# Semester: I

S. NO.	MODULE	MODULE	TEAC	TEACHING SCHEDULE PER WEEK			HING SCHEDULE PER WEEF		CREDITS	CREDITS EVALUATION SCHEME		ME
		CODE	L	Р	SPT	SCT		INT.	EXT.	TOTAL		
1	English Communication	ENGL0103	2	0	0	0	2.0	25	50	75		
2	Human Anatomy - I	PSIO1101	4	0	0	0	4.0	50	100	150		
3	Human Anatomy - I Lab	PSIO1102	0	4	3	0	3.0	25 (P)+ 5.0 (SPT)=30	50	80		
4	Human Physiology - I	PSIO1103	4	0	0	0	4.0	50	100	150		
5	Human Physiology - I Lab	PSIO1104	0	2	3	0	2.0	12.5 (P) +5.0 (SPT)=17.5	25	42.5		
6	Electro therapy-I	PSIO1105	4	0	0	0	4.0	50	100	150		
7	Electro therapy-I Lab	PSIO1106	0	6	3	0	4.0	37.5 (P) +5.0 (SPT)=42.5	75	117.5		
8	Introduction to computer Application	COAP0101	2	0	0	0	2.0	25	50	75		
9	Introduction to computer Application Lab	COAP0102	0	2	0	0	1.0	12.5	25	37.5		
10	Foreign Languages French German Spanish	LANF0101 LANG0102 LANS0103	2	0	0	0	2.0	25	50	75		
		Total	18	14	9	0	28	327.5	625	952.5		

L=Lecture; P=Practical; SPT= Specialized Practical Training; SCT= Specialized Clinical Training

Credit Equivalence: 1 Lecture hrs. = 1 credit

2 Practical hrs. = 1 credit

3 SPT / SCT hrs. = 1 credit

# **SEMESTER-I**

# **English Communication**

L P SPT SCT 2 0 0 0

MODULE CODE	ENGL0103
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to vocabulary, synonyms, anatomize and to enhance English language skills as mentioned below:

- 1. To achieve knowledge and understanding on fundamentals of English Language and various aspects of it.
- 2. To get familiar with the rules of Grammar and their correct usage.
- 3. To enhance the creativity of the students related to verbal ability and reasoning or fluency of language.
- 4. To acquire knowledge and understanding the basic concepts of English language and its application in Science and & Engineering.
- 5. To acquire knowledge for the correct usage of technical English.

## **LEARNING OUTCOMES:**

- 1. Able to achieve knowledge and understanding on fundamentals of English Language.
- 2. Able to get familiar with the rules of Grammar and their correct usage.
- 3. Enhance the creativity of the students related to verbal ability and reasoning or fluency of English.
- 4. Ability to acquire knowledge for the correct usage of technical English.

#### **MODULE CONTENTS:**

Unit I: Introduction:			
Theory of Communication, Types and modes of Communication.			
Unit II: Language of Communication:			
Verbal and Non-verbal (Spoken and Written) Personal, Social and Business Barriers and			
Strategies Intra-personal, Inter-personal and Group communication.			
Unit III: Speaking Skills:			
Monologue, Dialogue, Group Discussion, Effective Communication/ Mis- Communication,			
Interview, Public Speech.			
Unit IV: Reading and Understanding			
Close Reading, Comprehension, Summary Paraphrasing, Analysis and Interpretation,			
Translation (from Indian language to English and vice-versa) Literary/Knowledge, Texts.			
Unit V: Writing Skills			
Documenting, Report Writing, Making notes, Letter writing.			

#### **RECOMMENDED BOOKS:**

	1. Fluency in English - Part II, Oxford University Press, 2006.		
<b>TEXT &amp; REFERENCE</b>	2. Business English, Pearson, 2008.		
BOOKS	3. Language, Literature and Creativity, Orient Blackswan, 2013.		
	4. Language through Literature (forthcoming) ed. Dr. Gauri		
	Mishra, Dr Ranjana Kaul, Dr Brati Biswas		

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## ASSESSMENT METHODOLOGIES:

This subject will be evaluated for a total of 75 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	05
2.	Sessional Test	2	15
3.	Group Discussion	4	05
4.	End Semester Exam	1	50

## MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES

#### Theory:

Assessments	1	2	3	4
Class Test	Х	Х		
Quiz	Х	Х	Х	Х
Assignment			Х	х

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## Human Anatomy - I

L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1101
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

#### **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Able to identify and describe anatomical aspects of muscle, bones & joints, & to understand and analyse movements of upper extremity.
- 2. Able to understand the anatomical basis of various clinical conditions e.g. Trauma, deformities, pertaining to upper limbs & spine.
- 3. Able to localize various surface landmarks.
- 4. Able to identify and describe various components and contents of the Thorax- with special emphasis to tracheo-bronchial tree, & cardio- pulmonary system.
- 5. Able to demonstrate the movements of various joints.
- 6. Able to distinguish major arteries, veins and Lymphatic with special emphases to extremities and spine.
- 7. Able to identify and describe the source, course of major arterial, venous and lymphatic system, with special emphasis to upper extremities, thorax and spine.

#### **MODULE CONTENTS:**

#### Unit I: General Introduction

Histology-Cell, tissues of the body, epithelium, connective tissue, cartilage, bone, lymph, muscle, nerve etc. Osteology-Formation, function, growth and repair of bones. General Embryology-Ovum, spermatozoas, fertilization, differentiation, development of various systems and foetal circulation.

Unit II: Systems of Human body (a brief Outline)

Cardio Vascular System –Arteries, capillaries, veins, heart, lymphatic system. Respiratory System –Anatomy of upper and lower respiratory tract including nose, larynx, trachea, bronchi, pleura and lungs. Urogenital System –Anatomy of Urinary system, male and female reproductive system (special emphasis to female system). Axial skeleton, Sensory Organs Digestive System –Anatomy of the gastro-intestinal tract.

Unit III: UPPER EXTREMITY & Myology

Osteology. Outline the anatomical features, attachments, ossification and side determination of the bones of U/L: Clavicle, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges.

Myology, Fascia and Muscles of front and back of upper arm: origin, insertion, nerve supply and action. Muscles of front and back of forearm: origin, insertion, nerve supply and action. Mention the small muscles of hand with their origin, insertion, nerve supply and action. Identify the nerves of upper limb and mention their position course, relations and distribution. Detail explanation of joints of upper limb: shoulder guide, Shoulder joint, Elbow, Wrist and joints of hand. Indicate the blood vessels of upper limb and mention their position course, relations, distribution and main branches. Lymphatic damage of upper limb, Applied anatomy of all structures of U/L.

<u>Unit IV: THORAX</u>

Ribs: Parts and main features of typical rib and define true, false and floating ribs. Sternum: State the parts and anatomical features. Intercostal muscles and diaphragm: origin,

insertion, nerve supply and action. List layers of anterior Abdominal wall and mention its origin, insertion, nerve supply and action of these muscles.

Joints of Thorax Identify the various joints and explain in detail: Manubriosternal joint, Costo vertebral joint, Costo transverse joint, CostoChondral joint, Chondro sternal joints, Inter vertebral joint, Movements of vertebral column – Respiratory movements

Mention the course and branches and nerves, blood vessels and lymphatic drainage of thorax, Intercostal space and its content, Diaphragm-structures passing through it. Applied Anatomy of structures of thorax.

Unit V: HEAD, NECK AND FACE (special emphasis on myology and osteology)

Muscles & Vessels of neck, Facial muscles & orbit, Temporo-Mandibular (T.M) joint, cervical vertebrae & Skull, Endocrine glands, Cranial nerves, Triangles of neck, Lateral wall of nose, Larynx, Pharynx Salivary glands

#### **RECOMMENDED BOOKS:**

	1. Williams & Warwick, Gray's Anatomy-Churchill Livingstone.
	2. Inderbir Singh, Textbook of Anatomy with colour Atlas-Vol. 1,
	2, 3 Jaypee Brothers.
	3. B.D. Chaurasia, Human Anatomy-Volume 1, 2, 3 CBS
	Publishers & Distributors.
TEXT BOOKS	4. Mcminn's Last's Anatomy-Regional and applied, Churchill
IEAI BOOKS	Livingstone.
	5. Cunningham Manual of Practical Anatomy Vol. I, II, III,
	Churchill Livingstone.
	6. Inderbir Singh, A Textbook on Human NeuroAntomy, Jaypee
	Brothers.
	7. Snell-Clinical Anatomy-Lippincott.
	8. Mcminn's et al-A Colour Atla s of Human Anatomy, Mosby.
	1. Gray's Anatomy
<b>REFERENCE BOOKS</b>	2. Extremities by Quining Wasb
	3. Anatomy & Physiology by Smout and McDowell
	4. Kinesiology by Katherine Wells [Saunders co.]

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 150 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## Human Anatomy - I Lab

L P SPT SCT 0 4 3 0

MODULE CODE	PSIO1102
CREDIT POINTS	3
FORMATIVE ASSESMENT MARKS	25 (P) + 05 (SPT) = 30
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

#### **MODULE CONTENTS:**

Practicals based on module contents will be uploaded soon.

#### METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 80 marks.

#### Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	30
2	External Assessment	1	50

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## Human Physiology - I

L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1101
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

#### **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Able to acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis].
- 2. Able to describe physiological functions of various systems, with special reference to Musculoskeletal, Cardio-respiratory, and alterations in function with aging.
- 3. Able to analyze physiological responses & adaptation to environmental stresses- with special emphasis on physical activity & temperature.
- 4. Able to acquire the skill of basic clinical examination, with special emphasis to Cardiovascular and Respiratory system, & Exercise tolerance/Ergography.

#### **MODULE CONTENTS:**

<u>Unit I: General Physiology</u>

- The cell & cell organelles structure & functions
- Homeostasis, biofeedback mechanisms
- Transport across cell membrane
- Outline of membrane potential & action potential

Unit II: Nerve muscle

- Muscle -classification, structure, sarcomere properties of muscles
- Myoneural junction & transmission
- Molecular basis of muscle contraction
- Motor unit, EMG
- Structure, Properties & Classification of nerves
- Propagation of nerve impulse.
- Degeneration and regeneration of nerve.
- Applied aspects Myasthenia gravis, Rigor mortis
- Reaction of degeneration
- Muscle disorders

<u>Unit III: Haematology</u>

• Composition and functions of blood

• Red blood cell – morphology, formation, normal count, functions, physiological and pathological variation.

• White blood cell – morphology, properties, functions, physiological & pathological variation

- Haemoglobin basic chemistry, fate and functions.
- Immunity definition, classification, concept of antigen & antibody
- Haemostasis steps, role of platelets
- Blood groups A,B,O,AB and Rh system
- Anemias, ESR & PCV
- Plasma proteins
- Anticoagulants
- Blood transfusion
- Haemophilia
- Thrombocytopenia

Unit IV: Cardiovascular system

- · General organization and properties of cardiac muscle
- Origin and conduction of cardiac impulse
- Cardiac cycle and heart sounds
- Normal heart rate, bradycardia, tachycardia
- Normal ECG

• Cardiac output- normal values, physiological variations, factors affecting cardiac out- put and regulation

- Blood pressure determinants, short term and long term regulation
- Regional circulation- Coronary, muscular, cerebral
- Functions of Lymph
- Pressure and volume changes during cardiac cycle
- Patho-physiology of circulatory shock and edema
- Hypertension, hypotension

• Hemodynamic

Unit V: Respiratory system

General organization of respiratory system

• Mechanics of respiration – Inspiratory and expiratory muscles, intrapleural pressure, lung & thoracic compliance, surfactant, lung volumes & capacities.

- Diffusion of gases
- Transport of respiratory gases
- Regulation of respiration
- Outline of hypoxia (types & physiological changes)
- Acclimatization to high altitude.
- Dead space, Ventilation/ perfusion ratio
- Maximum breathing capacity & breathing reserve
- Pulmonary function tests.
- Artificial respiration

Asphyxia, cyanosis (types and physiological changes)

Unit VI: Digestive System

- General organization
- Mastication and deglutition
- Saliva composition, functions and regulation salivary secretion
- Gastric secretion composition, mechanism, phases of secretion, regulation and functions.
- Outline of gastric emptying and peristalsis
- Pancreatic secretion composition, regulation functions.
- Liver and gall bladder composition and functions of bile
- Movements and functions of small and large intestine,
- Defecation reflex, constipation, diarrhea
- Jaundice
- Peptic ulcer

#### **RECOMMENDED BOOKS:**

TEVT DOOVE	1. Text book on Medical Physiology-By Guyton
IEAI BOOKS	2. Text book of physiology for physiotherapy – Prof. A. K Jain.
	3. Concise Medical Physiology – Sujit K. Chowdhuri
	1. Samson & Wrights Applied physiology.
<b>REFERENCE BOOKS</b>	2. Principles of Anatomy & Physiology – Tortora.
	3. Textbook of Medical Physiology – Indu Khurana
	4. Samson & Wrights Applied physiology.

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 150 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analyzed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## Human Physiology - I Lab

L P SPT SCT 0 2 3 0

MODULE CODE	PSIO1104
CREDIT POINTS	3
FORMATIVE ASSESMENT MARKS	12.5 (P) + 05 (SPT) = 17.5
SUMMATIVE ASSESMENT MARKS	25
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

#### **MODULE CONTENTS:**

1.	Haematology		
	Hb, RBC, WBC ,Blood groups, BT & CT		
2.	Prope	rties of muscles	
	1.	Skeletal muscle. SMC, effect of temperature, velocity of nerve conduction,	
		fatigue, tetanus, all or none law & effect of load.	
	2.	Cardiac muscle. Normal cardiogram, effect speed, temperature, Stannius	
		ligature, all or none law & incomplete tetanus, Nervous regulation of heart, vagal	
		escape. Effect of drugs (adrenaline & acetylcholine)	
3.	Other	L. Ds	
	•	Physical fitness- Cardiopulmonary efficiency tests	
	Stethography, Spirometry		
	•	Ergography, Perimetry	
	•	ECG	

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 42.5 marks.

#### Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	17.5
2	External Assessment	1	25

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

# **Electro Therapy - I**

L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1105
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

#### **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Able to recall physics principles and Laws of Electricity, Electro-magnetic spectrum, and ultra sound.
- 2. Able to describe effects of environmental & man made electro- magnetic field at the cellular level & risk factors on prolonged exposure.
- 3. Able to describe the main electrical supply, Electric shock & precautions-;
- 4. Able to describe in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc and the simple instruments used to test /calibrate these components [such as potentiometer, oscilloscope etc] of the circuitry, and will be able to identify such components.
- 5. Able to acquire knowledge of various superficial thermal agents such as Paraffin wax bath, Cryotherapy, homemade remedies, etc; their physiological and therapeutic effects, Merits/ demerits; and also acquire the skill of application.
- 6. Able to acquire knowledge of high frequency modalities, their basic physics, working, physiological and therapeutic effects

#### **MODULE CONTENTS:**

#### Unit I: BIOELECTRONICS

- Structure and properties of matter solids, liquids and gases, adhesion, surface tension,
- Viscosity, density and elasticity.
- Structure of atom, molecules, elements and compounds.
- Electron theory, static and current electricity.
- Conductors, Insulators, Potential difference, Resistance & Intensity.
- Ohm's Law Its application to AC & DC currents.
- Rectifying Devices Thermionic Valves, Semiconductors, Transistors,
- Amplifiers, Transducers Oscillator circuits.
- Capacitance, condensers in DC and AC Circuits.
- Display devices & indicators analogue & digital.
- Effects of Current Electricity:

• Chemical effects - Ions and electrolytes, Ionisation, Production of a E.M.F. by chemical actions.

• Magnetic effects, Molecular theory of Magnetism, Magnetic fields, Electromagnetic Induction, eddy currents, Mili ammeter and Voltmeter, Transformers and Choke Coil.

- Thermal Effects production.
- Physical Principles of sound and its properties.
- Physical Principles of light and its properties.
- Electromagnetic spectrum biophysical application.

• Laws of Transmission- absorption, attenuation

#### Unit II: ELECTRIC SUPPLY

- Brief outline of main supply of electric current.
- Dangers short circuits, electric shocks.
- Precautions safety devices, earthing, fuses etc.

• First aid & initial management of electric shock

#### Unit III: THERMO & ACTINOTHERAPY

• Physiological responses to heat gain or loss on various tissues of the body.

• Therapeutic effects of heat, cold

• Physical principles of Electro – magnetic radiation.

• Physics of sound including characteristics and propagation.

• Therapeutic cold (Cryotherapy)– biophysical effects, types, therapeutic effects, Indications, contraindications, application techniques and patient preparation.

• Thermotherapy modalities: parafine wax bath, contrast bath, whirl pool bath, moist heat therapy: principles of application, mode of application, therapeutic uses, indication and contraindication.

• Infra red rays – Wavelength, frequency, types & sources of IRR generation, techniques of irradiation, physiological & therapeutic effects, indications, contraindications, precautions,

• Operational skills of equipment preparation.

• Home remedies of heat and cold

## Unit IV: HIGH FREQUENCY CURRENTS AND WAVES

## High frequency currents (S.W.D.)

Production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.

## High frequency sound waves (Ultrasound)

Production, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, precautions, operational skills and patient preparation.

## Unit V: Traction

- Principles of traction, classification, types
- Physiological & therapeutic effects
- Indications, contraindications
- Techniques of application
- Operational skills & precautions

#### **RECOMMENDED BOOKS:**

TEVT DOOLS	1. Clayton's Electro therapy-3rd, 9th& 10thed,
2. Electro therapy explained –by Low & Reed	
	3. Principles and Practice of Electro Therapy –by Joseph Kahn
<b>REFERENCE BOOKS</b>	1. Clinical Electro Therapy-by Nelson & Currier
	2. Electrotherapy – Evidence Based Practice – Sheila Kitchen

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## ASSESSMENT METHODOLOGIES:

This subject will be evaluated for a total of 150 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

# Electro therapy - I Lab

L P SPT SCT 0 6 3 0

MODULE CODE	PSIO1106
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	37.5 (P) + 05 (SPT) = 42.5
SUMMATIVE ASSESMENT MARKS	75
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

## **MODULE CONTENTS:**

1.	Long Case:
	Superficial thermal agents/IR, Cold packs, Hot pack, wax bath.
2.	Short Case: any one of the following.
	SWD, US, Contrast Bath, Whirl pool Bath
3.	Spots + Journal
	5 Spots - (5 Minutes per Spot and four marks per spots)
	spots based on identification of electronic equipment & panel diagram of equipment etc.

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 117.5 marks.

#### Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	42.5
2	External Assessment	1	75

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## **Introduction to Computer Application**

L P SPT SCT 2 0 0 0

MODULE CODE	COAP0101
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

#### **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Able to apply the fundamentals of information systems used in business,
- 2. Able to demonstrates appropriate use of computers (hardware) and software applications (e.g. Microsoft Office Suite, Word processing, Cloud services, etc.) in a professional business environment.
- 3. Able to give oral presentations in a business environment, the student verbally organizes and communicates computer technology and technical concepts, processes, thoughts, ideas, and information effectively.
- 4. Able to identify, repair, and upgrade computer technology systems.
- 5. Able to solve an IT-related problem, the student applies critical thinking and problem-solving skills using experience gained from research assignments, individual and group projects, and troubleshooting processes and practices.

#### **MODULE CONTENTS:**

Historical evolution of computers, computer system concepts, capabilities and limitations. Types of computer: Analog, digital, hybrid, general purpose, special purpose, micro, mini, mainframe, super. Generations of computers. Type of PCs: Desktop, Laptop, Palmtop etc. their characteristics.

Computer security. Basic components of computer system: CPU, input/output and memory, their functions and characteristics. Memory: RAM, ROM, EPROM, PROM and other type of memory, keyboard, mouse, digitizing tablets, scanners, digital cameras, MICR, OCR, OMR, bar code reader, voice recognition, light pen, touch screen, input/output devices. Monitors: Analog, digital and characteristics-size, resolution, video standard-VGA, SVGA, XGA etc. Printers: Dot matrix, inkjet, laser, line printer, plotter, sound card and speakers. Various storage devices: Magnetic tape, magnetic disk, cartridge tape, hard disk device, floppy disk, optical disk-CD, VCD, CD-R, CDRW, DVD, zip drive. MS-Windows: Introduction to MS-windows, concept of GUI, desktop and its elements, windows explorer, control panel, accessories, running application under MS windows, advantages and limitation of windows. Various versions of windows like (Win 95, 98, Win ME, 2000 XP). Hardware requirement for Windows XP, Basic concept of MS word processor, MS excel, MS power point, features of word processing packages, MS excel packages, power point package. Internet: World Wide Web (WWW), concept, web browsing and electronic mail, concept of networking.

#### **RECOMMENDED BOOKS:**

	1. Introduction to Computer Application and Concepts Spiral-							
TEXT BOOKS	bound – 2014 by Misty E. Vermaat, Patrick Carey Gary B							
	Shally (Author).							
	2. —Computer Fundamentals" by Sinha P. K., BPB							
<b>REFERENCE BOOKS</b>	1Introduction to Computers and Basic Programming" by							
	Xavier, C New age International.							

#### METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 75 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	10
3.	Group Discussion	4	5
4.	End Semester Exam	1	50

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER-I**

## **Introduction to Computer Application Lab**

L P SPT SCT 0 2 0 0

MODULE CODE	COAP0102
CREDIT POINTS	1
FORMATIVE ASSESMENT MARKS	12.5
SUMMATIVE ASSESMENT MARKS	25
END SEMESTER EXAM DURATION	1.5 hrs
LAST REVISION DATE	

## **MODULE CONTENTS:**

Study of computer components, booting of computer and its shut down. Practicing windows operating system, use of mouse and keyboard, title bar, start menu, minimum, maximum and close buttons, scroll bars, menus and tool bars. Setting time and date, starting and shutting down of Window, windows explorer, creating file and folders, copy and paste functions. MSword: Introduction to MS word, creating a document, saving and editing, word proofing tools - using spelling checker, working with grammar checker, using thesaurus, working with auto text feature in word, using auto correct feature, word count, text formatting, document formatting (page formatting), alignment of text, creating tables, merging of cells, column and row width and chart in word, working with mail merge, graphics and web pages in word. MS power point: Introduction to MS power point, power point slide creation, slide show, editing, animation, adding a picture, adding graphics, formatting, customizing, printing and other inbuilt additional function. MS excel: Introduction to MS excel, creating a spread sheet, editing and saving. Working with toolbars, formatting, formulas, data management, graphs and chart, macros, goal seek pivot table, financial functions and other inbuilt additional function. Data analysis using inbuilt tool packs, correlation and regression. Internet Browsing: Browsing a web page and creating of E-mail ID.

## **METHODS OF TEACHING AND STUDENT LEARNING**

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 37.5 marks.

#### Practical

Assessment #	essment # Type Of Assessment Per Seme		Maximum Mark
1	Internal Assessment	2	12.5
2	External Assessment	1	25

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## French Language – Part 1

L P SPT SCT 2 0 0 0

MODULE CODE	LANF0101
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in French language and to enhance skills as mentioned below:

- 1. To prepare students to develop basic understanding on French language.
- 2. To acquire knowledge on French grammar.
- 3. To understand syntax and semantics of language.
- 4. To achieve an understanding on basic communication in French language.
- 5. To understand a dialogue between two native speakers and also take part in short, simple conversations using the skills acquired.

## **LEARNING OUTCOMES:**

- 1. Able to understand the basic grammar of French language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the basics of French language.
- 4. Able to understand the French history.

## **MODULE CONTENTS**

<u>UNIT I:- BASIC COMMUNICATION</u> – This module will develops oral and written skills of understanding, expressing and exchanging information / interacting on the topics given below: -

- Establish contact with someone
- Introduce self and others
- Greet, congratulate, and express condolences
- Spell
- Count
- Exchange simple information on self, preferences, feelings, plans, dreams
- Ask for information
- Tell the time
- Advice, order, suggest
- Buy, sell
- Make a reservation
- Order food or any article
- Invite, accept or refuse invitation
- Fix an appointment
- Locate a place
- Give directions
- Give chronological order of events
- Prepare an itinerary
- Ask for / Give explanations
- Describe a person, an object, an event, a place
- Describe the weather
- Compare

UNIT II: BASIC PHONETICS - This module will develop the ability in the students: -

• To pronounce words, say sentences, questions and give orders using the right accent and intonation.

• To express surprise, doubt, fear, displeasure and all positive or negative feelings using the right intonation

- To use \_liaison' and \_enchainment'
- To distinguish voiced and unvoiced consonants
- To distinguish between vowel sounds

<u>UNIT III: BASIC GRAMMAR & FORMATION OF SENTENCES</u> – This module will develops

the ability in the students to construct sentences and frame questions using: -

- Nouns gender and number
- Articles definite and indefinite, partitif, articles contractés
- Pronouns personal, relative (qui, que,où), y, en
- Verbs conjugation of regular and irregular verbs (affirmative and negative) in the following

tenses (indicative mood) – present, present continuous, simple future, immediate future, recent past, simple past, past continuous

- Verbs the imperative mood
- Adjectives numeric, qualitative, possessive, demonstrative, interrogative gender and number
- Adverbs simple adverbs of time, place, quantity
- Prepositions simple prepositions (place, time)
- Interrogation interrogative words, interrogative phrases, inversion

#### **RECOMMENDED BOOKS:**

	1. Nouveau Sans Frontières 1 by Philippe Dominique &							
TEXT BOOKS	Jacky Girardet							
	2 CONNEXIONS-1" by Regine Merieux & Yves Loiseau							
	Published by Didier.							
<b>REFERENCE BOOKS</b>	1. Five in one Multilingual Glossary, published by							
	Saraswati House Pvt. Ltd. New Delhi 2011.							

#### MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	a	b	с	d	e	f	g	h	i	j
Course Learning										12
Outcomes										1,2

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 75 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50

## **MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES**

#### Theory:

Assessments	1	2	3	4
Class Test	х	Х	Х	
Quiz	Х	Х	Х	
Assignment			Х	Х

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## German Language – Part 1

L P SPT SCT 2 0 0 0

MODULE CODE	LANG0102
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in German language and to enhance skills as mentioned below:

- 1. To prepare students to develop basic understanding on German language.
- 2. To acquire knowledge on German grammar.
- 3. To understand syntax and semantics of language.
- 4. To achieve an understanding on basic communication in German language.
- 5. To understand a dialogue between two native speakers and also take part in short, simple conversations using the skills acquired.

## **LEARNING OUTCOMES:**

- 1. Able to understand the basic grammar of German language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the basics of German language.
- 4. Able to understand the German history.

## **MODULE CONTENTS**

<u>UNIT I:- BASIC COMMUNICATION</u> – This module will develops oral and written skills of understanding, expressing and exchanging information / interacting on the topics given below: -

- Establish contact with someone
- Introduce self and others
- Greet, congratulate, and express condolences
- Spell
- Count
- Exchange simple information on self, preferences, feelings, plans, dreams
- Ask for information
- Tell the time
- Advice, order, suggest
- Buy, sell
- Make a reservation
- Order food or any article
- Invite, accept or refuse invitation
- Fix an appointment
- Locate a place
- Give directions
- Give chronological order of events
- Prepare an itinerary
- Ask for / Give explanations
- Describe a person, an object, an event, a place
- Describe the weather
- Compare

UNIT II: BASIC PHONETICS - This module will develop the ability in the students: -

• To pronounce words, say sentences, questions and give orders using the right accent and intonation.

• To express surprise, doubt, fear, displeasure and all positive or negative feelings using the right intonation

- To use \_liaison' and \_enchainment'
- To distinguish voiced and unvoiced consonants
- To distinguish between vowel sounds

UNIT III: BASIC GRAMMAR & FORMATION OF SENTENCES – This module will develops

the ability in the students to construct sentences and frame questions using: -

- Nouns gender and number
- Articles definite and indefinite, articles
- Pronouns personal, relative
- Verbs conjugation of regular and irregular verbs (affirmative and negative) in the following

tenses (indicative mood) – present, present continuous, simple future, immediate future, recent past, simple past, past continuous

- Verbs the imperative mood
- Adjectives numeric, qualitative, possessive, demonstrative, interrogative gender and number
- Adverbs simple adverbs of time, place, quantity
- Prepositions simple prepositions (place, time)
- Interrogation interrogative words, interrogative phrases, inversion

#### **RECOMMENDED BOOKS:**

	1. Tangram, Kursbuch und Arbeitsbuch, 1A, 1B & 2A, Max								
TEXT BOOKS	Hueber Verlag								
	2. Tangram, Kursbuch und Arbeitsbuch, 2B, 3A & 3B, M								
	Hueber Verlag								
<b>REFERENCE BOOKS</b>	1. em Abschlusskurs, Kursbuch und Arbeitsbuch, Max								
	Hueber Verlag								

#### MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	a	b	с	d	e	f	g	h	i	j
Course Learning										12
Outcomes										1,2

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 75 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50

#### MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES

#### Theory:

Assessments	1	2	3	4
Class Test	х	Х	Х	
Quiz	х	Х	Х	
Assignment			Х	Х

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-I**

## Spanish Language – Part 1

L P SPT SCT 2 0 0 0

MODULE CODE	LANS0103
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in Spanish language and to enhance skills as mentioned below:

- 1. To prepare students to develop basic understanding on Spanish language.
- 2. To acquire knowledge on Spanish grammar.
- 3. To understand syntax and semantics of language.
- 4. To achieve an understanding on basic communication in Spanish language.
- 5. To understand a dialogue between two native speakers and also take part in short, simple conversations using the skills acquired.

#### **LEARNING OUTCOMES:**

- 1. Able to understand the basic grammar of Spanish language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the basics of Spanish language.
- 4. Able to understand the Spanish history.

## **MODULE CONTENTS**

<u>UNIT I:- BASIC COMMUNICATION</u> – This module will develops oral and written skills of understanding, expressing and exchanging information / interacting on the topics given below: -

- Establish contact with someone
- Introduce self and others
- Greet, congratulate, and express condolences
- Spell
- Count
- Exchange simple information on self, preferences, feelings, plans, dreams
- Ask for information
- Tell the time
- Advice, order, suggest
- Buy, sell
- Make a reservation
- Order food or any article
- Invite, accept or refuse invitation
- Fix an appointment
- Locate a place
- Give directions
- Give chronological order of events
- Prepare an itinerary
- Ask for / Give explanations
- Describe a person, an object, an event, a place
- Describe the weather
- Compare

UNIT II: BASIC PHONETICS - This module will develop the ability in the students: -

• To pronounce words, say sentences, questions and give orders using the right accent and intonation.

• To express surprise, doubt, fear, displeasure and all positive or negative feelings using the right intonation

- To use \_liaison' and \_enchainment'
- To distinguish voiced and unvoiced consonants
- To distinguish between vowel sounds

<u>UNIT III: BASIC GRAMMAR & FORMATION OF SENTENCES</u> – This module will develops

the ability in the students to construct sentences and frame questions using: -

- Nouns gender and number
- Articles definite and indefinite, articles
- Pronouns personal, relative
- Verbs conjugation of regular and irregular verbs (affirmative and negative) in the following

tenses (indicative mood) – present, present continuous, simple future, immediate future, recent past, simple past, past continuous

- Verbs the imperative mood
- Adjectives numeric, qualitative, possessive, demonstrative, interrogative gender and number
- Adverbs simple adverbs of time, place, quantity
- Prepositions simple prepositions (place, time)
- Interrogation interrogative words, interrogative phrases, inversion

#### **RECOMMENDED BOOKS:**

TEXT BOOKS	1. Aula Internacional 1 and 2, Novellas and short stories
	2. Aula Internacional 3, España and Latinoamérica: Historia
	y Cultura, Novellas
<b>REFERENCE BOOKS</b>	1. Español sin fronteras, I, SGEL, 1997
	2. Nuevo Ven I, Edelsa 2004

## MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	a	b	с	d	e	f	g	h	i	j
Course Learning										1 2
Outcomes										1,2

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 75 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50

## MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES

#### Theory:

Assessments	1	2	3	4
Class Test	х	Х	Х	
Quiz	Х	Х	Х	
Assignment			Х	Х

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# Semester: II

SNO	MODULE	MODULE	MODULE TEACHING SCHEDULE PER WEEK			CREDITS	EVALUATION SCHEME			
		CODE	L	Р	SPT	SCT		INT.	EXT.	TOTAL
1	Environmental Science	ENVS0101	2	0	0	0	2.0	25	50	75
2	Human Anatomy-II	PSIO1107	4	0	0	0	4.0	50	100	150
3	Human Anatomy-II Lab	PSIO1108	0	4	3	0	3.0	25 (P)+ 5.0 (SPT)=30	50	80
4	Human Physiology-II	PSIO1109	4	0	0	0	4.0	50	100	150
5	Human Physiology-II Lab	PSIO1110	0	2	3	0	2.0	12.5 (P) +5.0 (SPT)=17.5	25	42.5
6	Electro therapy-II	PSIO1111	4	0	0	0	4.0	50	100	150
7	Electro therapy-II Lab	PSIO1112	0	6	3	0	4.0	37.5 (P) +5.0 (SPT)=42.5	75	117.5
8	Bio-chemistry	PSI01113	3	0	0	0	3.0	37.5	75	112.5
9	Foreign Language French German Spanish	LANF0104 LANG0105 LANS0106	2	0	0	0	2.0	25	50	75
		Total	19	12	9	0	28	327.5	625	952.5

L=Lecture; P=Practical; SPT= Specialized Practical Training; SCT= Specialized Clinical Training

Credit Equivalence: 1 lecture hrs. = 1 credit

2 practical hrs. = 1 credit

3 SPT / SCT hrs. = 1 credit

# **SEMESTER-II**

# Human Anatomy - II

L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1107
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

## **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. The student should be able to identify and describe anatomical aspects of muscle, bones & joints, & to understand and analyze movements of lower extremity.
- 2. To understand the anatomical basis of various clinical conditions e.g. trauma, deformities, pertaining to lower limbs & pelvis.
- 3. To be able to localize various surface landmarks.
- 4. To be able to demonstrate the movements of various joints of lower limb.
- 5. To be able to distinguish major arteries, veins and lymphatic with special emphases to extremities and pelvis.
- 6. To be able to identify and describe the source, course of major arterial, venous and lymphatic system, with special emphasis to lower extremities and pelvis.
- 7. To identify and describe various parts of Central Nervous System (C.N.S) Fore-brain, Midbrain,
- 8. To describe the source and course of spinal tracts.
- 9. To describe blood circulation of C.N.S. & spine.
- 10. Be able to identify the components of various Trans-sections.

## **MODULE CONTENTS:**

#### Unit I: Neuro- anatomy

Peripheral Nerves, Neuromuscular Junction, Sensory End Organs, Spinal Cord Segments & Areas, Brainstem, Cerebellum, Inferior colliculi, Superior Colliculi, Diencephalon, Hypothalamus, Epithalamus, Thalamus, Cerebral hemispheres, Corpus striatum, Rhinencephalon, Lateral ventricles, Meninges, Bloody supply of the brain, Internal Capsule, Visual radiation, Auditory radiation, Thalamocortical radiations, Pyramidal systems, Extrapyramidal systems, Sympathetic system, Para-sympathetic system, Cranial nerves.

## Unit II: TRUNK & ABDOMEN

Osteology, Vertebral columns: Identify the parts of typical vertebra and state the main features, attachments and ossification, Intervertebral disc and mention its part, Myology, Fascia and muscles of back, Fascia and muscles connecting U/L with vertebral column: origin, insertion, nerve supply, action, Fascia and muscles of post Abdominal Wall: origin, insertion, nerve supply and action: Mention the course and branches and nerves, blood vessels and lymphatic drainage of, Trunk & abdomen: Lumbar Plexus: Position, formation and branches, Rectus sheath: formation and contents, Contents of vertebral canal, Applied Anatomy of structures of trunk & abdomen.

## <u>Unit III: PELVIS</u>

Features of pubic symphysis and sacroiliac joints, Muscles of pelvic floor and mention their attachments, action and nerve supply, Difference between male and female pelvis, Main features of subdivision, boundaries, walls and floor of pelvis, Urogenital diaphragm (outlines only), Applied anatomy of lumbar plexus, Lymphatic drainage, Nerve supply, Sacral Plexus, Mention the blood vessels of the region with course, variations, distribution and main branches.

## Unit IV: LOWER EXTRIMITY (Osteology)

Hip bone, femur, Tibia, Fibula, Patella, and bones of the foot, Myology-,-Origin, Insertion, Nerve Supply, Action of the following:

- Fascia and muscles in anterior of thigh
- Fascia and muscles of medial side of thigh
- Fascia and muscles of posterior of thigh
- Fascia and muscles of gluteal region Fascia and muscles of lateral side of leg
- Fascia and muscles of back of leg and sole of foot

Detailed explanation of joints of Lower Limb: Pelvic Girdle, Hip, joint, Knee joint, Ankle joint, joints of foot, Identify the nerves of Lower Limb and mention their position course, relations distribution, Indicate the blood vessels of Lower Limb a mention their position course, relation, distribution and main branches, Lymphatic drainage of Lower Limb, Explain femoral triangle and subsartorial canal, Poptileal fossa, Anatomy of structures of Lower Limb.

## Unit V: REGIONAL ANATOMY

Radiographic appearance of Musculo-skeletal system of Upper limb, Lower limb, Spine.

**Surface Anatomy:** Bony landmarks of HNF, upper extremity, lower extremity, spine; Demonstration of muscles – HNF, superior extremity, inferior extremity, Demonstration of movements of joints, Palpation of peripheral arteries & nerves.

#### **RECOMMENDED BOOKS:**

	1. Williams & Warwick, Gray's Anatomy-Churchill Livingstone.		
	2. Inderbir Singh, Textbook of Anatomy with colour Atlas-Vol. 1,		
	2, 3 Jaypee Brothers.		
	3. B.D. Chaurasia, Human Anatomy-Volume 1, 2, 3 CBS		
	Publishers & Distributors.		
TEXT BOOKS	4. Mcminn's Last's Anatomy-Regional and applied, Churchill		
IEAI BOOKS	Livingstone.		
	5. Cunningham Manual of Practical Anatomy Vol. I, II, III,		
	Churchill Livingstone.		
	6. Inderbir Singh, A Textbook on Human NeuroAntomy, Jaypee		
	Brothers.		
	7. Snell-Clinical Anatomy-Lippincott.		
	8. Mcminn's et al-A Colour Atla s of Human Anatomy, Mosby.		
	1. Gray's Anatomy		
<b>REFERENCE BOOKS</b>	2. Extremities by Quining Wasb		
	3. Anatomy & Physiology by Smout and McDowell		
	4. Kinesiology by Katherine Wells [Saunders co.]		

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 150 marks for theory.

#### **Theory:**

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER-II**

## Human Anatomy - II Lab

# L P SPT SCT 0 4 3 0

MODULE CODE	PSIO1108
CREDIT POINTS	3
FORMATIVE ASSESMENT MARKS	25 (P) + 05 (SPT) = 30
SUMMATIVE ASSESMENT MARKS	50
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

#### **MODULE CONTENTS:**

#### Spots

- 1. 2 Spots based on Urogenital/Reproductive/special senses/Cardiovascular system
- 2. 3 Spots based on Soft part of Thorax/neck
- 3. 3. 5 Spots based on upper extremity

## Viva + Journal

- 1. Soft Parts
- 2. Osteology

#### METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 80 marks.

#### Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	30
2	External Assessment	1	50

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-II**

# Human Physiology - II

## L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1109
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

## **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis].
- 2. Be able to describe physiological functions of various systems, with special reference to Neuromotor, Female uro-genital function and alterations in function with aging.
- 3. Acquire the skill of basic clinical examination, with special emphasis to Peripheral and Central Nervous system.

## **MODULE CONTENTS:**

#### Unit I: Renal Physiology

- General introduction, structure and functions of kidney
- Formation of urine- filtration, re-absorption and secretion
- Physiology of micturition
- Renal circulation
- Plasma clearance test
- Neurogenic bladder
- Automatic bladder

## Unit II: Body Temperature regulation

- Normal body temperature & its regulation
- Hypothermia, hyperthermia
- Skin-structure and functions

# Unit III: Endocrine system

- Introduction General organization of endocrine glands
- Releasing hormones from hypothalamus
- Anterior & Posterior pituitary hormones physiological actions, regulation & disorders
- Thyroid Hormones physiological actions, regulation & disorders
- Parathyroid Hormones physiological actions, regulation & disorders
- Adrenal cortex & medulla- physiological actions, regulation& disorders
- Pancreatic hormones physiological actions, regulation & disorders

# Unit IV: Mechanism of hormone action

- Functional anatomy of reproductive system
- Puberty, changes in males and females, menarche, menopause
- Spermatogenesis stages and regulation, Physiological actions of testosterone
- Menstrual cycle and ovarian cycles phases and hormonal regulation, ovulation
- Physiology of pregnancy lactation initiation, maintenance and control,
- Functions of placenta
- Pregnancy tests
- Sex chromosomes
- Precocious and delayed puberty

## Unit V: Organization of nervous system

- General organization of respiratory system
- Receptors definition, classification and functions
- Synapse definition, physiological anatomy, synaptic transmission
- Reflexes classification, properties and functions
- Spinal cord ascending and descending tract and functions
- Ascending tracts sensations carried, pathways and functions
- Descending tract Origin, course and termination and functions
- Pain sensation types of pain, pathways for conduction of pain, referred pain, central analgesia system
- Posture & equilibrium, Vestibular apparatus
- Thalamus Functions
- Hypothalamus functions
- Cerebellum functions, effects of lesion
- Basal ganglia functions, effects of lesion, Parkinsonism
- Muscle tone
- Cerebral cortex Gross anatomy and division, functions of each lobe
- Autonomic nervous system Organization & functions of parasympathetic, sympathetic system and functions
- CSF Composition, formation, circulation, functions & Blood brain barrier- Applied aspects

• Differences between Upper Motor Neuron and Lower Motor Neuron lesions

# Unit VI: Vision

- Vision Structure of eye ball, retina, refractory errors,
- Accommodation, visual pathway, Pupillary reflexes
- Light and dark adaptation
- Photochemistry of vision
- Ear
- Functional anatomy of ear
- Functions of middle ear, Functional anatomy of cochlea & functions of inner ear
- Audiometry
- Auditory pathway
- Physics of sound
- Theories of hearing
- Taste & smell
- Functional anatomy, factor affecting.

#### **RECOMMENDED BOOKS:**

TEVT DOOVE	1. Text book on Medical Physiology-By Guyton
IEAI BOOKS	2. Text book of physiology for physiotherapy – Prof. A. K Jain.
	3. Concise Medical Physiology – Sujit K. Chowdhuri
<b>REFERENCE BOOKS</b>	1. Samson & Wrights Applied physiology.
	2. Textbook of Medical Physiology – Indu Khurana

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 150 marks for theory.

#### **Theory:**

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analyzed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-II**

# Human Physiology - II Lab

L P SPT SCT 0 2 3 0

MODULE CODE	PSIO1110
CREDIT POINTS	3
FORMATIVE ASSESMENT MARKS	12.5 (P) + 05 (SPT) = 17.5
SUMMATIVE ASSESMENT MARKS	25
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

## **MODULE CONTENTS:**

## Lecture demonstrations & Practical (L.Ds)-

- a) Clinical examination of arterial pulse.
- b) Determination of arterial blood pressure.
- c) Clinical examination of cardiovascular system.
- d) Clinical examination of respiratory system.
- e) Clinical examination of higher functions.
- f) Clinical examination of sensory system.
- g) Clinical examination of motor system -I.
- h) Clinical examination of motor system -II
- i) Clinical examination of all cranial nerves.

# **Clinical physiology**

- 1. Respiration clinical examination of respiratory system
- 2. CVS- pulse B.P. clinical examination of CVS
- 3. Cranial nerves
- 4. Reflexes
- 5. Motor and Sensory system

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 42.5 marks.

## Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	17.5
2	External Assessment	1	25

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-II**

# **Electro Therapy - II**

L P SPT SCT 4 0 0 0

MODULE CODE	PSIO1111
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	50
SUMMATIVE ASSESMENT MARKS	100
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

## **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- Describe the Production & Physiological effects, Therapeutic uses, merits, demerits indication &contraindications of various low/medium Frequency Currents modes.
- 2. Describe the Physiological effects & therapeutic uses of various therapeutic ions & Topical Pharmacotherapeutic agents to be used for the application of Iontophoresis & sono/phonophoresis
- 3. Acquire the skill of Application of the Electro therapy modes like UVR and LASER on models, for the purpose of Assessment &Treatment.
- 4. Acquire an ability to select the appropriate mode as per the tissue specific & area specific application.

## **MODULE CONTENTS:**

<ul> <li><u>Unit I: Low frequency currents</u></li> <li>Physiological effects, therapeutic uses, indications and contraindications of faradic type current, intermittent galvanic current and galvanic current</li> <li>Cathodal /Anodal Galvanism, Iontophoresis – with various ions &amp; therapeutic drugs.</li> <li>Electrical stimulation for re-education – short /long pulse motor points</li> <li>Strong surged faradic current under pressure /elevation.</li> </ul>	and dangers
<ul> <li><u>Unit II: Electrical Reactions and Electro – diagnostics</u></li> <li>Electrical Reactions and Electro – diagnostic tests: Electrical Stimuli behavior of Nerve and muscle tissue.</li> <li>Types of lesion and development of reaction of degeneration.</li> <li>Faradic – Intermittent direct current test.</li> <li>S.D. Curve and its application and characterstics, Chronaxie, Rheobase&amp; p</li> <li>High voltage pulsed galvanic current</li> <li>TENS: Define, Principles of production, types, dosage, electrode Physiological and therapeutic effects, indication and contraindications.</li> <li>Micro –currents</li> <li>Didynamic currents</li> </ul>	and normal oulse ratio placement,
<ul> <li><u>Unit III: Medium frequency currents</u></li> <li>Interferential therapy: Define, Principles of production, static Interferer dynamic interference system, dosage, electrode placement, Physio therapeutic effects, indication and contraindications.</li> <li>Russian currents</li> <li>Rebox type currents</li> </ul>	ntial system, logical and
<u>Unit IV: Ultra – violet rays (UVR)</u>	
Wavelength, frequency, types & sources of UVR generation, techniques of irradiation, & therapeutic effects, indications, contraindications, precautions, operational skills of patient preparation. Dosimetry of UVR.	physiological equipment &
Unit V: Light Amplification of stimulated Emission of Radiation (LASER)	
Definition, historical background, physical principles, biophysical effects, types, therapeutic effects, techniques of application, indications, contraindications, operational skills and patient preparation.	production, precautions,

## **RECOMMENDED BOOKS:**

	1. Clayton's Electro therapy
TEXT BOOKS	2. Electro therapy explained –by Low & Reed
	3. Electro Therapy – by Kahn
	4. Therapeutic Electricity – by Sydney Litch
REFERENCE BOOKS	Clinical Electro Therapy-by Nelson & Currier

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 150 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	10
2.	Sessional Test	2	30
3.	Group Discussion	4	10
4.	End Semester Exam	1	100

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER-II**

## **Electro therapy - II Lab**

L P SPT SCT 0 6 3 0

MODULE CODE	PSIO1112
CREDIT POINTS	4
FORMATIVE ASSESMENT MARKS	37.5 (P) + 05 (SPT) = 42.5
SUMMATIVE ASSESMENT MARKS	75
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

#### **MODULE CONTENTS:**

Practicals based on theory paper Electro therapy – II.

#### METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 117.5 marks.

#### Practical

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1	Internal Assessment	2	42.5
2	External Assessment	1	75

#### **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

# **SEMESTER-II**

# **Biochemistry**

L P SPT SCT 3 0 0 0

MODULE CODE	PSIO1113
CREDIT POINTS	3
FORMATIVE ASSESMENT MARKS	37.5
SUMMATIVE ASSESMENT MARKS	75
END SEMESTER EXAM DURATION	3 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** The Question paper will comprise of seven questions distributed over three sections A, B and C. Section A comprises of very short answer type questions and is compulsory. Section B and Section C Comprise of short answer type and Long answer type questions and will have internal choices.

## **LEARNING OUTCOMES:**

At the end of the course, the candidate will be-

- 1. Be able to describe structures & functions of cell in brief.
- 2. Be able to describe normal functions of different components of food, enzymes,
- 3. Define Basal Metabolic Rate & factors affecting the same with special reference to obesity.
- 4. Be able to discuss nutritional aspects of carbohydrates, lipids, proteins & vitamins & their metabolism with special reference to obesity.
- 5. Define enzymes; discuss in brief, factors affecting enzyme activity.
- 6. Describe in details biochemical aspects of muscle contraction.
- Acquire knowledge in brief about the Clinical biochemistry, with special reference to Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbo-hydrates, proteins, bone minerals, and electrolyte balance.

# **MODULE CONTENTS:**

# Unit I: CELL BIOLOGY & CARBOHYDRATES

- Membrane, structure & function
- Junction of intracellular organelle in brief- [no structural details needed]
- Metabolism-Digestion and absorption of carbohydrates, Glycolysis- aerobic, anaerobic & its regulation
- Kreb's cycle &its regulation
- Glycogenesis, glycogenolysis& their regulation, role of liver in muscle glycogen
- Glyconeogenesis, significance of H.M.P. shunt
- Hormonal regulation of blood sugar levels, Important metabolic disorders of glycogen, lactose intolerance, Diabetes mellitus.

• Clinical biochemistry: Relevance of blood levels of glucose, Glycosuria

# Unit II: PROTEINS & LIPIDS

- Chemistry-definition-classification-[including fatty acids with examples]-function
- 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.
- Clinical Biochemistry Lipid profile-Tri -glyceride, cholesterol/HDL/LDL/VLDL etc, Liver function test & Renal function test
- Phospholipid synthesis

# Unit III: NUCLEIC ACIDS, ENZYMES & VITAMINS

- D.N.A. /R.N.A.-definition-structure and function-types-Genetic code-catabolism of purine –gout
- Definition-Co-Enzymes, modern classification, factors affecting enzymes action
- Iso-enzymes
- Clinical and therapeutic use of enzymes:
- Clinical relevance: Enzymes-Amylase, CPK, LDH, isoenzymes
- Inhibition and types of inhibitors
- Water and fat soluble-definition-classification
- Individual vitamins-sources-Co-enzyme forms- function
- RDA, absorption and transport-deficiency and toxicity

## Unit IV: BIOLOGICAL OXIDATION, MINERALS & ACID

- Oxidative phosphorylation & ETC in brief.
- Phosphate, calcium and iron [in detail]
- Magnesium, Flouride, Zinc, Copper, Selenium Molybdenum, Iodine-sources, absorption, transport-excretion, functions and deficiency
- Clinical Biochemistry-Relevance of blood levels of Ca, phosphate & Iron
- Body water, pH-osmolarity Extra and Intra cellular fluid.
- Buffers-pH, buffer system in blood.
- Role of kidneys & lungs in acid-base balance.
- Water- electrolyte balance imbalance-dehydration.

## Unit V: MUSCLE CONTRACTION, CONNECTIVE TISSUE & NUTRITION

- Contractile elements
- Biochemical events during contraction
- Energy metabolism in skeletal & cardiac muscle
- Biochemistry of connective tissue-collagen Glyco-protein proteoglycans
- Importance of nutrition
- Basal metabolic rate definition normal values-factors affecting BMR
- energy requirement with age/sex/ thermogenesis specific dynamic action of food,energy expenditure for various activities
- Composition of food, balanced Diet, dietary recommendations, nutritional supplementation nutritional value of carbohydrates/proteins/fats & Fibers,
- Nitrogen balance & its significance, Protein energy malnutrition Kwashiorkor & Marasmus

## **RECOMMENDED BOOKS:**

	1. Biochemistry-by Dr. Deb Jyoti Das					
TEXT BOOKS	2. Biochemistry-by-Dr. Satyanarayan					
	3. Text book of Biochemistry for Medical students by-Dr					
	Vasudevan/ Shrikumar					
<b>REFERENCE BOOKS</b>	Review of Biochemistry [26 <sup>th</sup> edition] by Harper.					

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 112.5 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	4	07
2.	Sessional Test	2	25
3.	Group Discussion	4	5.5
4.	End Semester Exam	1	75

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER - II**

# L T P 2 0 0

# French Language – Part 2

Pre-requisite - French Language - Part 1

MODULE CODE	LANF0104
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	75 (Written – 50, Oral – 25)
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

units.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in French language and to enhance skills as mentioned below:

- 1. To prepare students to develop advance understanding on French language.
- 2. To acquire the command over the French grammar.
- 3. To read and write short, simple texts.
- 4. To enable learner to build logic in French language.
- 5. To make students aware of the French culture, customs & traditions.

## **LEARNING OUTCOMES:**

- 1. Able to understand the advance grammar of French language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the advance of French language.
- 4. Able to understand the French history.

UNIT I: MODERATE COMMUNICATION - This module will sharpen the communicative

## **MODULE CONTENTS**

**REFERENCE BOOKS** 

skills already acquired in the PART 1 - BASIC COMMUNICATION and further builds on them. It develops oral and written skills of understanding, expressing and exchanging information / interacting on the topics given below: -• Describe in detail people, relationships, events, places, cultures of countries • Compare people, relationships, events, places, cultures and the changes that they have undergone • Apply for a job • Exchange personal and professional information • Express opinion on people, places, events encountered in one's personal life and on press articles, television programmes, multimedia, films, and books • Argue, justify and substantiate a point of view • Describe hypothetical or imaginary situations • Express plans, dreams, aspirations of the future • Paragraph writing Professional communication UNIT II: MODERATE PHONETICS - This module will re-enforces all the notions introduced in the PART 1- BASIC PHONETICS. UNIT III: MODERATE GRAMMAR - This module will sharpen the concepts introduced in the PART 1 - BASIC GRAMMAR & FORMATION OF SENTENCES and further develops the following linguistic skills: -• Pronouns – relative (don't), possessive, indefinite, demonstrative and the use of double pronouns • Verbs – conjugation of regular and irregular verbs (affirmative and negative) in the following tenses (indicative mood) – past perfect, future perfect • Verbs – the subjunctive mood (past and present) • Verbs – conditional (past and present) and gerund forms, • Adverbs of time, place, quantity and indefinite adverbs • Direct/indirect speech • Comparative and superlative structures • Active/passive structures • Multiple clause sentences – independent clauses joined by co-ordinating conjunctions, dependant clause (subordinate clause) • Phrases to express cause, consequence, and objective **RECOMMENDED BOOKS:** 1. Nouveau Sans Frontières 1 by Philippe Dominique & Jacky Girardet **TEXT BOOKS** 2. - CONNEXIONS-1" by Regine Merieux & Yves Loiseau Published by Didier.

Five in one Multilingual Glossary, published by

Saraswati House Pvt. Ltd. New Delhi 2011.

## MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	a	b	c	d	e	f	g	h	i	j	k
Course Learning										12	34
Outcomes										1,2	Э,т

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

#### **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 100 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50
4.	End Semester Oral Exam	1	25

## MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES

#### Theory:

Assessments	1	2	3	4
Class Test	Х	Х	х	
Quiz	Х	Х	Х	
Assignment			Х	х

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and

• Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER - II**

# L T P 2 0 0

#### **German Language – Part 2 Pre-requisite -** German Language – Part 1

MODULE CODE	LANG0105
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	75 (Written – 50, Oral – 25)
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

# **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in German language and to enhance skills as mentioned below:

- 1. To prepare students to develop advance understanding on German language.
- 2. To acquire the command over the German grammar.
- 3. To read and write short, simple texts.
- 4. To enable learner to build logic in German language.
- 5. To make students aware of the German culture, customs & traditions.

## **LEARNING OUTCOMES:**

- 1. Able to understand the advance grammar of German language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the advance of German language.
- 4. Able to understand the German history.

# **MODULE CONTENTS**

<b>REFERENCE BOOKS</b>	Verlag
TEXT BOOKS	<ol> <li>Tangram, Kursbuch und Arbeitsbuch, 1A, 1B &amp; 2A, Max Hueber Verlag</li> <li>Tangram, Kursbuch und Arbeitsbuch, 2B, 3A &amp; 3B, Max Hueber Verlag</li> <li>em Abschlusskurs, Kursbuch und Arbeitsbuch Max Hueber</li> </ol>
RECOMMENDED BOOKS:	
• Phrases to express cause, o	consequence, and objective
dependant clause (subordina	ate clause)
• Multiple clause sentences	– independent clauses joined by co-ordinating conjunctions,
Active/passive structures	
Comparative and superlati	ve structures
• Direct/indirect speech	
• Adverbs of time, place, qu	antity and indefinite adverbs
• Verbs – conditional (past a	and present) and gerund forms,
• Verbs – the subjunctive m	ood (past and present)
tenses (indicative mood) – r	bast perfect, future perfect
• Verbs – conjugation of res	gular and irregular verbs (affirmative and negative) in the following
pronouns	<i>j</i> , possessive, indefinite, demonstrative and the use of double
• Pronouns relative (don't	15
TAKI I - BASIC GRAM	WAK & FURIMATION OF SENTENCES and further develops
UNIT III: MODERATE GR.	$\underline{AMMAR}$ – This module will sharpen the concepts introduced in the
in the PART 1- BASIC PH	ONETICS.
UNIT II: MODERATE PHO	<u>DNETICS</u> – This module will re-enforces all the notions introduced
Professional communication	on
• Paragraph writing	
• Express plans, dreams, ast	pirations of the future
• Describe hypothetical or in	maginary situations
• Argue justify and substan	nes, multimedia, films, and books
• Express opinion on people	e, places, events encountered in one's personal life and on press
• Exchange personal and pro	ofessional information
Apply for a job	
undergone	mps, events, places, cultures and the enanges that they have
Describe in detail people,     Compare people, relations	relationships, events, places, cultures of countries
information / interacting on	the topics given below: -
them. It develops oral and w	vritten skills of understanding, expressing and exchanging
skills already acquired in th	e PART 1 - BASIC COMMUNICATION and further builds on
UNIT I: MODERATE COM	MUNICATION – This module will sharpen the communicative

## MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	a	b	c	d	e	f	g	h	i	j	k
Course Learning										12	34
Outcomes										1,2	Э,т

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 100 marks for theory.

#### Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50
4.	End Semester Oral Exam	1	25

## MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES

#### Theory:

Assessments	1	2	3	4
Class Test	Х	Х	х	
Quiz	Х	Х	Х	
Assignment			Х	х

## **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and

• Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.

## **SEMESTER - II**

# L T P 2 0 0

#### **Spanish Language – Part 2 Pre-requisite -** Spanish Language – Part 1

MODULE CODE	LANS0106
CREDIT POINTS	2
FORMATIVE ASSESMENT MARKS	25
SUMMATIVE ASSESMENT MARKS	75 (Written – 50, Oral – 25)
END SEMESTER EXAM DURATION	2 hrs
LAST REVISION DATE	

**INSTRUCTIONS:** All questions are compulsory. Each question may have multiple options and will cover all units.

units.

## **OBJECTIVES:**

The aim of this subject is to develop understanding on different aspects related to oral and written skills of expressing and exchanging information / interacting in Spanish language and to enhance skills as mentioned below:

- 1. To prepare students to develop advance understanding on Spanish language.
- 2. To acquire the command over the Spanish grammar.
- 3. To read and write short, simple texts.
- 4. To enable learner to build logic in Spanish language.
- 5. To make students aware of the Spanish culture, customs & traditions.

## **LEARNING OUTCOMES:**

- 1. Able to understand the advance grammar of Spanish language and differentiation of genders and objects.
- 2. Exposure to various syntax & communication methods with others.
- 3. Ability to read, write, speak & listen the advance of Spanish language.
- 4. Able to understand the Spanish history.

## **MODULE CONTENTS**

UNIT I: MODERATE	<u>E COMMUNICATION</u> – This module will sharpen the communicative skills
already acquired in th	ne PART 1 - BASIC COMMUNICATION and further builds on them. It
develops oral and wr	itten skills of understanding, expressing and exchanging information / interacting
on the topics given b	elow: -
• Describe in detail p	eople, relationships, events, places, cultures of countries
• Compare people, re	lationships, events, places, cultures and the changes that they have undergone
• Apply for a job	
• Exchange personal	and professional information
• Express opinion on	people, places, events encountered in one's personal file and on press articles,
• Argue justify and s	ubstantiate a point of view
• Describe hypothetic	abstantiate a point of view
• Express plans drea	ms aspirations of the future
• Paragraph writing	
Professional comm	unication
UNIT II: MODERAT	<u>E PHONETICS</u> – This module will re-enforces all the notions introduced in the
PART 1- BASIC PH	IONETICS.
UNIT III: MODERAZ	TE GRAMMAR – This module will sharpen the concepts introduced in the <b>PART</b>
1 - BASIC GRAMM	IAR & FORMATION OF SENTENCES and further develops the following
linguistic skills: -	
• Pronouns – relative	(don't), possessive, indefinite, demonstrative and the use of double pronouns
• Verbs - conjugation	n of regular and irregular verbs (affirmative and negative) in the following tenses
(indicative mood) – r	bast perfect, future perfect
• Verbs – the subjunc	tive mood (past and present)
• Verbs – conditional	(past and present) and gerund forms.
• Adverbs of time nl	ace quantity and indefinite adverbs
Direct/indirect spee	ch
Comparative and su	unarlativa structuras
• Comparative and se	
• Active/passive struc	
• Multiple clause sen	tences – independent clauses joined by co-ordinating conjunctions, dependant
clause (subordinate c	lause)

# TEXT BOOKS 1. Aula Internacional 1 and 2, Novellas and short stories 2. Aula Internacional 3, España and Latinoamérica: Historia y Cultura, Novellas REFERENCE BOOKS 1. Español sin fronteras, I, SGEL, 1997 2. Nuevo Ven I, Edelsa 2004

# MAPPING OF COURSE LEARNING OUTCOMES

Program Outcomes	а	b	с	d	e	f	g	h	i	j	k
Course Learning										12	34
Outcomes										1,2	5,1

## METHODS OF TEACHING AND STUDENT LEARNING

The subject is delivered through lectures, on-line support, text book / course material reading and practical exercises. Some videos will be shown to demonstrate certain concepts and research areas will be discussed. Resource material is provided with the help of PDM Educational Directory Services (PEDS).

## **ASSESSMENT METHODOLOGIES:**

This subject will be evaluated for a total of 100 marks for theory.

## Theory:

Assessment #	Type Of Assessment	Per Semester	Maximum Mark
1.	Class Test	1	10
2.	Sessional Test	2	15
3.	End Semester Written Exam	1	50
4.	End Semester Oral Exam	1	25

## MAPPING OF ASSESSMENT METHODS AGAINST THE LEARNING OUTCOMES Theory:

#### Theory:

Assessments	1	2	3	4
Class Test	Х	Х	Х	
Quiz	Х	Х	Х	
Assignment			X	Х

# **EVALUATION**

- Problems encountered in the content delivery;
- Suggested remedies / corrective measures;
- Approved refinement decisions due for implementation;
- Actions taken based on previous course review; and
- Report discussed and analysed; actions taken as a result of this process and are communicated to the main stakeholders.