

**CENTRAL UNIVERSITY OF RAJASTHAN**

**DEPARTMENT OF YOGA**

**Syllabus**

**MSc (Yoga Therapy)**

**2 Years Programme**

**PREAMBLE**

Yoga is a combination of physical, mental, and spiritual practices originated in ancient India. Currently it is practiced for promotion of health, prevention of diseases and also used as a tool for managing Non-Communicable Diseases (NCD) and popularly known as Yoga therapy. It is a growing field and scientific evidence has started demonstrating its efficacy in a wide range of Psychosomatic and NCD's. It involves employing a variety of yoga practices to improve the health condition. It is based on classical Yoga texts, scriptures and evidence based researches. Therapeutic yoga is an inherently holistic in approach as it works on the body, mind, and spirit. Master of Science in Yoga Therapy Programme is designed to study, understand, enumerate and apply the fundamentals of integral health, which includes the physical, emotional, social, mental and spiritual aspects of well-being through Yoga.

**OBJECTIVES:-**

The 2-Yr M.Sc. programme in Yoga Therapy has been designed with the following objectives:

- To impart to the students the knowledge of teachings and philosophy of yoga tradition.
- To impart to the students the knowledge of human anatomy and physiology and understanding of pathogenesis of diseases and their management in Yoga therapy.
- To provide the knowledge of various Yoga therapy practices like asana (posture), pranayama (voluntarily regulated breathing techniques), meditation and relaxation techniques, counseling and basic dietary concepts with their implication.
- To Train the students to handle a client and administer yoga therapy under the supervision of a Specialized Medical practitioner.
- To train the students in Yoga Therapy so that they can integrate the Yoga therapy with different systems of medicine and clinical settings.
- To produce Yoga Therapists of high caliber with in-depth understanding of basic sciences and holistic health techniques.

- To enable the students to develop the communication skills and computer skills and applications in Yoga science.

## **DURATION OF THE PROGRAMME**

Four semesters in two years

## **ADMISSION PROCEDURE**

The admission to this programme shall be through Central universities common entrance test (CUCET) to be conducted on all-India basis.

## **ELIGIBILITY OF THE CANDIDATES**

Bachelor's Degree in any discipline of Science with not less than 50% marks or equivalent grade in aggregate from a recognized University. Up to 5% relaxation in the minimum requirement of marks is granted to SC/ST/OBC/PWD candidates.

## **STUDY OUTCOMES:**

Following the completion of M.Sc. Yoga Therapy programme Students should be able to demonstrate the:

- Knowledge of different yoga tradition, their philosophy and practical implications of these teaching for holistic growth.
- Knowledge of human anatomy, physiology and pathology of different ailments.
- Knowledge of wellbeing, health and disease based on traditional theories of yoga, Ayurveda and vedic science.
- Knowledge of the interconnections between the body, mind, emotions, Social, cultural in the context of maintaining and promoting health and wellbeing.
- Ability to deliver holistic yoga classes in group as per the requirement of various populations or group.
- Ability to teach disease based yoga therapy to clients. Also know the indications and contraindications of different yoga practices in different ailments.
- Skills to integrate yoga therapy with different systems of medicine and settings.

## Semester – I

S. No.	Course Code	Course Title	Credits	Type of Course
1	MSYT 101	Principles and Practice of Yoga Therapy	4	Core 1
2	MSYT 102	Essentials of Anatomy and Alignment principles in Yoga Therapy	4	Core 2
3	MSYT 103	Essentials of Physiology in Yoga Therapy	4	Core 3
4	MSYT 104	Basics of Sanskrit	3	Core 4
5	MSYT 105	Discipline Specific Elective -I	4	DE1
5	MSYT 106	Yoga Practicum-I	3	P1
6	MSYT 107	Alignment Principles in Yoga postures and Practical Physiology	2	P2
Total number of Credits			24	

## Semester – II

S. No.	Course Code	Course Title	Credits	Type of Course
1	MSYT 201	Therapeutics in Classical Yoga	4	Core 5
2	MSYT 202	Essentials of Nutrition and Dietetics in Yoga Therapy	3	Core 6
3	MSYT 203	Yoga Therapy for Specific Common Ailments - I	4	Core 7
4	MSYT 204	Discipline Specific Elective - II	4	DE2
5	MSYT 205	Discipline Specific Elective - III	4	DE3
6	MSYT 206	Yoga Practicum - II	3	P3
7	MSYT 207	Yoga Therapy techniques - I	2	P4
Total number of Credits			24	

### Semester – III

S. No.	Course Code	Course Title	Credits	Type of Course
1	MSYT 301	Therapeutics in Hatha Yoga	4	Core 8
2	MSYT 302	Yoga Therapy for Specific Common Ailments - II	3	Core 9
3	MSYT 303	Discipline Specific Elective - IV	4	DE4
4	MSYT 304	Discipline Specific Elective - V	4	DE5
5	MSYT 305	Elective - I	4	E1
6	MSYT 306	Yoga Practicum – III	3	P5
7	MSYT 307	Yoga therapy techniques - II	2	P6
<b>Total number of Credits</b>			24	

### Semester – IV

S. No.	Course Code	Course Title	Credits	Type of Course
1	MSYT 401	Discipline Specific Elective - VI	4	DE6
3	MSYT 402	Elective - II	4	E2
3	MSYT 403	Dissertation	16	-
<b>Total number of Credits</b>			24	

### ELECTIVES

S. No.	Course Title	Credits
1	Essentials of Clinical examination in Yoga therapy	4
2	Symptoms based analysis in yoga therapy	4
3	Research Methodology in Yoga therapy	4
4	Physiology of Yoga therapy techniques	4
5	Essentials of Biochemistry in Yoga therapy	4
6	Mind body Medicine	4

7	Science of meditation	4
8	Management of Stress in Yoga therapy	4
9	Fundamentals of Yoga	4
10	Fundamentals of Ayurveda	4
11	Health Psychology and Counselling	4
12	Research Advances in Yoga therapy	4
13	Yoga for prevention and promotion of health	4
14	Fundamental of Integrative Medicine	4
15	Yoga and Rehabilitation	4
16	Advance Yogasana	4

## **SEMESTER-I**

***Course Name: PRINCIPLES AND PRACTICE OF YOGA THERAPY***

***Course Code: MSYT 101***

### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ To understand the hidden working principles of Yoga for using Yoga as line of treatment
- ✚ To understand the various factors those are found to be associated with our health
- ✚ To completely imbibe the knowledge of body, illnesses and the techniques to eradicate the illnesses from the perspective of Yoga and related texts

### **Unit-I**

**Concepts and definitions of health and health-related values:** Modern concept of health; Definition of health by World Health Organization; Health from the perspective of Lay man; Health definitions at the intersection of technology, medicine, and individuals in the digital society; Dimensions of health: Physical, mental, social, spiritual, emotional, vocational, other dimensions-Philosophical, Cultural, Socioeconomic, environmental, educational, nutritional, curative and preventive

### **Unit-II**

**Concept of Health and diseases in Yoga and Ayurveda:** Yoga perspective of health; Yoga perspective of disease (vyadhi); Types of Vyadhi: Adhija and Anadhijavyadhi; Anadhija: Sara and samanya; Yoga concepts of wellbeing; Relationship between health and disease; Six stages of disease: Accumulation, aggravation, dissemination, localization, manifestation and chronicity; Yoga methods of disease diagnosis: Triguna, tridosa, trivasana, prana, abhyasa, jivakarma, chetana, vacha, ahara, viparitabuddhi, jivavritti, sankalpa

### **Unit - III**

**Sareera according Yoga and Ayurveda:** Trisareera: Sthoolasareera, sukhmasareera, karanasareera; Reasons for Vikriti in Tri sareera; Panchakosa: structure and functions of Annamaya, pranamaya, manomaya, vijnanamaya and anandamayakosa; Reasons for conflict and manifestation of stress in Vijnanamaya and Manomayakosa; Saptadhatu; Correlation

between Panchamahabhuta and Saptadhatu; Concept of Malas and Srotases in the manifestation of a disease

#### **Unit – IV**

**Wellbeing and techniques for operation:** Ways to attain and maintain a state of wellbeing: Achar, vichar, ahar, vihar; Tools for health and well-being: Tools to induce psycho-physical harmony, Tools to balance emotional volatility, Development of appropriate psychological attitudes, Contemplation, relaxation and meditation, Enhancing spiritual awareness, Relieving suffering and pain; Suddhikriyas: Kayasuddhi, Pranasuddhi, Chittasuddhi and Indriyasuddhi and other operational tools for vijnanamaya and Anandamayakosa

#### **Books for Reference**

- ✚ H. R. Nagendra and R. Nagarathna (2008). Promotion of Positive health (3<sup>rd</sup> edition), Swami Vivekananda Yoga Publication Trust, Bangalore, India
- ✚ Sanjib Patra (2019). Principles and Practice of Yoga therapy (1<sup>st</sup> edition), Swami Vivekananda Yoga Publication Trust, Bangalore, India

***Subject Name: ESSENTIALS OF ANATOMY AND ALIGNMENT PRINCIPLES IN YOGA THERAPY***

***Subject Code: MSYT 102***

#### **Learning Objectives**

After having undergone this course,

- ✚ students will be able to learn the gross structure, functional anatomy of different systems in human body and
- ✚ understand and keep the basic principles of alignment at the back of their mind while performing the Asanas.

#### **Unit-I**

**Organization of the Body, Digestive and Excretory systems:** Cell-Introduction to Human Anatomy; Composition of the Human Body; The Cell and its' organelles and their functions, Intercellular junctions; The tissues; **Skeletal System** - Axial skeleton, appendicular skeleton, Bone types, parts and composition, Bone structure, Bone development and growth, The joints, classification and description; Muscular system – General description of muscles, their

origin, insertion, actions and nerve supply, general classification of muscles, Anatomical structure of a Skeletal muscle; **Digestive system**- Organization of the Digestive system, Peritoneum, General characteristics of Gastro intestinal system, Anatomy of Mouth, Pharynx, Oesophagus, Stomach, Small Intestine and Large intestine, Digestive glands – Pancreas, Liver and Gall Bladder, Anatomy of the Pancreas and Liver and their general functions; **Excretory systems** - General introduction, Anatomy of the Kidneys, Structure and function of a Nephron, Counter current multiplier;

## **Unit-II**

**Lymphatic, Respiratory, Cardiovascular and Reproductive Systems: Lymphatic system** – The Lymph, Lymph vessels, Lymphatic organs and tissues; **Respiratory system** - Introduction to Respiratory system, Anatomy of Lungs and Pleura, Functions of Respiratory system, Blood circulation to Respiratory tract and Lungs and physiological shunt; **Cardiovascular system** – Organization and general functions of cardiovascular system, Anatomy of Heart, Structure and functions of the Blood vessels, conducting system of the heart, Blood circulation to heart; **Reproductive system** – Sexual growth and Development, Male reproductive system – Anatomy of Male reproductive system and its functions, Female reproductive system – Anatomy of the Female reproductive system and their general functions

## **Unit-III**

**Endocrine, Immune, Nervous system and Special senses: Endocrine system** – Organization of Endocrine system, General characteristics of Hormones, Hormone receptors and up & down regulation of hormones, The Hypothalamus and its' releasing and inhibitory hormones, Functional Anatomy of Pituitary gland and the hormones of anterior & posterior Pituitary; Structure and functions of Thyroid, Parathyroid, Thymus, Ovary and Testes; General introduction to Immune system, **Nervous system** – Organization of Nervous system, Structure and function of Neuron, Classification of Neurons and Neuroglia cells, Structure and functions of Thalamus, Hypothalamus, Midbrain, Pons, Medulla Oblongata, Cerebral hemispheres and lobes of the Brain, Six layers of Cerebral cortex, Organization of Spinal cord and brief introduction to Ascending and descending tracts, Ascending reticular activating system; **Special senses** – General introduction and essential functions of Ear, Eye, Nose and Skin

## **Unit-IV**

**Body Alignment, Posture and GAIT:** Gravitational effect - Posture Analysis - Postural changes during growth, Gravitational forces, Stabilization mechanisms, The Alexander and

Perry technique; Stance and Motion postures - Static Stance and Sitting Postures, Dynamic postures, The walking function, Examination of Gait, Running and Jumping; Effect of Balance defects - Effects of Bipedism, Body Type and Balance defects, Aetiology of Postural faults, Physiological reaction to Postural faults; Ideal alignment, Ways to improve posture and alignment, Ideal standing, sitting, prone, supine and balancing postures

### **Books for Reference**

- ✚ Gerard J. Tortora, Bryan Derrickson (2014). *Essentials of Anatomy and Physiology* (1<sup>st</sup> ed.), ISBN: 9788126544806, Wiley India Pvt Ltd.
- ✚ Leslie Kaminoff (2007). *Yoga Anatomy*, ISBN: 978-0-7360-6278-7, The Breathe Trust.
- ✚ Inderbir Singh (2007). *Textbook Of Anatomy with Coloured Atlas* (4<sup>th</sup> ed.), ISBN: 9788180618338, Jaypee Brothers Medical Publishers.
- ✚ Frank H Netter (7<sup>th</sup> ed.). *Atlas Of Human Anatomy*, ISBN: 9780323393218, ELSEVIER
- ✚ Steiven Weiss (2019). *Yoga Alignment Principles and Practice* (2<sup>nd</sup> ed.), ISBN-10: 0989327221, Align by Design Yoga; Black & White, 2nd OT the Injury-Free Yoga Practice, Calgary, Alberta Canada

**Course Name: ESSENTIALS OF PHYSIOLOGY IN YOGA THERAPY**

**Course Code – MSYT 103**

### **Learning Objectives**

Following the completion of this course, students will be able to understand

- ✚ functions of the bodily organs
- ✚ physiological process and its mechanism of action
- ✚ every Physiological process in detail for understanding the underlying mechanism

### **Unit-I**

**Cell, Homeostasis, Muscles, Nerve, Blood:** Homeostasis: Basic concept, Feedback mechanisms Structure of cell membrane, transport across cell membrane Body fluid Compartments: distribution of total body water, intracellular & extracellular compartments, major anions & cations in intra and extra cellular fluid; Membrane potentials, RMP & Action Potential; **Blood:** Composition & functions of blood, Plasma proteins - Types, concentration,

functions & variations, Erythrocyte: Morphology, functions & variations; Erythropoiesis & factors affecting erythropoiesis, ESR- factors affecting, variations & significance; Haemoglobin - Normal concentration, method of determination & variation in concentration, functions; Leucocytes: Classification, number, percentage, distribution morphology, properties, functions & variation; Role of lymphocytes in immunity, life span & fate of leucocytes; Thrombocytes - Morphology, number, variations, function; Haemostasis – Role of vasoconstriction, platelet plug formation in haemostasis, coagulation factors, intrinsic & extrinsic pathways of coagulation, clot retraction; Anticoagulants - mechanism of action; Blood groups: ABO & Rh system; Blood volume: Normal values, variations; Functions of reticulo-endothelial system; Leucopoiesis and Thrombopoiesis

## **Unit-II**

**Digestive and Excretory systems: Digestive system**-Introduction to digestion, General structure of G.I. tract, Innervations; Salivary glands: Saliva: composition, regulation of secretion & functions of saliva; Stomach: Composition and functions of gastric juice, mechanism and regulation of gastric secretion; Exocrine function of Pancreas - composition of pancreatic juice, functions of each component, regulation of pancreatic secretion; Liver: composition of bile, functions of bile Gall bladder: structure, functions; Small intestine - Composition, functions Large intestine – Functions; Mastication, deglutition, gastric filling & emptying, movements of small and large intestine, defecation; **Excretory system** – Kidney, functional unit of kidney & functions of different parts, Juxta Glomerular apparatus; Formation of Urine: Glomerular filtration rate - definition, normal values, factors influencing G.F.R. Tubular reabsorption of sodium, glucose, water & other substances; Tubular secretion of urea, hydrogen and other substances; Counter current mechanisms; Micturition: anatomy & innervation of Urinary bladder, mechanism of micturition; Role of kidney in the regulation of pH of the blood

## **Unit-III**

**Respiratory, Endocrine and Reproductive Systems: Respiratory system** - Physiology of Respiration, External & internal respiration; Respiratory movements: Muscles of respiration, Mechanism of inflation & deflation of lungs; Intra pleural & intra pulmonary pressures & their changes during the phases of respiration; Mechanics of breathing - surfactant, compliance & work of breathing; Spirometry: Lung volumes & capacities definition, normal values, significance, factors affecting vital capacity, variations in vital capacity, Pulmonary

ventilation- alveolar ventilation & dead space-ventilation; Pulmonary circulation; Exchange of gases: Diffusing capacity, factors affecting it. Transport of Oxygen & carbon dioxide in the blood; Regulation of respiration- neural & chemical; Artificial respiration; FEV & its variations; Pulmonary function tests; **Endocrine system** - Endocrine glands & hormones, Second messengers; Endocrine function of hypothalamus; Hormones of anterior pituitary & their actions; Posterior pituitary hormones: actions Thyroid: secretion & transport of hormones, actions of hormones, regulation; Adrenal cortex & Medulla- action, Other hormones - Angiotensin, local hormones Pancreatic Hormone; Gonadotrophic hormones; Female reproductive system: Menstrual cycle, functions and hormones of ovary, Ovarian and uterine changes during menstrual cycle; Actions of oestrogen & Progesterone, Control of secretion of ovarian hormones, fertilization, physiological changes during pregnancy, parturition, Lactation, milk ejection reflex; Male reproductive system, spermatogenesis, hormones-testosterone.

#### **Unit-IV**

**Cardio vascular, Central Nervous system and Special senses: Cardiovascular system** - Properties of cardiac muscle; Origin & propagation of cardiac impulse and Pacemaker potential; Action potential; Cardiac cycle - Phases, Pressure changes in atria, ventricles & aorta, Volume changes in ventricles; Heart sounds; Jugular venous pulse Arterial pulse; Electrocardiogram- Basic principles only, Normal electrocardiogram; Heart rate: Normal value, variation. Stroke volume and Cardiac output: definition, normal values, variations, factors affecting, Arterial blood pressure: Definition, normal values, variations, determinants. Regulation of heart rate, stroke volume, blood pressure: integrated concept, Coronary circulation: special features, Cardiac murmurs; **Nervous system** - Organisation of central nervous system, Neuronal organisation at spinal cord level; Membrane potentials: RMP and Action potential, Synapse, its types and properties; Inhibitory and Excitatory post synaptic potentials; Neurotransmitter and its classification; Properties of Nerve fibres; functional significance; Receptors, reflexes, sensations and sensory tracts; Detailed functions of Thalamus, Hypothalamus, Mamillary body, Red nucleus, Basal ganglia and Nigral pathway, Cerebellum; Physiology of pain, Referred pain; Analgesia systems; Cerebral cortex: Basics of higher functions, Brodmann's area and their brief functions; Formation and functions of CSF: clinical significance, Autonomic nervous system; **Special senses**- General introduction to vision, hearing, taste and smell; Errors of refraction; Tests of auditory function.

## Books for Reference

- ✚ Stuart Fox, Krista Rompolsk (2018). Human Physiology (15<sup>th</sup> ed.), ISBN-10: 9781260092844, McGraw-Hill Education
- ✚ Kim E. Barrett, Susan M. Barman, Jason Yuan, Heddwen L. (2019), Ganong's Review of Medical Physiology (26<sup>th</sup> ed.), ISBN: 1260122409, McGraw-Hill Education
- ✚ K Sembulingam (2019), Essentials of Medical Physiology (8<sup>th</sup> ed.), ISBN-10: 9352706927, Jaypee Brothers Medical Publishers

*Course Name: Basics of Sanskrit*

*Course Code: MSYT 104*

## Learning Objectives

After completion of this course,

- ✚ student will be able to gain understanding of sentence constructs
- ✚ identify the etymology (derivations of words from basic constructs and roots) of words
- ✚
- ✚ have a comprehensive understanding of grammar of Sanskrit prose and verses
- ✚ students will understand the hidden concepts of yoga in Sanskrit literature
- ✚ have a sound knowledge about the Ancient Sanskrit texts and pronounce a letter with articulation
- ✚ achieve a good command over all the three abilities in Sanskrit language – Speaking, Reading and Writing.

## Unit-I

**Introduction to Language:** Introduction to language and subject; Knowledge of Devanagari script; Basic elementary and practical knowledge of Maheshwar Sutras, Alphabet and Phonetics, Vowels, Consonants, Special conjunct consonant and combination of vowel – consonants. Story of Trimuni's (Panini, Katyayan and Patanjali) and its work; Pronunciation and Articulation of words and letters; Pronunciation of combine letters associated with their articulation; Concept of The Places of pronunciation, Efforts and Mechanism of birth of each letter; The concept of Sawarna or Homogeneous; Prefixes Usage of prefixes and how they change the meaning of the verb root; Rules of Sandhi (The combination of letters); The role

of Sandhi in pronunciation; Introduction to numbers in Sanskrit – Singular, Dual and Plural; Introduction to Genders – Masculine, Feminine and Neuter Genders; Introduction to time and its all variations; Practice of Numbers 1-100 with Sanskrit words and symbols; Days in Sanskrit with question and answers.

## **Unit-II**

**Introductions to Nouns, Pronouns, Numerals, Tense, Verbs (Roots), Case, Compound, Suffixes and Voice:** Noun or Subanta and its Declensions – 24 forms of a noun in all genders and its declensions; Practice of other similar declensions and usage of the 24 forms of all nouns; Pronoun and its Declensions – Sentence framing with pronouns, Different aspects of pronouns being used as demonstrative pronouns; Questioning words with its declensions in all genders and practice of all of them with Nouns and Pronouns; Avyayas or Indeclinable Pronouns; Numeral words and its declensions – Practice of numeral words and its declension in sentences; Introduction to Tense – Present Past and Future Tense; Practice of conversion of one tense into another tense; Verbs (Roots) or Tidanta – Roots with meaning, Nine forms of verbs for three persons and three numbers, Practice of all the roots; Introduction to Cases and its use; Compounds – Introduction to all types of compound, Practice of all compound words in Sanskrit writing; Suffixes – Introduction of Suffixes. Use of suffixes according to Tense; Voice – Introduction to voice. Practice of conversion of one voice into another voice; Use of voice in Sanskrit writing

## **Unit-III**

**Paragraph writing, Reading and writing practice, Introduction of Sanskrit's branches, Glimpse of science:** Paragraph writing on specific topic with all nouns, pronouns, preposition, time, day, number etc.; Reading as well as writing practice of Sanskrit language with the help of stories and very basic text of Sanskrit; Sanskrit literature - Introduction of Sanskrit literature and its vastness; Specialty and beauty of Sanskrit language with respect to some verses from different poetry, prose and dramas; Practice of Sanskrit language with literature; Ayurvedashastra Astrology – Introduction of astrology and Interrelation of astrology and yoga; Dharmashastra – Co-relation of Dharmashastra and Yoga; Sanskrit and Science - Glimpse of science in Sanskrit with Vimanikshastra, Ganitshastra (Mathematics), Chemistry, Architecture and Engineering etc.

## **Books for Reference**

- 🚩 Thomas Egenes (2020). Introduction to Sanskrit, Part 1 (2<sup>nd</sup> ed.), ISBN-10: 8120811402, Motilal Banarsidass, New Delhi, India

✚ Thomas Egenes (2020). Introduction to Sanskrit, Part 2 (2<sup>nd</sup> ed.), ISBN-10: 8120811402, Motilal Banarsidass, New Delhi, India

## **DISCIPLINE SPECIFIC ELECTIVE -I**

**Course Name: YOGA PRACTICUM-I**

**Course Code: MSYT 106**

### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to practice the subtle Yoga practices on their own
- ✚ to guide the participants in a Clinical set up
- ✚ to understand and implement for it's for self-health and society at large

### **Unit-I**

**SithilikaranaVyayma:** Jumping, Jogging (1+2+3), Side bending, Spinal twisting, Alternate toe touching, Crow walk, Baby walk, Crocodile walk, Back stretch, Hip stretch, Back swing, Paschimattanasana stretch, Halasana stretch, Combination of Halasana and Paschimattanasana stretch, Dhanurasana swing, Back wing, Hip twisting, Bhujangasana Parvattasana stretch, Cycling, Pavanmuktasana stretch, Rocking and rolling, Butterfly stretch, Baddhakanasana stretch, Sashankasana Bhujangasana stretch, Bhoonamanasana stretch, Thigh flexion, Knee stretch, Waist rotation

### **Unit-II**

**Yogic SuksmaVyayma-I:**Uccharana-sthalatatha Vishudha-chakra-shuddhi (for throat and voice); Prarthana (Prayer) Buddhi-tatha-dhritishakti-vikasaka (for developing will power); Smaranashaktivikasaka (for improving the memory); Medhashakti-vikasaka (for improving the intellect and memory); Netrashakti-vikasaka (for the eyes); Kapolashakti-varadhaka (for the cheeks); Karnashakti-varadhaka (for the ears), Grivashakti-vikasaka (for the Neck) (i), (ii) and (iii), Skandha-tatha-bahu-mulashakti-vikasaka (for the shoulders), Bhujabandhashakti-vikasaka, Kohinishakti-vikasaka, Bhujavallishakti-vikasaka, Purnabhujashaktivikasaka (for the arms), Manibandhashakti-vikasaka, Kara-prsthashakti-vikasaka, Karatalashakti-vikasaka, Angulimulashakti-vikasaka (for the fingers), Angulishaktivikasaka (for the fingers),

### Unit-III

**Yogic SuksmaVyayama-II:** Vaksha-sthalashakti-vikasaka (for the chest) (1), Vaksha-sthalashaktivikasaka (for the chest) (2), Udarashakti-vikasaka (for the abdomen) (i) to (x); Kati shaktivikasaka (for the waist) (i) to (v), Muladhara-chakra-suddhi (for the rectum), Upasthatatha-svadhithana-chakra-suddhi (for the genital organs), Kundalinishakti-vikasaka (for the kundalini), Janghashakti-vikasaka (for the thighs) (i) & (ii), Janghashakti-vikasaka (for the thighs) (ii), Janushakti-vikasaka (for the knees), Pindalishakti-vikasaka (for the calves), Pada-mulashakti-vikasaka, Gulpha-pada-pristha-pada-tala-shakti-vikasaka (for the ankles and the feet), Padangulishakti-vikasaka (for the toes)

### Unit-IV

**Kriya:** Kapalbhathi (Alternate nostril and Both nostril), Neti (Jala and Sutra), Vamanadhouti; Trataka: Eye exercises (upward, horizontal, diagonal and eye rotation) followed by palming techniques (simple palming, press and release palming, press and release with breathing, constant pressure with chanting), Jyoti Trataka (Focussing, Intensive gazing and Defocussing) followed by Palming techniques (Press and release, press and release with breathing, constant pressure with chanting); Jatru Trataka – Sideways Viewing, Front and Sideways Viewing, Up and Down Viewing, Rotational Viewing, Preliminary Nisagra Drishti, Nasikagra Drishti; **Relaxation and Meditation Techniques:** IRT, QRT, DRT, OM Meditation, Vipassana meditation,

### Books for Reference

- ✚ Dhirendra Brahmachari (1975). Yogic Suksma Vyayama (2<sup>nd</sup> ed.), ISBN-10: 0882538020, Ind-Ur Publisher
- ✚ Swami Satyananda saraswati (2015). Asana, pranayama, Mudra, Bandha (1<sup>st</sup> ed.), ASIN: B017TKDH10, Yoga Publications Trust, Munger, Bihar, India
- ✚ Nagendra H R (2005). Asana, pranayama, Mudra, Bandha (3<sup>rd</sup> ed.), Swami Vivekananda Yoga Publication Trust, Bangalore, India

**Course Name: ALIGNMENT PRINCIPLES IN YOGA POSTURES AND PRACTICAL PHYSIOLOGY**

**Course Code: MSYT 107**

### Learning Objectives

Following the completion of this course, students will be able

- ✚ to perform all categories of Asana keeping the Alignment principles at the back of their mind.
- ✚ to incorporate the Alignment principles for prevention and better recovery.
- ✚ to carry out the basic physiological experiments for better understanding of body functions

### **Unit-I**

**Alignment Principles –I:** Standing forward, backward and lateral bending postures; Sitting forward, backward and lateral bending postures; Balancing forward, backward and lateral bending postures

**Alignment Principles – II:** Prone forward, backward and lateral bending postures; Supine forward, backward and lateral bending postures; Inverted forward, backward and lateral bending postures

**Practical physiology –III:** Bleeding time, clotting time and prothrombin time; Blood groups - ABO and Rh. Immunological basis of identification of ABO and Rh blood groups; Haemoglobin estimation

**Practical Physiology – IV:** Definition, determination and significance of TC, DC, ESR, count, PCV, MCV, MHC, MCHC

### **Books for Reference**

- ✚ B. K. S. Iyengar (2006). Light on Yoga: The Classic Guide to Yoga (6th edition), ISBN-10: 8172235011, Thorsons Publisher, Pune, India
- ✚ G K Pal and Parvati Pal (2016). Text book of Practical Physiology (1<sup>st</sup> edition), ISBN-10: 8173719969, The Orient Blackswan Publisher
- ✚ A K Jain (2018). Text book of Practical Physiology for MBBS (1<sup>st</sup> edition), ISBN-10: 8178558319, Arya Publications

## **SEMESTER-II**

**Course Name: THERAPEUTICS IN CLASSICAL YOGA**

**Course code: MSYT 201**

## Learning Objectives

After having gone through this course, students will be able to

- ✚ imbibe the knowledge philosophical aspect of Yoga.
- ✚ become well versed with the basic concepts of Yoga Philosophy as given in major yoga texts.

### Unit-I

**Patanjali Yoga Darshana - II: Samadhi Pada and Sadhana Pada** – Concept of Mana, Buddhi, Ahankar and Chitta; Concept of Chitta Bhoomis (Kshipta, Mood, Vikshipta, Ekagra, Nirudha); Concept of Chitta-Vrittis and their classification, Chitta-Vritti Nirodhopaya (Abhyasa and Vairagya); Concept of Ishwar and Ishwar Pranidhana, Qualities of Ishwar, Concept of Samprajnata; Citta-Vikshepas (Antarayas), Concept of Chitta-prasadanam, Relevance of Chitta-prasadanam in Yoga Sadhana, Concept of Yoganushasanam, Yoga Lakshanam and its results; Types of Samadhi (Samprajnatah and Asamprajnatah Samadhi); Types of Samprajnatah Samadhi (Vitarka, Vichara, Anand and Ashmita); Concept of Samapatti and kinds of Samapatti (Savitarka and Nirvitarka, Savichara and Nirvichara); Types of Asamprajnatah Samadhi (Bhavapratyaya and Upayapratyaya); Brief introduction to Ashtanga Yoga

### Unit-II

**Patanjali Yoga Darshana – II: Vibhuti and Kaivalya Pada** - Concept of Kriya Yoga of Patanjali, Theory of Kleshes (Avidya, Ashmita, Raga, Dewesh, Abhinevesh); Concept of Dukhavada (Heya, Hetu, Hana, Hanopaya) Drishta and Drishanirupanam (Prakriti), Drastunirupanama (Purusha), Prakriti Purusha Sam Yoga; Concept of Asana and Pranayama and their Siddhis; Concept of Pratyahara and its Siddhis; Introduction of Dharana, Dhyana and Samadhi, Samyama and its Siddhis; Three types of Chitta Parinamah; Bhoota jaya, Indriya jaya and their Siddhis, Satvapurushanyatakhyati and its Siddhis; Vivek Jnana Nirupanam, Kaivalya Nirvachana; Role of Dharana, Dhyana, Samadhi and its application; Five Types of Siddhis and Jatyantar Parinamh; Concept of Nirman Chitta and four types of Karmas; Concept of Vasana and concept of Bahya Pradartha (external element) and its abilities.

### Unit-III

**Bhagavad Gita- I:** Despondency of Arjuna, Eternal, transcendental nature of soul, Qualities of Self realized, Nature of right action, Righteous duty, Conquering- desire and anger, Historical basis of yoga, Types of karma, Yajna, Wisdom imparted by a true Guru, Freedom through inner renunciation, Yogarudha, Practice of Dhyana, Nature of Spirit The Imperishable Absolute: beyond the cycles of creation and dissolution and Bhakti Yoga

### Unit-IV

**Bhagavad Gita – II:** The infinite manifestations of the Spirit, Vision of visions: The Lord reveals His cosmic form, Concept of Ksetra-Ksetrajna, Trigunas, Nature of Jivanmukta, Concept of Purushottama: the uttermost being, Divine and Demonic qualities, Threefold Faith and The Yoga of Liberation and Renunciation; Psycho analytical model of Bhagavad Gita

### Books for Reference

- ✚ Swami Vivekananda (2014). *Patanjali Yoga Sutras*, ISBN: 9788189297954, Vijay Goel.
- ✚ Saraswati S (2006). *Four chapters on freedom: Commentary on the yoga sutras of Patanjali*, 1<sup>st</sup> ed. India: Bihar School of Yoga.
- ✚ Yogananda P (2002). *God Talks with Arjuna: The Bhagavad Gita*, 1<sup>st</sup> ed. India: YogodaSatsanga Society of India.
- ✚ A. C. Bhaktivedanta Swami Prabhupada (2016). *Srimad Bhagavad Gita As It Is*, 1st ed. India: The Bhaktivedanta Book Trust.

**Course Name: ESSENTIALS OF NUTRITION AND DIETETICS IN YOGA THERAPY**

**Course Code: MSYT 202**

### Learning Objectives

After going through this course, students will be able

- ✚ to gain the knowledge about the estimation of recommended daily allowance (RDA)
- ✚ to understand the deficiency of nutrients, estimation of different nutrients in normal and diseased conditions.

## **Unit-I**

**Biochemical basis of diet components:** Food as source of nutrients, functions of food, definition of nutrition, nutrients & energy, adequate, optimum & good nutrition, malnutrition; Nutrition for Fitness, Athletics & Sports; Basic five groups of food; Food guide according to RDA, Relationship between nutrition & health, Use of food in body - Digestion, Absorption, transport & utilization; Role of fibres in human nutrition; Carbohydrates : Functions, classification, food sources, storage in body; Fats & oils : composition, saturated and unsaturated fatty acids, classification, food sources, function of fats; Proteins - composition, sources, essential & non-essential amino acids, functions, Protein deficiency; Water - as a nutrient, function, sources, requirement, water balance & effect of deficiency; Minerals - macro & micronutrients - functions, sources; Bioavailability and deficiency of Calcium, Iron, Iodine, Sodium & Potassium (in very brief); Vitamins (water & fat soluble) - definition, classification & functions

## **Unit-II**

**Dietary Management of lifestyle diseases:** Basic concepts of diet therapy; Principles of diet therapy & therapeutic nutrition for changing needs; Adaptation of normal diet for changing needs; Routine hospital diets - Regular diet, light diet, full liquid and tube feeding; Modification of diet - Febrile conditions, infections and surgical conditions; Diets for gastro - intestinal disorders, constipation, diarrhoea, peptic ulcer; Diet for renal diseases - Nephritis, Nephrotic syndrome and renal failure; Diet for obesity and cardiovascular disorders; Diet for Diabetes mellitus; Diet & nutrition in kidney diseases; Nutrition support in metabolic disorders; Nutrition - Addictive behaviour in anorexia, nervosa, bulimia & alcoholism.

## **Unit-III**

**Dietetics and Counselling:** Factors affecting and individual food choice; Communication of dietary advice; Consideration of behaviour modification; Motivation; Counselling and educating patient; Introduction to nutrition counselling; Determining the role of nutrition counsellor; Responsibilities of the nutrition counsellor ; Conceptualizing entrepreneur skills and behaviour; Communication and negotiation skills; Teaching aids used by dietitians- charts, leaflets, posters etc., preparation of teaching material for patients suffering from Digestive disorders, Hypertension, Diabetes, Atherosclerosis & Hepatitis and cirrhosis;

Computer application - Use of computers by dietician, Dietary computations, Dietetic management, Education/ training, Information storage, Administrations and Research

## **Unit - IV**

**Dietary management of Immune disorders:** Role of individual nutrients in the inflammatory response and functions; Effects of under nutrition on immunity; Immuno enhancers; Immune suppressants; Conditionally essential nutrients Nutritional management in allergies; Allergies, definition and types, Diagnosis, Management and Prevention with special references to GM foods; Nutrition in Immune system dysfunction, AIDS, Cancer and Auto immune diseases

### **Books for Reference**

- ✚ S.R. Mudambi, M.V. Rajagopal (2008).*Fundamental of Foods, Nutrition & Diet Therapy*(5<sup>th</sup> ed.), ISBN: 9788122419825, New Age Publications.
- ✚ Maurice Edward Shils (2012).*Modern Nutrition in Health and Disease* (11<sup>th</sup> ed.). ISBN: 9781605474618, Lippincott Williams & Wilkins
- ✚ Michelle McGuire, Kathy A. Beerman (2012). *Nutritional Sciences- From Fundamentals to Food* (3<sup>rd</sup> ed.), ISBN: 9780840058201, Cengage Learning.
- ✚ R. Rajlaxmi& K K Sakariah(2013). *Applied Nutrition*, ISBN: 9788120417663 Oxford & IBH Publications Co Pvt Ltd, New Delhi.

**Course Name: YOGA THERAPY FOR SPECIFIC COMMON AILMENTS – I**

**Course Code: MSYT 203**

### **Learning Objectives**

- ✚ to learn the concept of yoga therapy and understand the in-depth concept of diseases
- ✚ to learn the yoga therapy and its components from the ancient prospective
- ✚ to learn the yoga therapy for respiratory disorders and musculoskeletal disorders
- ✚ line of treatment in Yoga therapy

## **Unit –I**

**Respiratory Disorders:** Introduction to Respiratory disorders, Brief classification – Obstructive / Restrictive, infectious; Bronchial Asthma, Definition, Etiopathogenesis,

Classification, Clinical Features, Medical and Yogic Management; Allergic Rhinitis & Sinusitis, Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic Management; COPD - Chronic Bronchitis, Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic Management; Emphysema, Definition, , Classification, Clinical Features, Medical and Yogic Management; Infectious Disorders, Tuberculosis - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic Management

## **Unit – II**

**Cardiovascular and Endocrine Disorders:** Introduction to Cardiovascular disorders; Hypertension - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Atherosclerosis / Coronary artery disease - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Ischemic Heart disease – Angina pectoris / Myocardial Infarction/ Post CABG rehab, Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Congestive Cardiac failure - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Cardiac asthma - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Diabetes Mellitus (I&II) - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Hypo and Hyper- thyroidism - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management

## **Unit- III**

**Metabolic, Obstetrics and Gynecological Disorders;** Obesity - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Metabolic Syndrome - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Menstrual disorders: Dysmenorrhea, Oligomenorrhea, Menorrhagia - Definitions, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Premenstrual Syndrome - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Menopause and peri-menopausal syndrome - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Yoga for Pregnancy and Childbirth - Introduction to pregnancy, Complicated pregnancies: PIH, Gestational DM, Ante-natal care, Post-natal care; PCOS -

Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management

#### **Unit -IV**

**Role of Yoga to enhance/boost Immunity:** Cancer - Causes, types, clinical features, Side effects of Chemotherapy, radiotherapy, Medical and Yogic management; **Auto immune disorders** - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management, Advantages and disadvantages of the application of Steroids in Auto immune disorders; Immune disorders – Definition, classification, Clinical features, Etiopathogenesis, Medical and Yogic management; An overview of Acquired Immune Efficiency Syndrome

#### **Books for Reference**

- ✚ G. Mohan and Indira Mohan (2004). Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness (1<sup>st</sup> edition), ISBN-10: 1590301315, Shambhala Publisher
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Hypertension (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Cancer (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Obesity (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ Samantakamani Nerendran, Padmalatha Venkatram, R. Nagarathna and H. R. Nagendra (2011). Yoga for Pregnancy (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India

#### ***DISCIPLINE SPECIFIC ELECTIVE - II***

#### ***DISCIPLINE SPECIFIC ELECTIVE - III***

**Subject name: YOGA PRACTICUM-II**

**Subject Code: MSYT 206**

### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to perform the breathing practices and Pawan muktasana series on their own
- ✚ to perform Mudra, Bandha, Kriya and Relaxation and Meditation practices on their own
- ✚ to guide the participants in a Clinical set up
- ✚ to understand and implement for it's for self-health and society at large

### **Unit-I**

Hands in and out breathing, hands stretch breathing (1+2+3), Ankle stretch breathing, sashankasana breathing, tiger breathing, dog breathing, rabbit breathing, Straight leg raising breathing, Bhujanagasana breathing, Salabhasana breathing, Setubandhasana breathing, Ardhashakrasana-Padahasthasana breathing, Vayunishkanasana breathing, Paschimattanasana breathing, Naukasana breathing, Navasana breathing

### **Unit-II**

**Pawanmuktasana series: Pawanmuktasana – I-** Prarambhikstithi, Padanguli and Goolfnaman, Goolf chakra, Goolfghoornan, Janunaman, Januchakta, Ardhatitali asana, Shroni chakra, Poornatitali asana, Mushtika Bandhana, Manibandhanaman, Manibandha chakra, Kehunnaman, Kehun chakra, Skandha chakra, Greevasanchalana; Pawanmuktasana – II - Padotthanasana, Padachakrasana, Padasanchalanasana, SuptaPawanmuktasana, JhulanaLurhakanasana, Shavaudarakarshanasana, Naukasana; **Pawanmuktasana – III -** Rajjukarshanasana, Gatyatmakmeruvakrasana, Chakkichalanasana, Naukasanchalanasana

### **Unit – III**

**Mudra and Bandha:** Anjali mudra, Dhyana, Chin, Ganesha, Padma, Abhaya, Adhomukha, Ashwaratna, Avahana, Chakra, Gada, Garuda, Kaleshvara, Linga, Mustika, Prithvi, Rudra, Surya, Vayu, Yoni, Chin, Chimay, Adi, Brahma, Bhairavi Mudra, Hridaya Mudra, Sambhavi Mudra, Khechari Mudra, Kaki Mudra, Bhujangi Mudra, Bhoochari Mudra, Akashi Mudra,

Shanmukhi Mudra, Unmani Mudra, Vipareeta Karani Mudra, Pashinee Mudra, Tadagi Mudra, Prana Mudra, Yoga Mudra, Manduki Mudra, Maha Mudra, Maha Bheda Mudra, Maha Vedha Mudra, Ashwini Mudra, Vajroli/Sahajroli Mudra; Bandha: Mool, Uddiyan, Jalandhar and Maha bandha

#### **Unit - IV**

**Kriya: Kapalbhathi** Vyut karma and Sheet karma; **Danta dhouti** - Chakshu, Karna, Jihva and Kapalendradhouthi; **Antar dhouti** - Laghoo and Poornasankhaprakshalana; Danda and Vastradhouthi; Moola Shodhana; **Nauli**- Vama, Dakshina and Madhyama; Agnisarakriya; **Basti** – Jala Basti; **Relaxation and Meditation Techniques:** Mind Sound Resonance Technique, Anasanapati Meditation, Yoganidra - I, Transcendental meditation, Mantra meditation, Antar Mouna

#### **Books for reference**

- ✚ Swami Satyananda saraswati (2015). Asana, pranayama, Mudra, Bandha (1<sup>st</sup> ed.), ASIN: B017TKDHI0, Yoga Publications Trust, Munger, Bihar, India
- ✚ Nagendra H R (2005). Asana, pranayama, Mudra, Bandha (3<sup>rd</sup> ed.), Swami Vivekananda Yoga Publication Trust, Bangalore, India
- ✚ Nagendra H R (2002). Mind Sound resonance Technique (2<sup>nd</sup> ed.), Swami Vivekananda Yoga Publication Trust, Bangalore, India
- ✚ Swami Niranjanananda Saraswati (1999). Dharana Darshan (2<sup>nd</sup> ed. ), ISBN-10: 9788186336304, Yoga Publications Trust, Munger, Bihar, India

***Course Name: YOGA THERAPY TECHNIQUES-I***

***Course Code: MSYT 207***

#### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to demonstrate the therapeutic techniques of various diseases
- ✚ to present a technique with its procedure, benefits, contraindications, precautions and subtle points
- ✚ to guide the participants of various diseases in a Clinical set up
- ✚ to understand the use of probes based on the requirement and severity of a condition

## **Unit-I**

**Therapeutic techniques – I:** Specialized techniques for Respiratory and cardiovascular disorders

## **Unit-II**

**Therapeutic techniques – II:** Specialized techniques for Endocrine and Metabolic disorders

## **Unit-III**

**Therapeutic techniques – III:** Specialized techniques for Obstetrics and Gynaecological disorders

## **Unit-IV**

**Therapeutic techniques – IV:** Specialized techniques for Cancer and Auto-immune diseases

## **Books for Reference**

- ✚ G. Mohan and Indira Mohan (2004). Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness (1<sup>st</sup> edition), ISBN-10: 1590301315, Shambhala Publisher
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Hypertension (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Cancer (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Obesity (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ Samantakamani Nerendran, Padmalatha Venkatram, R. Nagarathna and H. R. Nagendra (2011). Yoga for Pregnancy (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India

## **SEMESTER-III**

**Course Name: THERAPEUTICS IN HATHA YOGA**

**Course Code: MSYT 301**

### **Learning Objectives**

After going through this course, students will be able to

- ✚ know the Hathayoga Tradition and understand the therapeutics of every technique described in the text
- ✚ know Fundamentals of Hathayoga in different classical Hathayoga texts
- ✚ understand yoga in the context of Hathayoga
- ✚ understand about different body and mind purificatory techniques as mentioned in Hatha yoga texts
- ✚ learn the theoretical and practical aspects of Asana, Pranayama, Mudra, Bandha

## **Unit-I**

**General Introduction to Yoga and Pre - requisites:** Hatha Yoga: Origin, Meaning, Definition, Aim, Objectives and Misconceptions, Philosophy and Foundations; Hatha Yoga Parampara, Natha Cult Hatha Yogis and their contribution; Ghatashudhi: its importance and relevance in Hatha Yoga sadhana; Inter-relation of Hatha Yoga and Raja Yoga; Brief introduction to Hathayogis; Pre-requisites: Badhaka Tattva (Obstacles) and Sadhaka Tattva (Facilitatory factors) in Hatha Yoga

## **Unit –II**

**Principles and Introduction to Hatha Yoga texts:** Concepts of Matha, Concept of Mitahara, Pathya (conducive) and Apathya (non-conducive), Types of aspirants; Dasha Yama and Niyama and its relevance in Hatha Yoga Sadhana; Swara, Importance of Svarodaya-jnana in Hatha Yoga Sadhana; Hatha Siddhi Lakshanam; Concept of Swas-prashwas, Vayu, Prana and Upaprana; Concept of Kand, Nadi, Swar, Chakra and Granthi; Kundalini prabodhan, Unmani avastha, Nadanusandhan; Concept of Samadhi; Introduction to hatha yoga texts: Brief: Hatha Yogic Texts, their nature and objectives; Siddhasiddhantapaddhati, Goraksha Samhita, and Shiva Samhita; Brief: Hatha Yoga Pradeepika, Gheranda Samhita, Hatha Rathnavali;

## **Unit - III**

**Hathayoga practices:** Shodhana-kriyas in Hathayoga texts and their role in Yoga Sadhana; Yogasana: salient features and importance in Hatha Yoga Sadhana; description of all fifteen Asanas and special emphasis on Siddhasana and Padmasana; Concept of Puraka, Kumbhaka and Rechaka and special emphasis on Asta kumbhaka; The concept of Prana and Upa-pranas

and their importance in Hatha Yoga Sadhana, Importance of Mudra and emphasis on Khechri, Mahaveda and Maha mudra; Bandhas and their role in Yoga Sadhana..

#### **Unit – IV**

**Hathayoga Sadhana:** Philosophical Foundations of Hatha Yoga, Hatha Yoga Sadhana, Chaturanga Yoga and Saptanga Yoga, Relevance of Hatha Yoga in day-to-day life; Inter Relationship between Patanjala Yoga and Hatha Yoga and their inter-dependence; Kundalini Yoga: Philosophical Foundations and Practices of Kundalini Yoga; Concept of Pratyahara, Dharana and Dhyana and their techniques & benefits; Concept of Samadhi. The concept of Nada and Nadasandhana; Svara, Importance of Svarodaya-Jnana in Yoga Sadhana. Mantra Yoga, Laya Yoga, Raja Yoga, Ghata Yoga.

#### **Books for Reference**

- ✚ Swami Muktibodhananda Saraswati (2013). Hatha Yoga Pradipika (3<sup>rd</sup> ed.), Bihar Yoga Publication Trust, Munger, Bihar
- ✚ Swami Niranjanananda Saraswati (2012), Gheranda samhita (1<sup>st</sup> ed.), ISBN-10: 9381620199, Bihar Yoga Publication Trust, Munger, Bihar
- ✚ Rai V. Basu (1996). The Siva Samhita (2<sup>nd</sup> ed.), ISBN-10: 8121505070, Munshiram Publisher

***Subject Name: YOGA THERAPY FOR SPECIFIC COMMON AILMENTS - II***

***Subject Code: MSYT 302***

#### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to learn the concept of yoga therapy and understand the in-depth concept of diseases
- ✚ to learn the yoga therapy and its components from the ancient prospective
- ✚ to learn the yoga therapy for respiratory disorders and musculoskeletal disorders
- ✚ line of treatment in Yoga therapy

#### **Unit – I**

**Gastro Intestinal Disorders:** APD - Introduction to APD: Gastritis –Acute & Chronic, Dyspepsia, Peptic Ulcers, Clinical Features, Medical and Yogic management; Constipation and Diarrhoea - Definition, Etiopathogenesis, Clinical Features, Medical and Yogic

management; Irritable Bowel Syndrome - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management; Inflammatory Bowel Disease, Ulcerative colitis - Definition, Etiopathogenesis, Classification, Clinical Features, Medical and Yogic management

## **Unit – II**

**Musculo-Skeletal Disorders:** Back Pain Classification of back pain: organic and functional, Lumbar Spondylosis, Intervertebral disc prolapse (IVDP), Spondylolisthesis, Spondylitis, Psychogenic- Lumbago, Medical and Yogic management; Neck pain – Classification, Cervical Spondylosis, radiculopathy, Functional neck pain, Medical and Yogic management; All forms of Arthritis - Rheumatoid Arthritis, Osteoarthritis, Medical and Yogic management

## **Unit – III**

**Neurological Disorders:** Headaches – Migraine, Causes, Classification, clinical features, Medical and Yogic management, Tension headache - Causes and its symptoms, Medical and Yogic management; Cerebro vascular accidents - Causes, clinical features, Medical and Yogic management; Epilepsy; pain; Autonomic dysfunctions - Causes, clinical features, Medical and Yogic management; Parkinson’s disease - Causes, clinical features, Medical and Yogic management

## **Unit - : IV**

**Psychiatric disorders:** Introduction to psychiatric disorders, classification – Neurosis, Psychosis, Neurosis, Anxiety disorders - Generalised anxiety disorder, Panic Anxiety, Obsessive Compulsive Disorder, Phobias, Medical and Yogic management; Depression – Dysthymia, Major depression, Medical and Yogic management; Psychosis – Schizophrenia, Bipolar affective disorder, Medical and Yogic management

## **Books for Reference**

- ✚ R. Nagarathna and H. R. Nagendra (2010). Yoga for Arthritis (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Anxiety and Depression (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2010). Yoga for Gastro Intestinal Disorders (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India

- ✚ G. Mohan and Indira Mohan (2004). Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness (1<sup>st</sup> edition), ISBN-10: 1590301315, Shambhala Publisher

## ***DISCIPLINE SPECIFIC ELECTIVE - IV***

## ***DISCIPLINE SPECIFIC ELECTIVE - V***

## ***ELECTIVE -I***

***Course Name: YOGA PRACTICUM-III***

***Course Code: MSYT 306***

### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to confidently perform the advanced series of Asanas from the tradition of BKS Iyengar.
- ✚ to perform the advanced series of Asanas from Bihar School of Yoga tradition
- ✚ to perform the Pranayama, Relaxation and Meditation practices on their own
- ✚ to maintain a posture for a longer duration to satisfy the criteria of 'Asana' as described in Patanjali Yoga Sutra.
- ✚ to guide the participants in a Clinical set up
- ✚ to understand and implement the practices for self-health and society at large

### **Unit-I**

**BKSI tradition Advanced Yoga postures-I:** Tadasana, Utthitatrikonasana, UtthitaParsvakonasana, Virabhadrasana-I, Virabhadrasana-II, Parsvottanasana, PrasaritaPadottanasana, Ustrasana, Padangusthasana, Padahastanasana, Uttanasana, Salabhasana, Dhanurasana, Chaturangadandasana, Bhujangasana-I, Urdho-mukho-svanasana, Adha-mukho-svanasana, Dandasana, Paripurna - Navasana, Ardha Navasana, Siddhasana, Virasana, Suptavajrasana, Baddha-konasana, Padmasana, Parvattasana, Matsyasana, Badhapadmasana, Yogamudrasana, Maha mudra, Janusirsasana, Ardha Baddha Padma Paschimottanasana, Trianga Mukhaikapda Paschimottanasana

## Unit-II

**BKSI tradition Advanced Yoga postures-II:** Marichyasana-I, Marichyasana-II, Upavistha Konasana, Brahmacharyasana, Purvottanasana, Salambasirsasana – I, Urdhva Dandasana, Salamba Sarvangasana-I, Salamba Sarvangasana-II, Halasana, Karnapidasana, Supto-Konasana, ParsvaHalasana, EkaPadaSarvangasana, Parsvaika Pada Sarvangasana, Setu Bandha Sarvangasana, Urdhva Padmasana, Pindasana, Parsva Pindasana, Jatara Parivartanasana, Supta Padangusthasana, Bharadvajasana, Ardha Matsyendrasana, Urdhva Dhanurasana

## Unit-III

**BSY tradition Yoga postures-III: Relaxation Asanas** – Shavasana, Advasana, Jyestikasana, Makarasana, Matsyakridasana; **Meditative Postures** – Sukhasana, Ardha Padmasana, Padmasana, Siddhasana, Siddha Yoni Asana, Swastikasana, Dhyana Veerasana; **Vajrasana group of Asanas** – Vajrasana, Ananda Madirasana, Padadhirasana, Bhadrasana, Simhasana, Simhagarjanasana, Veerasana, Marjari Asana, Vyaghrasana, Shashankasana, Sashank-Bhujangasana, Naman Pranamasana, Ashwa Sanchalanasana, Ardha Ushtrasana, Ushtrasana, Supta Vajrasana

## Unit-IV

**Advanced Pranayama:** Bibhagiya Pranayama (Abdominal + Thoracic + Clavicle + Full Yogic), Breath awareness, Ujjayi Pranayama, Bhastrika Pranayama, Surya Bhedana Pranayama, Chandra Bhedana Pranayama, Nadi Sodhana Pranayama, Anuloma-Viloma Pranayama, Sitali, Sitkari, Sadanta, Bhramari, Bhramara, Nadanusandhana (A-U-M and Om chanting), Savitri Pranayama; **Relaxation and Meditation techniques:** Yoga Nidra – II, Cyclic Meditation, Brahma Kumari Raja Yoga Meditation, Chidakasha Dharana, Chakra Meditation (Mooladhara, Swadisthana, Manipura)

## Books for Reference

- 🌈 B. K. S. Iyengar (2006). Light on Yoga: The Classic Guide to Yoga (6<sup>th</sup> edition), ISBN-10: 8172235011, Thorsons Publisher, Pune, India
- 🌈 Swami Satyananda saraswati (2015). Asana, pranayama, Mudra, Bandha (1<sup>st</sup> edition), ASIN: B017TKDHI0, Yoga Publications Trust, Munger, Bihar, India

**Course Name: YOGA THERAPY TECHNIQUES - II**

**Course Code: 307**

### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to demonstrate the therapeutic techniques of various diseases
- ✚ to present a technique with its procedure, benefits, contraindications, precautions and subtle points
- ✚ to guide the participants of various diseases in a Clinical set up
- ✚ to understand the use of probes based on the requirement and severity of a condition

### **Unit-I**

**Therapeutic techniques – I:** Specialized techniques for Gastro Intestinal disorders

### **Unit-II**

**Therapeutic techniques – II:** Specialized techniques for Musculo-skeletal disorders

### **Unit-III**

**Therapeutic techniques – III:** Specialized techniques for Neurological disorders

### **Unit-IV**

**Therapeutic techniques – IV:** Specialized techniques for Psychiatric disorders

### **Books for Reference**

- ✚ G. Mohan and Indira Mohan (2004). Yoga Therapy: A Guide to the Therapeutic Use of Yoga and Ayurveda for Health and Fitness (1<sup>st</sup> edition), ISBN-10: 1590301315, Shambhala Publisher
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Anxiety and Depression (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Arthritis (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Obesity (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India
- ✚ R. Nagarathna and H. R. Nagendra (2008). Yoga for Gastro-intestinal disorders (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publications, Bangalore, India

## **SEMESTER-IV**

### ***DISCIPLINE SPECIFIC ELECTIVE - VI***

### ***ELECTIVE - II***

***Course Name: DISSERTATION***

***Course Code: MSYT 403***

#### **Learning Objectives**

Following the completion of this dissertation, students must be able

-  To carry out his/her own research independently
-  To conceptualize and design a Project independently
-  To prepare a manuscript independently and communicate to a Journal

During this period, every student will choose his/her own research and carry out the research trial under the supervision of a Guide. The Guide will be the mentor starting from conceptualization until the presentation and communication to a journal. Following the successful completion, a departmental viva will be organized for the candidate to present his/her work to the whole department.

## **LIST OF ELECTIVES**

**Subject Name: ESSENTIALS OF CLINICAL EXAMINATION IN YOGA THERAPY**

### **Learning Objectives**

After the end of this course, students will be able to

- ✚ Skillfully perform the physical examination in a clinical set up under the supervision of a doctor.
- ✚ Monitor the vital parameters such as BP, BR, PEFr etc. in a clinical set up.
- ✚ Prepare the case history and understand the medical terminology much better

### **Unit – I**

**General Introduction:** Introduction, Overall appearance, Posture and GAIT, Height and Weight, Anaemia, Jaundice, Cyanosis, Clubbing, Lymphadenopathy, Edema, Skin, hair and nails, Pulse, Blood pressure, Jugular Venous Pressure (JVP), Respiratory rate, Temperature, Normal report pattern of general examination; **Physical examination:** Inspection, Palpation, Percussion, Auscultation; **Determination of Arterial Blood Pressure:** Principles, Recording of Blood Pressure in different postures and after exercise

### **Unit – II**

**Examination of Respiratory system:** Introduction, Inspection, Palpation, Percussion, Auscultation, Report pattern, General examination, Respiratory system examination; Examination of Cardiovascular system: Examination of Arterial pulse, Measurement of Arterial Blood pressure, Jugular Venous pressure, Examination of Precordium, Report pattern

### **Unit - III**

**Examination of Nervous system:** Examination of Higher functions, Mental state, Memory, Speech, Posture, GAIT; **Sensory system:** Requirements, Method, Touch sensation, Pain sensation, Vibration sensation, Temperature, Stereognosis, Appreciation of Passive movement and Proprioception, Graphesthesia, Double simultaneous stimulation, Examination of Sensory cranial nerves and the sensory parts of mixed nerves, Report pattern of a normal subject; **Examination of Motor system:** Inspection, Bulk of muscle, Muscle tone, Coordination of movement, Muscle power, Muscles of Upper limb, Muscles of shoulder, Muscles of Neck, Abdomen and Back, Muscles of Lower limb, Grading power of muscles, Motor cranial nerves, GAIT, Abnormal movements, report pattern

## Unit – IV

**Examination of Reflexes:** Introduction, Deep reflexes or muscle stretch reflexes, Superficial reflexes, Corneal and Conjunctiva reflexes, Pharyngeal and Palatal reflexes, Pupillary reflexes, Abdominal reflex, Cremasteric reflex, Plantar reflex, Anal reflex, Visceral reflexes; **Working principles:** ECG, EEG, EMG, EGG, GSR, Oximetry (SpO<sub>2</sub>), PPG (Photoplethysmograph), Pulmonary function test (PFT), Hand grip Dynamo meter

### Books for Reference

- ✚ G K Pal and Parvati Pal (2016). Text book of Practical Physiology (1<sup>st</sup> edition), ISBN-10: 8173719969, The Orient Blackswan Publisher
- ✚ A K Jain (2018). Text book of Practical Physiology for MBBS (1<sup>st</sup> edition), ISBN-10: 8178558319, Arya Publications

**Subject Name: SYMPTOMS BASED ANALYSIS IN YOGA THERAPY**

### Learning Objectives

After going through this course, students will be able to

- ✚ gain a detailed knowledge about the manifestation of a disease through various signs and
- ✚ detailed analysis of symptoms and proper understanding of a Disease

## Unit – I

**Symptomatology of Cardiovascular & Respiratory Diseases:** Rheumatic Heart Disease, Atherosclerosis and Ischemic Heart Disease, Myocardial Infarction, Hypertension and Hypertensive Heart Disease, Pericarditis and other pericardial diseases, Cardiomyopathy, Obstructive and restrictive lung disorders, Inflammatory diseases of bronchi : chronic bronchitis, bronchial asthma, bronchiectasis, chronic obstructive lung disease, Pneumonias : Lobar, Broncho, Interstitial, Pulmonary Tuberculosis : Primary and Secondary, Atelectasis and Hyaline Membrane Disease, Occupational lung disorders

## Unit – II

**Symptomatology of Neuro-Endocrine Diseases:** Diabetes Mellitus, Thyroid disorders, Adrenal diseases, Parathyroid disorders, etc, Cerebrovascular diseases: Atherosclerosis, thrombosis, embolism, aneurysm, Hypoxia, Infarction and Hemorrhage, Peripheral neuropathies and demyelinating disorders, Diseases of muscles, Traumatic lesions of CNS

## Unit – III

**Symptomatology of Urinary & Gastro-Intestinal (GI) Tract Diseases:** Glomerulonephritis, SLE, Purpura, Polyarteritis, Amyloidosis, Nephrotic, Acute Renal Failure, Progressive renal failure and end stage renal disease, Pyelonephritis, Reflux Nephropathy, Interstitial Nephritis, Urinary bladder : cystitis, carcinoma, Urinary Tract Tuberculosis, Urolithiasis and Obstructive Uropathy, Leukoplakia; Carcinoma oral Cavity and Esophagus, Peptic ulcer, Gastritis, Inflammatory diseases of small intestine : Typhoid, Tuberculosis, Crohn's, Appendicitis, Inflammatory diseases of appendix and large intestine : Amoebic colitis, Bacillary dysentery, Ulcerative Colitis, Ischemic and Pseudomembranous enterocolitis, diverticulosis, Malabsorption : Celiac disease, Tropical sprue, Jaundice, Hepatitis, Cirrhosis, Portal Hypertension, Tumors of Liver, Diseases of the gall bladder : Cholecystitis, Cholelithiasis, Carcinoma

## Unit - IV

**Other common pathologies:** Tumors, Anaemia, Coagulopathies, Leukocytic disorders, Leukemia, Menstrual cycle abnormalities, Osteopathology: Rickets/Osteomalacia, Osteoporosis, Arthritis : Rheumatoid, Osteo and tuberculous.

## Books for Reference

- ✚ Walter JB. Walter and Israel. *General Pathology* (7th ed.), ISBN : Churchill Livingstone
- ✚ Goljan E (2001). *Pathology Notes: General Pathology*, Lippincott Williams & Wilkins.

**Course Name: RESEARCH METHODOLOGY IN YOGA THERAPY**

## Learning Objectives

After having undergone this course, the students will be able

- ✚ to understand the need of research in yoga therapy
- ✚ to learn the steps of research in yoga
- ✚ to learn different types of variables and research design relevant to yoga therapy
- ✚ to enhance the skills to conduct research in yoga therapy

## **Unit - I**

**Research Methodology – I:** Introduction to research methodology – definition of research, types of research, need for Yoga research; the research process; Literature review – Purpose, Process, digital source: Pub Med, etc., presentation of literature review; Ethics of research – Laboratory ethics, Publication ethics, Ethical bodies, IEC, IRB and guidelines for good clinical practice. Scales of measurement – nominal, ordinal, interval, ratio; Data collection methods: Observation, Interview, psychological tests, questionnaire, physiological tests, and archive

## **Unit – II**

**Research Methodology – II:** Sampling methods - Population and Sample; Simple Random Sampling; Systematic Sampling, Stratified Sampling, Cluster Sampling; Methods of controlling biases – Randomization; Types of variables – Independent, dependent, confounding variable; Types of research design – Experimental designs, cross sectional design; Case study, Survey; Reliability: Test Retest Reliability, Internal Consistency, Inter-rater Reliability; Validity: Construct Validity, Face Validity, Content Validity, Criterion Validity, Convergent and Discriminant validity; Issues of bias and confounding; Selection bias, Recall bias, Observer or measurement bias, Publication bias; Randomization, Matching, Crossover design, Restriction (or blocking); Stratification

## **Unit – III**

**Statistical Concepts - I:** Descriptive statistics, inferential statistics, Hypothesis, Null hypothesis, Statistics and Parameters, Sample and Population, Generalization, One tailed, two tailed hypothesis, Types of Errors and its control, Central Limit Theorem

## **Unit – IV**

**Statistical Concepts – II:** Point estimate and interval estimate, Power analysis: Effect size, sample size, p-value, Confidence interval; Statistical tests and design, Assumptions of tests, Statistical tests for various designs: Correlation, proportions, paired sample, and independent

sample t-tests, Chi-Square tests, ANOVA, Repeated Measures ANOVA, parametric and non-parametric tests

### **Books for Reference**

- ✚ R L Bijlani (2008). Medical Research: All You Wanted to Know But Did Not Know Who to Ask. Jaypee Brothers Medical Publishers Pvt. Ltd. New Delhi
- ✚ C R Kothari (2009). Research Methodology: Methods and Techniques. New Age International (P) Ltd. New Delhi.
- ✚ Zar J H & Zar (1999). Biostatistical Analysis. Pearson Education. New Delhi

### ***Subject Name: PHYSIOLOGY OF YOGA TECHNIQUES***

#### **Learning Objectives**

Following the completion of this course, students will be able

- ✚ To understand the Physiological concept of Yoga
- ✚ To understand the mechanism of action of Yoga practices
- ✚ To scientifically correlate with a disease before prescribing any practice for a diseased participant

#### **Unit – I**

**General Introduction:** Introduction to Human body, Scientific understanding of Annamaya, Pranamaya, Manomaya, Vijnanamaya and Anandamaya Kosa, Structure and functions of each Kosa, Limbs of Yoga and their basic operational principles; **Physiology of Yoga Postures (Asanas):** Definition, Category, Type, Physiological principles of Cultural, Meditative and Relaxation Asanas, Benefits of each category of Asanas, Mechanism of action of each category, Significance of a Complementary posture, Understanding of Reciprocal innervations and Reciprocal inhibition

#### **Unit – II**

**Physiology of Kriya (Cleansing techniques):** Introduction, Importance of a Lukewarm saline water/Iso tonic solution, Difference between Hypo, Hyper and Iso tonic solutions, Classification, Benefits of Jala and Sutra neti and its mechanism of action, Benefits of Trataka and its mechanism of action, Benefits of Kapalbhati and its mechanism of action, Benefits of Vaman, Vastra and Danda dhouti and their mechanism of action, Benefits of Sankhaprakshala and its mechanism of action, Basti, its benefits and mechanism of action,

Nauli, Benefits and its mechanism of action; Action of Central and Peripheral Chemo receptors and the physiological rational of attaining Kevala kumbhaka; Jyoti Trataka and Cortical arousal

### **Unit – III**

**Physiology of Pranayama (Voluntarily regulated breathing techniques):** Definition, Classification, Scientific basis of the existence of Prana within the human body with examples; Understanding of Sectional breathing and their physiological actions in three lobes of the Lungs; Benefits of Heating Pranayama and their mechanism of action; Benefits of Cooling Pranayama and their mechanism of action; Benefits of Balancing pranayama and their mechanism of action; Benefits of Nadanusandhana, its four phases and their mechanism of action; Understanding of Dead space; Pulmonary and Alveolar ventilation, Ventilation perfusion ratio, Compliance; Tidal volume, Vital capacity of Lungs

### **Unit – IV**

**Physiology of Meditation:** Definition, Category, General characteristics of each category, Structural change following the long term practice of Meditation; Physiological changes during and following the practice of Meditation; Changes in Hormone and Neurotransmitter during and following the practice; Activation of Default Mode Network (DMN); Activation of GABAergic system; Activation of Sub cortical and Neocortical area of the Brain, Biomarkers of Meditation; Physiological system of Meditation in other systems of the Human body

### **Books for Reference**

- 🚩 H David Coulter (2010). Anatomy of Hatha Yoga (1<sup>st</sup> edition), ISBN-10: 097070061X, Body and Breath Publisher
- 🚩 Leslie Kaminoff and Amy Matthews (2011). Yoga Anatomy (2<sup>nd</sup> edition), ASIN: B0076DDI8A, Human Kinetics Publisher

***Subject Name: ESSENTIALS OF BIOCHEMISTRY IN YOGA THERAPY***

### **Learning Objectives**

Following the completion of this course, students will be able to

- ✚ understand the normal chemistry of the body and abnormality during diseased conditions
- ✚ understand the normal range of the vital biochemical parameters and
- ✚ correlate the abnormal conditions to predict a disease in general.

### Unit-I

**Urine:** Normal composition of urine – Volume, pH, colour, specific gravity; Constituents - Urea, uric acid, creatinine, pigment. Abnormal constituents – glucose, albumin, ketone bodies, variations in urea, creatinine, pigments and their clinical significance in brief.

### Unit-II

**Blood:** Normal constituents of blood and their variation in pathological conditions - urea, uric acid, creatinine, glucose, bilirubin, total protein, albumin/globulin ratio. Lipid profile – cholesterol, Triglycerides, lipoproteins - HDL and LDL.

### Unit-III

**Liver function tests:** Alkaline phosphatase, SGOT and SGPT; Cardiac injury profile CPK and LDH.

### Unit –IV

**Inborn errors of Metabolism:** Sickle cell anaemia, phenyl ketonuria, Neimann – Pick disease, Type III glycogen storage disease (Cori's disease).

### Books for Reference

- ✚ R.K.Murray, D.K. Granner, P.A. Mayes and V.W. Rodwell, HARPER'S BIOCHEMISTRY, 22nd edn.(1990), Prentice-Hall, International, USA.
- ✚ P.K. Stumpf, OUTLINES OF BIOCHEMISTRY, 4th edn. (1994), Wiley Eastern, New Delhi, (Chapters 7 & 8).
- ✚ Nelson and Cox, LEHNINGER's PRINCIPLES OF BIOCHEMISTRY, (2000), Kalyani Publishers, Ludhiana/Worth Publishers, Inc., New York.
- ✚ L. Stryer BIOCHEMISTRY 4th Ed. (1995) W.H. Freeman Co., San Francisco, USA

**Subject Name: MIND BODY MEDICINE**

**Learning Objectives**

After completing this course, students will be able

- ✚ to learn mind-body medicine as an alternative intervention
- ✚ to understand stress and its hazardous effects
- ✚ to learn psychoneuroimmunology and its health prospective
- ✚ to learn mind-body intervention and their health benefiting effects

**Unit - I**

**Fundamentals of Mind-body Medicine:** Introduction to mind body medicine, definition, need have subject, relevance of mind body medicine in yoga therapy; Acute care model and psychosocial model

**Unit – II**

**Stress and MBM:** Definition of stress, stress physiology, effects of stress on health, stress assessments, psychoneuro-endocrinology, and pathophysiology of stress; Mind body intervention and stress

**Unit – III**

**Psychoneuro-immunology:** Definition, Neuro-hormonal pathways in psychoneuro-immunology, Gut brain axis, emotions and health, Emotions and psychopathologies: defensive detachment, self-esteem, self-criticism, emotional intelligence and self-regulation.

**Unit – IV**

**Mind body interventions: Yoga:** Prevention of disease and promotion of health through yoga, health benefiting effects of yoga; mechanism of yoga; Mindfulness meditation: Introduction, steps of mindfulness meditation and its health benefiting effects; Transcendental medicine: Introduction, steps of mindfulness meditation and its health benefiting effects

**Books for Reference**

- ✚ Zhi Gang Sha (2010). Soul Mind Body Medicine: A Complete Soul Healing System for Optimum Health and Vitality (1<sup>st</sup> edition), ASIN: B0042FZW8O, New World Library Publisher

✚ Lissa Rankin (2013). *Mind Over Medicine* (1<sup>st</sup> edition), ASIN: B00BLSZJGA, Hay House Inc. Publisher

**Subject Name: SCIENCE OF MEDITATION**

### **Learning Objectives**

After going through this course, students will be able to

- ✚ gain the knowledge about the basics of meditation.
- ✚ gain the knowledge about different meditation techniques.
- ✚ gain the knowledge about effect of meditation on human anatomy and physiology.

### **Unit-I**

**Introduction to Meditation:** Meditation- Definitions, concepts, and basic techniques; The purpose and intention of meditation practice from different perspectives. Anatomical and Physiological changes in the body due to meditation practice.

### **Unit-II**

**Meditation as a tool to increase self-awareness:** Awareness of the energy system within the body through Visualizations and a Chakra breathing exercise; Basics Of Different Meditation Techniques: Buddhist Meditation techniques, Vedic Meditation techniques, Chinese Meditation Techniques, Jain meditation Technique, Other Meditation techniques

### **Unit-III**

**Meditation and Brain:** Meditation and brain waves, Meditation and Ageing, Meditation and Cognitive Functions

### **Unit-IV**

**Meditation in Yoga Texts:** Concept of Dhyana in Yogopnishad, Bhagwad Gita, Gheranda Samhita and other Yoga texts

### **Books for Reference**

- ✚ Daniel Goleman, Richard J. Davidson ((2017). *Altered traits\_ science reveals how meditation changes your mind, brain, and body*. ISBN: 9780399184406, Avery.
- ✚ Shinzen Young (2016). *The Science of Enlightenment - How Meditation Works*, ISBN:978-1-62203-748-3, Sounds True.
- ✚ ItaiIvtzan, Tim Lomas (2016). *Mindfulness in Positive Psychology - The Science of Meditation and Wellbeing* , ISBN:9781138808515,Routledge

✚ William Johnston (1997). *Silent Music - The Science of Meditation*, ISBN: 9780823217748, Fordham Univ Press.

✚ Tang, Yi-Yuan (2017). *The neuroscience of mindfulness meditation- how the body and mind work together to change our behavior*, ISBN:978-3-319-46321-6, Palgrave Macmillan.

**Subject Name: MANAGEMENT OF STRESS IN YOGA THERAPY**

### **Learning Objectives**

The course titled ‘Stress, its Physiology and Management’ is aimed at

- Defining stress, eustress, and distress and stress management.
- Identifying positive and negative stimuli and stressors that initiate a reaction/response. And monitoring sign and symptoms of stress
- Listing and utilizing primary techniques used as a form of stress management.

### **Unit -I**

**Stress:** An overview, concept of stress, types of stress: distress and eustress and stages of distress and its consequences; Shirley’s general adaptation syndrome; fight and flight response during stress, stress reactions, factors that affect our stress, Psychosocial causes of stress’ **Stress assessments:** Biochemical assessment of stress, neurophysiological assessments of stress, subjective assessments of stress, Perceived stress scale, depression, anxiety stress scale, distress scale, general health questionnaire, stress inventory

### **Unit - II**

**Occupational stress:** Causes of occupational stress, Symptoms of Occupational stress, Good and bad stress, Acute stress, chronic stress and episodic stress, Stress response; Work related problems during stress, family related problems; Strategies to cope up stress

### **Unit - III**

**Mechanism of Stress:** Impact of stress in human body: Effect of stress in digestive system, cardio-vascular system, respiratory system, reproductive system, endocrine system, muscular system, nervous system, suppression of immune system, Effects of stress hormones

## Unit - IV

**Stress management:** Stress monitoring, checking the diet, regular exercise, time for meditation and Yoga, Interpersonal relationship; Integrated approach of management of Stress: at the body, mind, intellect, social and spiritual plane of handling the stress

### Books for Reference

- ✚ George Fink (2019). Stress: Physiology, Biochemistry, and Pathology (1<sup>st</sup> edition), ISBN: 0128131462, Kindle Academic Press Publisher
- ✚ Sarvesh Gulati (2017). Art of Stress management (1<sup>st</sup> edition), B01N8TD9OC, Rupa Publications India
- ✚ H R Nagendra and R Nagarathna (2008). Perspective of Stress and its Management (2<sup>nd</sup> edition), Swami Vivekananda Yoga Publication Trust, Banaglore, India

**Course Name: FUNDAMENTALS OF YOGA**

### Learning Objectives

Following the completion of this course,

- ✚ students would be able to acquire the basic knowledge,
- ✚ understand the fundamental principles involved and
- ✚ learn the basic knowledge such as definitions and concepts given in the different yoga texts.

### Unit-I

**Origin, History and Development:** History, antecedents and Origin of Yoga, Major historical time frames: Vedic period, Post vedic era and modern era; Definition of yoga as given in Yoga texts and ancient scriptures; Aim, Objectives and Misconceptions about Yoga; Underlining principles of Yoga; Four major streams of Yoga - Raja Yoga. Bhakti Yoga. Karma Yoga, Jnana Yoga; Brief introduction about other paths of Yoga viz., Laya, Tantra, Kundalini, Mantra, Hatha etc; Yoga in Tantras and architecture of Tantric practice; Schools of Tantra yoga; Brief introduction to Kundalini Tantra and objectives of awakening Kundalini

### Unit-II

**Yoga in Shat Darshanas:** Brief introduction to six systems of Indian Philosophy: Nyaya, Vaisesika, Samkhya, Yoga, Purva Mimamsa and Uttara Mimamsa; Four Pramanas of Nyaya; Seven Padarthas as described in Vaiseshika; Pratyaksha and Paroksha Jnana as described in

Purva Mimamsa; Three different schools of Vedanta and their objectives; Evolution as illustrated in Sankhya Yoga; Dualistic principles of Samkhya Yoga; Characteristics of Prakriti; Attributes of Rajas, Tamas and Sattva;

### **Unit-III**

**Vedanta model of Yoga:** Concept of death and birth as described in Mundaka Upanishad; Relation between Breath, Prana and Mind; Distinction between Self and Body; Importance of Tapas in Yoga sadhana; Concept of Self as explained in Katha Upanishad (2.3.11); Concept of Mind and Senses withdrawal (2.8.7) as described in Svetasvatara Upanishad; Attainment of Siddhis and purification of Mind and Body; Six fold (Sadanga) Yoga (6.18); Practice of Prasaya Dhyana; Concept of Atman and Brahman as the central idea of all the Upanishads; Concept of Moksha prapti (Liberation); Panchakosa Viveka as described in Taitriya Upanishad

### **Unit-IV**

**Yoga model of Self / body and mind: Concept of Trisareera** and their correlations with Panchakosa; Annamayakosa or Sthoolasareera in the context of Yoga and Ayurveda; Pranamayakosa: Sapta chakra, nadi, granthi, Pancha and upa prana; Manomaya kosa: Facets of mind and theory of likes and dislikes for manifestation of stress, Vijnanamayakosa: Difference between intellect and wisdom, concept of Viveka and Shraddha in the context of Jnana Yoga

### **Books for Reference**

- ✚ Saraswati Swami Satyananda (2006). *Four Chapters on Freedom* (1<sup>st</sup> ed.), ISBN: 9788185787183, Yoga Publications Trust Munger Bihar.
- ✚ Georg Feuerstein, Subhash Kak (2013). *Yoga Tradition: It's History, Literature, Philosophy & Practice*, ISBN: 9781935387589, Hohm Press.
- ✚ Swami Vivekananda (2014). *Patanjali Yoga Sutras*, ISBN: 9788189297954, Vijay Goel.
- ✚ Swami Niranjanananda Saraswati (2012). *The Yoga of Sage Vasishtha* (1<sup>st</sup> ed.), ISBN: 9789381620182, Yoga Publications Trust.
- ✚ Swami Satyananda Saraswati (2009). *Kundalini Tantra* (2<sup>nd</sup> ed.), ISBN: 9788185787152, Yoga Publications Trust, Munger, Bihar
- ✚ Chandradha Sharma (2016). *A Critical Survey of Indian Philosophy* (16<sup>th</sup> ed.), ISBN-13: 978-8120803657, Motilal Banarsidass Publisher, New Delhi, India

## **Course Name: FUNDAMENTALS OF AYURVEDA**

### **Learning Objectives**

After going through this course student will be able to

- ✚ learn the basic concepts of Dosha, Dhatu and Malas in Ayurveda
- ✚ learn the basic concepts of disease prevention and treatment as mentioned in Ayurveda

### **Unit - I**

**Concept of Doshas, Dhatus, Malas and Agni:** Introduction to Ayurveda, origin and history of Ayurveda, Treatises of Ayurveda, Branches of Ayurveda, Concept of Ayu, arogya and roga

### **Unit – II**

**Concept of Doshas, Dhatus, Malas and Agni:** Concept of doshas, its functions, subtypes and treatment of imbalanced doshas. Concept of dhatus and malas. Concept of agni, Types of agni. Concept of Ama. Prakruti and its types

### **Unit - III**

**Concept of Health and Disease:** Concept of health according to Ayurveda. Dinacharya, Ritucharya and Ritusandhi- features and significance. Preventive Healthcare; Concept of Diet and drinkables. Shatkriyakala. Concept of disease and its classification; Concept of drugs in Ayurveda

### **Unit - IV**

**Ayurveda treatments:** Types of Ayurveda treatments. Shodana and Samana treatments. Purification procedures Vaman, virechana, nasya, bastiprocidures, indications and benefits.

### **Books for Reference**

- ✚ Todd Caldecott (2006). *Ayurveda: The Divine Science of Life*, ISBN: 9780723434108, Mosby Elsevier
- ✚ Dr. Ram Karan Sharma, Vaidya Bhagwan Dash (2012). *Caraka Samhita* (1<sup>st</sup> ed.), ISBN: 9788170800712, The Chowkhamba Sanskrit Series Office.

✚ K.R. Srikantha Murthy (2014). *AshtangaHridayam*, ISBN: 9788121800228, Chaukhamba Sanskrit Series.

✚ Swami Sada Shiva Tirtha (1998). *The Ayurveda Encyclopedia: Natural Secrets to Healing, Prevention, and Longevity*. ISBN:978-0965804226, Ayurveda Holistic Center Press

**Course Name: HEALTH PSYCHOLOGY AND COUNSELLING**

### **Learning Objectives**

After the end of this course, students will have good amount of skills in

- ✚ counseling the participants
- ✚ understanding the Psychology w.r.t. attitude, behavior and personality of an individual
- ✚ understanding the factors that determine the health of an individual and society at large.

### **Unit – I**

**Health Psychology:** Concept, Assumptions, Biomedical and Bio psychosocial models; **Theories:** Social Cognitive Theory, Theory of Planned Behaviour, Health Belief model, Protection – motivation theory, Trans – theoretical model of behaviour change, Self-regulatory model, latest trends.

### **Unit-II**

**Health Promotion and Illness Prevention:** Health and Behaviour; Changing health habits; Cognitive behavioural approaches to health behaviour change; **Health Care System:** Indian Scenario, Attitude of Health Professionals, Burnout in health professionals, Designing health care work environment, Future challenges for health care, Growth of Health Psychology.

### **Unit-III**

**Introduction to Counselling:** Definition; Concept; Scope; Characteristics of a Good Counsellor; Ethics in Counselling; **Approaches to Counselling:** Psychoanalysis; Behaviouristic; Humanistic; Cognitive

### **Unit – IV**

**Application of Counselling:** Family set up; Educational set up; Organizational set up; Clinical set up; **Types of Counselling:** Individual Counselling; Group Counselling; Family Counselling; Premarital and Marital Counselling; Career Counselling

## **Books for Reference**

- ✚ Ogden J (2012). Health Psychology. McCrawhill Foundation
- ✚ Morrison V & Bennett P (2009). Introduction to Health Psychology(2nd Ed) Pearson Education Limited, New York.
- ✚ Sarafino E P (1994). Health Psychology, Biopsychosocial interactions. John Wiley & Sons, New York.
- ✚ Taylor S E (2009). Health Psychology (9th Ed). New Delhi: Tata McGraw-Hill Publishing Company Ltd.
- ✚ Hough, M. (2006). Counseling Skills and Theory. Hodder Arnold
- ✚ Gladding, S.T. (2009). Counseling: A Comprehensive Profession. New Delhi: Pearson Education, Inc.

***Course Name: RESEARCH ADVANCES IN YOGA THERAPY***

***Course Code: YTDE-111***

## **Learning Objectives**

After completing this course, students will be able

- ✚ to enhance the knowledge of existing evidence for yoga therapy in various chronic disorders
- ✚ to learn evidence based yoga therapy modules for different chronic disorders
- ✚ to understand different investigating methods in yoga therapy research

## **Unit - I**

Learning about different search engines and online searching method, understanding key words and article searching, advances searches.

## **Unit - II**

Online search and reading research article of yoga studies in musculoskeletal disorders (chronic low back pain, osteoarthritis, rheumatoid arthritis, ankylosing spondylosis and spondylitis), gastrointestinal disorders (constipation, gastritis, and inflammatory bowel disorders).

### **Unit -III**

Online search and reading research article of yoga studies in mental health (anxiety, depression, stress, bipolar disorder, schizophrenia and addictions), yoga for neurological disorders (migraine, Parkinson's disease, multiple sclerosis, stroke, epilepsy)

### **Unit - IV**

Online search and reading research article of yoga studies in cardiovascular disorder (ischemic heart disease, hypertension, post CABG care, congestive cardiac disease), Respiratory disorders (asthma, chronic obstructive lung disease, ILD, tuberculosis)

### **Books for Reference**

Course material will be chosen based on the instruction of the teacher.

***Subject Name: APPLICATION OF BIOMECHANICS AND KINESIOLOGY IN YOGA***

***Subject Code: YTDE-105***

### **Learning Objectives**

After the end of this course, the students will be able to

- ✚ Understand the basic concepts of Biomechanics and Kinesiology required for Yoga practice.
- ✚ Correlate and apply this knowledge while performing
- ✚ Incorporate these principles in Yoga therapy for better acceptance in the scientific world

### **Unit –I**

Exercise and sports biomechanics basic concepts of kinematics and kinetics –vectors, motion, degrees of freedom, force, moment of force, equilibrium; Biomechanical considerations in reducing sporting injury rates.

### **Unit –II**

Posture static and dynamic posture, postural diversity within individuals, posture and its relationship to somatotype posture assessment, desirable postures for high level sport performance, modifying posture and technique to improve performance.

### **Unit –III**

Movement patterns – the essence of sports biomechanics, Qualitative analysis of sports movements, More on movement patterns – the geometry of motion, Quantitative analysis of movement, Causes of movement – forces and torques.

### **Unit-IV**

Meaning of Kinesiology, Aims and Objectives of Kinesiology, Role of Kinesiology in Sports; Anatomical Position, Principles of Plane and Axis, Various types of movements; Joint flexibility, Technique to increase the flexibilities, Structure, function, fundamental movements around major joints.

### **Books for Reference**

- ✚ Clinical Mechanics and Kinesiology with web Resource, Human Kinetics, by Janice Loudon, Robert Manske, Michael Reiman.
- ✚ Biomechanics and Kinesiology of Exercise – 2013 by Michael Yessis.
- ✚ Cynthia C. Norkin, Pamela K. Levangie : Joint structure & function- A comprehensive analysis 2<sup>nd</sup> edition.
- ✚ Rasch and Burk: Kinesiology and Applied Anatomy, Lee and Fabiger.
- ✚ Shaw, Dhanonjoy, Kinsiology and Biomechanics of Human Motion, KhelSahitya Kendra, 1998.
- ✚ Luttgens K., Hamilton N.: Kinesiology – Scientific Basis of Human Motion 9th Edi.
- ✚ Basic Biomechanics 4th edition, Susan J. Hall, MCGraw Hill.

***Course Name: YOGA FOR PREVENTION AND PROMOTION OF HEALTH***

### **Learning Objects**

Following the completion of this course, students will be able to

- ✚ identify and describe major public health challenges.
- ✚ evaluate different approaches to health promotion and disease prevention
- ✚ understand how public health challenges are prevented by yoga.

## **Unit-I**

**Introduction:** Importance of promotion of health and prevention of health problems. Identification of different systems of body to strengthen, prevent personality hazards and to promote positive personality. Perspectives on Health Promotion

## **Unit-II**

**Yoga for Behavior change and Risk reduction:** Tobacco Use Prevention and Cessation, Alcohol and Drug Abuse, Physical Activity; Behavior change for preventing disease and disability outcomes.

## **Unit - III**

**Yoga for Promotion of Health of Special Population:** Understanding stress, Physiological changes due to stress, Stress management; Promoting the Health of Women, Children and Adolescents.

## **Unit-IV**

**Yoga for Geriatric Care:** Promotion of positing in Geriatric population

## **Recommended Books**

- Ralph J. DiClemente, James M. Raczynski (1999). *Handbook of Health Promotion and Disease Prevention* (1<sup>st</sup> ed.). ISBN: 978-1-4613-7169-4, Springer US.
- Ananda Balayogi Bhavanani (2013). *YOGA CHIKITSA: Application of Yoga as a THERAPY* (1st ed.), Dhivyananda Creations, Pondicherry.
- Dr. R Nagaratha, Dr. H R Nagendra (2015). *Integrated approach of yoga therapy for positive health*. Swami Vivekananda Yoga Prakashana.

***Subject Name - YOGA PRACTICUM-IV***

***Subject Code – YOG - 402***

## **Learning Objectives**

Following the completion of this course, students will be able

- ✚ to confidently perform the advanced series of Asanas from the tradition of Bihar School of Yoga.
- ✚ to perform the Asanas, Relaxation and Meditation practices on their own very skillfully.

- ✚ to maintain a posture for much longer duration to satisfy the criteria of ‘Asana’ as described in Patanjali Yoga Sutra.
- ✚ to guide the participants in a Clinical set up
- ✚ to understand and implement the practices for self-health and society at large

## Unit-I

**BSY tradition Yoga postures-II:** Bandha Masta Utthanasana, Akarna Dhanurasana, Tadasana, Tiryaka Tadasana, Kati Chakrasana, Tiryaka Kati Chakrasana, Meru Prishthasana, Utthanasana, Druta Utkatasana, Samakonasana, Dwikonasana, Trikonasana, Utthita Lolanasana, Dolasana; Padmasana group of Asanas – Yogamudrasana, Matsyasana, Gupya Padmasana, Baddha Padmasana, Lolanasana, Kukkutasana, Garbhasana, Tolangulasana; **Backward banding Asanas:** Saral Bhujangasana, Bhujangasana, Tiryaka Bhujangasana, Sarpasana, Ardha Salabhasana, Shalabhasana, Saral Dhanurasana, Dhanurasana, Kandharasana, Ardha Chandrasana, Utthana Pristhasana, Setu Asana, Gomukhasana,

## Unit-II

**BSY tradition Yoga postures-III: Forward Bending Asanas –** Saithalyasana, Paschimottanasana, Gatyatmak Paschimottanasana, Pada Prasar Paschimottanasana, Janu Sirshasana, Ardha Padma Paschimottanasana, Hasta Pada Angustahasana, Meru Akarshanasana, Padahasthasana, Sirsha Angustha Yogasana, Utthita Janu Sirshasana, Eka Padattanasana, Meru Vakrasana, Bhu Namanasana, Ardha Matsyendrasana, Parivritta Janu Sirshasana

## Unit-III

**BSY tradition Yoga postures-IV: Inverted Asanas – Bhumi Pada Mastakasana, Moordhasana, Vipareeta Karani Asana, Sarvangasana, Padma Sarvangasana, Poorva Halasana, Halasana, Druta Halasana, Stambhan Asana, Sirshasana, Salamba Sirshasana, Niralamba Sirshasana, Oordhwa Padmasana, Kapali Asana; Balancing Postures –** Eka Pada Pranasana, Natavarasana, Garudasana, Tandavasana, Saral Natarajasana, Natarajasana, Eka Padasana, Bakasana, Utthita Hasta Padasthasana, Merudandasana, Niralamba Paschimottanasana, Ardha Padma Padottanasana, Ardha Baddha Padmottanasana, Vatayanasana, Padasthhasana, Baka Dhyanasana, Eka Pada Baka Dhyanasana, Dwi Hasta Bhujangasana, Eka Hasta Bhujangasana, Hamsasana, Santolanasana, Vashishthasana,

## Unit – IV

BSY Advanced Group of Asanas: Poorna Bhujangasana, Koormasana, Poorna Shalabhasana, Poorna Dhanurasana, Dhanurakarshanasana, Prishthasana, Parighasana, Chakrasna, Hanumanasana, Brahmacharyasana, Grivasana, Sirshapada Bhumi Sparshasana, Poorna Matsyendrasana, Mayurasana, Padma Mayurasana, Moolabandhasana, Gorakshasana, Astavakrasana, Vrischikasana, Eka Pada Sirsasana, Utthana Eka Pada Sirsasana, Dvi Pada Sirsasana, Dwi Pada Kandharasana, Padma Parvatasana, Kashyapasana, Vishwamitrasana;

**Meditation techniques:** Kayastharyam, Preksa Meditation, Chakra Meditation (Anahata, Visuddhi, Ajna and Sahashrara), Daharakasha Dharana, Ajapjapa

### Books for Reference

- ✚ Swami Satyananda Saraswati (2015). Asana, Pranayama, Mudra, Bandha (1<sup>st</sup> edition), ASIN: B017TKDH10, Yoga Publications Trust, Munger, Bihar, India
- ✚ Swami Niranjanananda Saraswati (1999). Dharana Darshan (2<sup>nd</sup> ed. ), ISBN-10: 9788186336304, Yoga Publications Trust, Munger, Bihar, India