Advance Professional communication	2	1	0	3	40	20	60	40	100
7.	DC	PT113	Human Anatomy-II Lab	0	0	2	1	40	20	60	40	100
8.	DC	PT114	Human Physiology-II Lab	0	0	2	1	40	20	60	40	100
9.	DC	PT115	Basic of Exercisetherapy-Lab	0	0	2	1	40	20	60	40	100
Total				15	06	06	24	360	180	540	360	900

L: Lecture	T: Tutorials	P: Practical	C: Credit	CT: Class Test	TA: Teacher Assessment
Sessional (CA): Class Test + Teacher Assessment			Subject Total: Sessional (CA) + End Semester Examination (ESE)		
DC – Departmental Core					
DE – Departmental Elective					

Approved by the Academic Council on:

SUBJECT NAME: HUMAN ANATOMY-II

SUBJECT CODE: PT 109

(W.e.f. July 2017)

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UNIT-I: THORAX: (8 hours)

1. Thoracic wall **(3 hrs.)**
 - a) Thoracic inlet: Boundaries and structure passing through it.
 - b) Typical intercostals space: Structures present, action and nerve supply of intercostals muscles, details of intercostals nerve.
 - c) Diaphragm: Attachments, action and nerve supply of diaphragm. Details of Respiratory movements.
2. Pleura & Lung **(2 hrs.)**
 - a) Layers of pleura and its nerve supply.
 - b) Surface, borders, fissures and lobes and structure in the hilum of lung.
3. Pericardium & heart: **(2 hrs.)**
 - a) Layers of pericardium
 - b) Introduction to heart, external features and blood supply.
4. Important blood vessels of Thorax: **(1 hr.)**
 - a) Location and branches of ascending arch of aorta and descending aorta.
 - b) Location and tributaries of Brachiocephalic veins and superior vena cava.
 - c) Azygos system of veins.

UNIT-II ABDOMEN & PELVIS: (8 hours)

1. Introduction to abdomen, its regions and quadrants. **(1 hr.)**
2. Abdominal wall: **(3 hrs.)**
 - a) Enumerate of the layers of anterior abdominal wall.
 - b) Muscles of anterior and posterior abdominal wall their origin insertion, action and nerve supply.
 - c) Rectus sheath.
3. Components of gastrointestinal tract, their location and orientation in abdominal cavity. Brief account of liver and stomach. **(2 hrs.)**
4. Urinary system: Components of urinary system, their location and orientation in abdomino-pelvic cavity. Brief account of kidneys. **(1hr.)**
5. Reproductive system: Components of male & female reproductive system and their location. **(1 hr.)**

UNIT-III: HEAD AND NECK: (9 hours)

1. Muscles and fascia. **(5 hrs.)**
 - a) Scalp and muscles of facial expression **(2hrs.)**
 - Layers of scalp, nerve and blood supply.
 - Enumerate muscles of facial expression, their nerve supply and action, sensory nerve supply of face.
 - b) Muscles of mastication, their origin, insertion action and nerve supply. **(1 hr)**
 - c) Neck: Layers of deep cervical fascia, extent and attachment of investing layer, Sternocleidomastoid, diaphragm and strap muscles of neck. **(2 hrs.)**
2. Triangles of neck: Subdivision of anterior and posterior triangle and their contents. Common carotid & external carotid artery & Internal Jugular vein. **(2 hrs.)**
3. Joints: Details of temporomandibular joint, atlantoaxial and atlanto-occipital joint. **(2 hrs.)**

UNIT-IV BRAIN: (8 hours)

1. Introduction and regional organization of brain including its coverings. **(1hr.)**
2. Cerebral hemisphere: Lobes, poles, surface and borders of cerebral hemisphere. Important sulci and gyri on superolateral and medial surface. Sensory, motor, visual and auditory areas. White matter of cerebrum, types of fibers, parts and location of corpus callosum, details of internal capsule. **(3 hrs.)**
3. Cerebellum: External features, function of cerebellum. **(1 hr.)**
4. Mid Brain, pons and medulla: External features and cranial nerves attached to them. **(1 hr.)**
5. Spinal cord: External features and internal features. **(1hr.)**
6. CSF – Formation, absorption and circulation in the ventricular system. **(1 hr.)**

UNIT-V NEUROANATOMY: (7 hours)

1. Important ascending and descending tracts. **(3 hrs.)**
2. Cranial nerves: Enumerate the cranial nerves, their site of attachment and innervations, details of facial and trigeminal nerve. **(3 hrs.)**
3. Brief account of visual and auditory path way. **(1 hr.)**

BOOKS RECOMMENDED:

1. Inderbir Singh'S Textbook of Anatomy 7th edition Vol.1, 2, 3
2. Clinically oriented Anatomy 7th Edition by Keith L. Moore
3. Clinical Neuroanatomy 7th Edition- Richard S. Snell
4. Surface and Radiological Anatomy 3rd edition by A. Halim
5. B.D. Chaurasia Human Anatomy : Regional and Applied Dissection & Clinical 7th Edition Vol. 1., 2, 3
6. General Anatomy by Vishram Singh 2nd Edition
7. Clinical Anatomy by Regions - Richard S. Snell
8. Human Osteology- A Clinical Orientation - Nafis Ahmad Faruqi 3rd Edition
9. Grant's Atlas of Anatomy - Anne M. R. Agur , Arthur F. Dalley
10. Gray's Anatomy: The Anatomical Basis of Clinical Practice - Susan Standring 41st edition
11. McMinn and Abrahams' Clinical Atlas of Human Anatomy - Peter H. Abrahams

SUBJECT NAME: HUMAN PHYSIOLOGY-II

SUBJECT CODE: PT 110

(W.e.f. July 2015)

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UNIT-I EXCRETORY FUNCTION: (08 Hours)

Kidney structure and function, Urine formation, Glomerular filtration rate, Renal blood flow, Tubular absorption, Regulation of Na, K, Ca, and H₂O. Acidification of urine, Acid base balance, micturition reflex neuron control, neurogenic bladder, diuretics

UNIT-II GASTRO INTESTINAL TRACT (GIT): (08 Hours)

Motility nervous control, blood circulation composition, secretory function of saliva gastric juices, HCL secretion, pancreas gall bladder and small intestine, digestion and absorption of food, defecation and swallowing reflex.

UNIT-III NERVOUS SYSTEM & SPECIAL SENSES: (08 Hours)

Receptor physiology, synaptic structure, reflexes, physiology of touch, pain, temperature and proprioception, labyrinth, function of sensory and motor cortex, ascending and descending tracts, motor function of spinal cord and reflexes, spinal cord transection and spinal shock, hypothalamus, thalamus, basal ganglia, cerebellum, limbic system, RAS system, learning memory and condition reflex, posture, equilibrium and sleep, cerebral blood flow, CSF and brain metabolism. Eye, Ear, Olfaction, Taste.

UNIT-IV ENDOCRINE SYSTEM: (08 Hours)

Hormone secretion, transport and clearances from blood, pituitary thyroid, adrenal cortical, parathyroid, pancreas, Temperature Regulation: role of hypothalamus and various other mechanisms in temperature regulation.

UNIT-V Reproductive System: (08 Hours)

Female menstrual cycle and related hormone function of estrogens, progesterone and testosterone, puberty and menopause, Male spermatogenesis and function of testosterone, Sucking reflex- pregnancy and lactation.

BOOKS RECOMMENDED:

1. Textbook of Physiology: Guyton
2. Textbook of Physiology : Ganong
3. Human Physiology: 1. Chaudhary 2. Bijlani
4. Essentials of Medical Physiology: K.Semubulingam.

SUBJECT: BASIC OF EXERCISE THERAPY
SUBJECT CODE: PT 111
(W.e.f. JULY 2015)

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UNIT-I

Mechanical Basis of Movement: (04 Hours)

Force and force Systems, Motion and its Laws, Levers, Angle of Pull, Pulleys and its types, Pendulum, Friction, Work Energy and Power Friction, Stress and Strain.

Skeletal Basis of Movement: (04 Hours)

Planes and Axes, Joints and their Classification, Classification of Movement, Degrees of Freedom, Bones and their Classification.

UNIT-II

Musculoskeletal Basis of Movement: (04 Hours)

Structure of Muscle and its Classification, Muscle Tension, Muscle Fibre Group Action of Muscles, Torque & angle of pull.

Gravity: (02 Hours)

Effects, Centre of gravity, Line of Gravity and their Alterations, Role in Human Body and Movement.

Equilibrium: (02 Hours)

Effects, Supporting Base, role in Human Movement.

UNIT-III

Simple Machines: (04 Hours)

Levers and their Functions and classification, Pulleys and their Functions and classification, Inclined Planes and their Functions, classification & their clinical relevance.

Elasticity: (04 Hours)

Stress, Strain, Hooke's Law Springs and their properties & their clinical relevance.

UNIT-IV

Hydrostatics and Hydrodynamics: (04 Hours)

Principles & its Application

Traction: (04 Hours)

Definition, types, indication, contraindication, & uses of traction.

UNIT-V

Fundamental and Derived Positions:

(08 Hours)

Fundamental position of human body, effects, muscles uses and their importance.

Derived position of human body, effects, muscles uses and their importance's.

RECOMMENDED 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

SUBJECT NAME: SOCIOLOGY

SUBJECT CODE: PT 112

(W.e.f. July 2015)

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UNIT-I

INTRODUCTION: (04 Hours)

Definitions of sociology, Sociology as a science of society, uses of the study of sociology, application of knowledge of sociology in physiotherapy.

SOCIOLOGY AND HEALTH: (04 Hours)

Social Factors affecting health status, social consciousness and perception of illness, social consciousness and meaning of illness, decisions making in taking treatment Institutions of health, their role in the improvement of the health of the people.

UNIT-II

SOCIALIZATION: (04 Hours)

Meaning of socialization, influence of social factor on personality, socialization in hospitals, and socialization in the rehabilitation of patients.

SOCIAL GROUPS: (04 Hours)

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

UNIT-III

FAMILY & COMMUNITY: (04 Hours)

Influence of family on human personality, discussion of chares in the functions of a family on the individuals' health family and nutrition the effects of sickness on family and psychosomatic disease. Concept of community, role of rural and urban communities in public health, role of community, in determining beliefs, practices and home remedies in treatment.

CULTURE: (04 Hours)

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

UNIT-IV

Social Change: (04 Hours)

Factor of Social change, human adaptation and social change, social change and stress, social change and deviance, social change and health programs the role of social planning in the improvement of health and in rehabilitation.

Organization: (04 Hours)

Goals and functions, organization as systems, organizational impact – individual, family community, social structure, power and control in organizations, feminist perspectives on organizations.

UNIT-V

Social Problems of the Disabled: (08 Hours)

Consequences of the following social problems in relation to sickness and disability remedies, to prevent these problems.

- a) Population explosion
- b) Poverty and unemployment
- c) Beggary
- d) Juvenile delinquency
- e) Prostitution
- f) Alcoholism
- g) Problems of women in employment
- h) Social of the health profession.
- i) Various perspectives, power and autonomy in professions, women and professions.

BOOKS RECOMMENDED

1. Sociology – Sachdeva
2. Sociology for Physiotherapist / Dibyendunarayan Bid
3. Textbook of Sociology for Physiotherapy- K.P. Neerya

SUBJECT: ENVIRONMENTAL STUDIES
SUBJECT CODE: ES 101
(w.e.f. July 2015)

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UNIT-I NATURAL RESOURCES: RENEWABLE AND NON-RENEWABLE RESOURCES:

Natural resources and associated problems.

- a) **Water Resources:** Use and over utilization of surface and ground water, **floods**, drought, conflicts over water, dams- benefits and problems.
- b) **Mineral Resources:** Use and exploitation, environmental effects of extracting and using minerals resources, case studies.
- c) **Food Resources:** World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer -pesticide problems, Water logging, Salinity, case studies.
- d) **Energy Resources:** Growing energy needs, renewable and nonrenewable energy sources, use of alternate energy sources, case studies.
- e) **Land Resources:** Land as a resource, Land degradation, Man induced landslides, Soil erosion and desertification.
 - Role of an individual in conservation of natural resources
 - Equitable use of resources for sustainable life styles.

UNIT-II ECOSYSTEMS:

- a) Concept of an Ecosystem.
- b) Structure and Function of an Ecosystem.
- c) Producer Consumer and decomposers.
- d) Energy flow in the Ecosystem.
- e) Ecological Succession.

UNIT-III BIODIVERSITY AND ITS CONSERVATION:

- a) Introduction - Definition: Genetic, Species and Ecosystem diversity.
- b) Bio-Geographical classification of India,
- c) Value of Bio-diversity: Consumptive use, productive use, Social, ethical, aesthetic and option values
- d) Biodiversity at Global, National & Local levels.
- e) Hotspots of Biodiversity
- f) Threats to Biodiversity: Habitat Loss, Poaching of Wildlife, Man-Wildlife Conflicts

UNIT-IV ENVIRONMENTAL POLLUTION:

- a) Definition, Causes, effects and control measures of-Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Nuclear Hazards

- b) Solid Waste Management: Causes, effects and control measures of urban and Industrial Wastes.
- c) Role of an Individual in prevention of pollution.
- d) Pollution case studies
- e) Disaster Management: floods, earthquake, cyclones and landslides.

UNIT-V SOCIAL ISSUES AND THE ENVIRONMENT:

- a) Resettlement and Rehabilitation of people; its problems and concerns, case studies.
- b) Environmental ethics: issues and possible solutions
- c) Green house effect and global Warming, effects of acid Rain and their remedial measures and ozone Layer depletion.

HUMAN POPULATION AND THE ENVIRONMENT

- a) Population growth variation among nations, Population Explosion, Family welfare programme,
- b) Environment and Human Health,
- c) Human Rights.
- d) HIV/AIDS, Women and Child welfare
- e) Role of Information Technology in Environment and Human Health, Case studies.

BOOKS RECOMMENDED

1. Agarwal, K.C. 2001 Environmental; Biology, Nidi Pub. Ltd. Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mappin Pub. Pvt. Ltd., Ahmedabad-380, India.
3. Brunner R.C. 1989. Hazardous waste incineration, Mc Graw Hill.
4. Clark R.S. Marine Pollution, Clarendon Press Oxford (TB).
5. Cunningham W.P. 2001. Cooper, T.H. Gorhani, E&Hepworth, Environmental encyclopedia, Jaicob Publication House, Mumbai.
6. De . A.K. Environmental chemistry Willey Eastern Limited.

SUBJECT: ADVANCE PROFESSIONAL COMMUNICATION
SUBJECT CODE: LN 202
(w.e.f. July 2015)

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UNIT I: READING & LISTENING COMPREHENSION (7 hours)

Ways to improve the Speed & Efficiency of Reading ,Importance of Skim Reading, Listening Skills & Features of Effective Listening, Benefits of Effective Listening

UNIT II: WRITING SKILLS (7 HOURS)

C V & Resume writing, Job Application letter/Covering letter,
Precis: Principles of Condensation
Paragraph writing, Development of Paragraph

UNIT III: GROUP DISCUSSION AND INTERVIEW SKILLS (7 hours)

Group Discussion: Meaning &Significance, How to prepare & practice for GD, Common Pitfalls in a GD

Interview: Definition, Skills & Techniques, Preparation, Negative Interview Factors & Interview Tips

UNIT IV: PRESENTATION SKILLS (7 hours)

Presentation Strategies: Purpose, Audience and Locale, Organizing Contents, Audio-Visual Aids, Nuances of Delivery, Body Language, Voice Dynamics.

UNIT V: PROJECT WORK (4 HOURS)

At the commencement of the semester, the student would be assigned a topic by the Teacher/Instructor. They will research it & submit a duly documented report of about 20-25 pages by the end of the semester.

BOOKS RECOMMENDED:

1. Raman, Meenakshi & Sharma, Sangeeta. *Technical Communication: Principles and Practice*, Oxford University Press-2013
2. Konar, Nira. *Communication Skills For Professionals*, PHI Learning Pvt. Ltd - 2011
3. Board of Editors. *Written and Spoken Communication in English*, University Press-2007
4. Lata , Pushp & Kumar, Sanjay .*Communicate or Collapse :A Handbook of Effective Public Speaking , Group Discussions and Interviews*, PHI Learning Pvt. Ltd -2011
5. Duck, Steve & McMahan, David T. *The Basics of Communication : A Relational Perspective*, Sage Publication-2012
6. Laws, Anne- *Presentations*, Orient Black Swan-2011
7. O'Connor, J. D. *Better English Pronunciation*, Universal Books Stall-1991
8. Anderson, Marilyn, Nayar, Pramod K. & Sen, Madhuchhanda .*Critical Thinking, Academic Writing and Presentation Skills*, Pearson-2009

SUBJECT: HUMAN ANATOMY-II LAB
SUBJECT CODE: PT 113
(w.e.f. July 2017)

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1. Demonstration of bones of Thorax, abdomen & pelvis and Head & Neck region.
2. Identification, side determination and external features of viscera of Thorax, abdomen and pelvis.
3. Identification of structure on prosected parts of Head and neck region.
4. Demonstration of parts and external features of brain and spinal cord.
5. Surface landmarks of Thorax, abdomen & pelvis and Head and Neck region.
6. Demonstration of models of organs and viscera of genitourinary system.

BOOKS RECOMMENDED:

1. Anatomy and physiology by Smout and McDowall (Edward Arnold).
2. Primary castes anatomy by Basmajian (Williams and Willkins Co. Baltimore).
3. An Introduction of fundamental Anatomy by David Sinclair.
4. Human Anatomy by B D Chaurasia's - All 3 volumes.
5. Limbs of Dr. Kadasana - All 3 volumes.
6. Anatomy of Grant
7. Human Embryology by Hamilton Body and Mossaman.
8. Neuro-Anatomy – Inderbir Singh.

SUBJECT: HUMAN PHYSIOLOGY-II LAB
SUBJECT CODE: PT 114
(w.e.f. July 2015)

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1. Recording of Pulse ,CVS Examination
2. Blood Pressure Measurement
3. Effect of posture on SBP and DBP
4. Effect of exercise on SBP and DBP
5. ECG
6. Cranial Nerve Examination
7. Sensory Examination
8. Motor Examination
9. Vitalography

BOOKS RECOMMENDED:

1. Textbook of Physiology: Guyton
2. Textbook of Physiology : Ganong
3. Human Physiology: A.K. Jain
4. Essentials of Medical Physiology: K.Semubulingam,

SUBJECT: BASIC OF EXERCISE THERAPY-LAB
SUBJECT CODE: PT 115
(W.e.f. July 2015)

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1. Mechanical Principles applied in Physiotherapy like force, Torque, Centre of Gravity, etc.
2. Demonstration of different types of levers in the human body.
3. Demonstration of different types of pulleys and strings used in Physiotherapy.
4. Demonstration of Archimedes' Principle of floatation and Bernoulli's Theorem in Hydrotherapy.
5. Demonstration of axial and pendular suspension.

RECOMMENDED 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