

**Guru Gobind Singh Indraprastha University**  
Sector 16-C, Dwarka, Delhi. (India)

# **Scheme of Examination, Evaluation and Syllabus**

## **for**

### **MASTER OF SCIENCE (YOGA SCIENCE)**

**M.Sc. (Yoga Science)**

### **2 years duration**

**(4 semesters)**

w.e.f. Academic Year 2019-20

**Under**



**GURU GOBIND SINGH  
INDRAPRASTHA  
UNIVERSITY**



## **MORARJI DESAI NATIONAL INSTITUTE OF YOGA**

**MINISTRY OF AYUSH, GOVT. OF INDIA**  
68, Ashoka Road, Near GoleDakKhana, New Delhi-110001

## MASTER OF SCIENCE (YOGASCIENCE) – MSc. (Yoga Science)

### Preamble

The tradition of Yoga has always been passed on individually from teacher to student through oral teaching and practical demonstration. The formal techniques that are now known as Yoga are, therefore, based on the collective experiences of many individuals over many thousands of years. The particular manner in which the techniques are taught and practiced today depends on the approach passed down in the line of teachers supporting the individual practitioner. Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on establishing harmony between mind and body; thought and action; restraint and fulfilment; harmony between man and nature and a holistic approach to health and well-being. Yoga is not about exercise but about discovering the sense of oneness with ourselves, the world and Nature. It is an art and science for healthy living.

The word "Yoga" is derived from the Sanskrit root 'yuj' meaning "to join", "to yoke" or "to unite". Therefore the aim of yoga is to unite the individual consciousness with the supreme consciousness. Yoga is a science and art of living; also it is a body of techniques that lead us to consciously connect with ourselves and with life. As yoga is an art and science, there is no dogma or belief system attached to it. Yoga tells us to do a certain practice and feel its effect following the practice, e.g. if we breathe slowly in a relaxed manner we will slow our heart rate; if we focus the mind we will develop mental peace and deep insight.

In addition to this, Yoga is becoming popular day by day and has become a wave which is sweeping across the globe. In this course we introduce yoga as a science of Holistic living and not merely as Yoga postures. During the course, the student is taught the concepts of Yoga for the treatment and prevention of various psychosomatic and life style related ailments. This course has the vision of producing Yoga professional so that they could teach Yoga therapy in the paramedical department of a hospital with the ability to select specific safe practice modules for different diseases.

### 1. Title of the Programme

The programme shall be called "**Master of Science in Yoga Science**" / **M.Sc. (Yoga Science)**

### 2. Aim of the Programme

The aim of the programme is to produce competent **Yoga Professionals cum Yoga therapist**.

### 3. Objectives of the programme

- Promoting the awareness for positive health and personality development in the student through Yoga.

- Instilling and inculcating the general interest and inquisitive knowledge about Yoga for Health, personality development and spiritual evolution.
- To teach Yoga therapy to students for prevention and treatment of life style diseases.
- To produce man - power to give Yoga Training and Yoga Therapy at all levels.
- To assist physicians/ consultants to give Yoga Training and Therapy at hospitals.
- To generate manpower to assist in Yoga Research Projects.
- To encourage the pupil to be a global citizen, serving the human beings at large through the noble profession of Yoga.

#### **4. Scope:**

1. The scope of this programme is to make the master degree holder as a Yoga Professional & Yoga therapist to work in all kinds of Yoga and Research establishments.
2. They may also work as a research assistant in Yoga research projects

#### **5. Eligibility**

B.Sc. (Yoga Science) or a Science/Medical/Para-Medical/Physiotherapy Graduate with One year Diploma in Yoga Science with Minimum 50% marks from a recognized University or an Institute of National repute.

A candidate should be medically fit. A Medical Fitness Certificate in this regard issued from the Medical Officer of the Institute shall be produced. Candidates suffering from any chronic disease are advised not to seek admission to this course. Format of medical certificate is enclosed herewith.

#### **6. Duration**

The minimum duration of the programme will be 2 years (4 semesters) and the maximum duration will be four years.

#### **7. Syllabus**

The syllabus is designed to fulfil aforesaid objectives containing theory subjects, practical / laboratory work, Dissertation and field training in Yoga education, Yoga therapy and self-development through assignments etc.

**8. Medium of Instructions:** English

**9. Hours of Instructions:**

There shall be minimum SIX Hrs. of teaching every day at least five days in a week. In addition, there will be extra hours for Library/ Tutorials/ Personal-Practice etc.,

every day. Special classes may also be conducted on Saturdays/ Holidays (if necessary).

## 10. Scheme of Examination and Evaluation

- I. An academic year shall be apportioned into two semesters. There shall be semester-end examination after completion of each semester which will be notified by the University.
- II. The overall weightage of a course in the Syllabi and Scheme of Teaching and examination shall be determined in terms of credits assigned to the course.
- III. The evaluation of the students in a course shall have two components in the scheme of teaching and examination and syllabi.
  - Evaluation through a semester-end examination
  - Continuous evaluation by the teacher(s) of the course.
- IV. There shall be FOUR (04) semester-end examinations. First semester-end examination will be held preferably in the month of DECEMBER and second semester-end examination will be held preferably in the month of May- JUNE. Semester-end examinations will be comprised of both theory and practical papers.
  - All semester-end examinations will be held as per the University schedule and will be notified by the Controller of Examination.
  - Candidates are allowed to write the said examinations in English
  - The duration of each theory paper in semester- end examinations of 70 Marks shall be 3.00hours.
  - Each theory paper shall comprise questions from all the units with internal choices, covering the entire syllabus.
- V. Apart from the Semester - end examinations there shall be **one Class Test/ Assignments etc. in each Semester as part of Teacher/s Continuous evaluation of the Course.**
  - a. The date/s, timings and the scheme of question papers etc. for these class tests/ assignments shall be prepared by the concerned subject teachers in consultation with Course Co-ordinator / Director of the Institute and University. The results of these unit tests shall be displayed on the notice board of the Institute for the information of the students.
- VI. The distribution of weightage for various components of evaluation shall be as below:

<b>A. THEORY COURSES</b>	<b>(For 100 Marks)</b>
(i) Semester-end examination	70%
(ii) Continuous evaluation by the teachers	30%
<b>B. PRACTICAL COURSES</b>	

- |      |                                       |     |     |
|------|---------------------------------------|-----|-----|
| (i)  | Semester-end examination              | 70% |     |
| (ii) | Continuous evaluation by the teachers |     | 30% |

## VII. THEORY COURSES

<b>A.1 Semester-end examination</b>	<b>Total Marks: 70</b>
<b>Q. I. Multiple Choice/ Answer in a sentence or two/ Objective type questions</b>	<b>(1 Mark Each)</b>
(Questions from all the Units and all are compulsory)	<b>10x1=10 Marks</b>
<b>Q.II. Short Note type questions</b>	<b>(5 Marks Each)</b>
(Questions from each unit with a choice)	<b>6x5=30 Marks</b>
<b>Q.III. Long Answer/ Essay/ Short Essay type questions</b>	<b>(10 Marks Each)</b>
(Questions from each unit with a choice)	<b>3x10=30Marks</b>

**Note: The format of the Semester-end Examination for Theory Courses has given herein**

### **A.2. Continuous evaluation by the teachers: Total marks: 30**

(i)	One class test*	20 marks
(ii)	Attendance:	06 marks
	(90% & above	06 marks
	80% and above	04 marks
	70% and above	02 marks
	Below 70%	00 marks
(iii)	Participation in socio-cultural activities, monthly lectures, workshops, Sports, discipline etc.	04 marks

\*The class test shall ordinarily be held after 8 weeks of teaching.

**The format of the Class Test for Theory Courses has given herein**

## VIII. PRACTICAL COURSES

### **A.1. Semester-end Examination Total marks: 70**

There shall be Semester-end examinations of each practical course and distribution of marks shall be as per the marks mentioned in each syllabus.

### **A.2. Continuous evaluation by the teachers Total marks: 30**

**A.2.1.** The teachers Continuation evaluation shall be based on:

- |      |   |           |
|------|---|-----------|
| (i)  | Performance in the one practical class test | marks: 20 |
| (ii) | Punctuality and practical performance in    |           |

	regular practical classes	marks: 5
(iii)	Subjective experience and Self-assessment Reports/Lab works etc. by the students	marks: 5

**A.2.2. FIELD WORK/CASE STUDY** **Total marks: 100**

**A.2.3. PROJECT WORK / DISSERTATION** **Total marks: 100**

The Field Work Report, Assignments, etc. shall be evaluated by the concerned in-charge Teacher/s and will be as per university rules and regulations.

**B.** The Course Coordinator shall verify the marks and submit them to the Director of the Institute or the faculty nominated by the Director.

**C.** In case of any problem in smooth conduct of the examinations, the decision of the Board of Examination/ University will be the final.

**IX. Marks and Gradation** - As per the Institute Rules. The 'final result' will comprise of the total marks obtained in all the Semesters and the passing percentage is 40% marks.

**FORMAT OF QUESTION PAPER**

**(For All Unit Tests)**

**Theory Courses**

**PAPER-\_\_\_ : \_\_\_\_\_**

**Max. Marks: 20**

**Duration: 1 Hr.**

**Note: Answer all the Questions.**

**Q.I Answer the following in a sentence or two.**

**Marks: 5 x 1= 5**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Q. II. Write short notes on the following.**

**Marks: 2X 3= 6**

1. \_\_\_\_\_ /OR \_\_\_\_\_
2. \_\_\_\_\_ /OR \_\_\_\_\_

**Q.III. Answer the following in detail**

**Marks: 1 X9= 9**

1. \_\_\_\_\_ /OR \_\_\_\_\_

**(Note: Assignments may also be given to the students instead of Class Test/s as desired by the class teacher)**

**FORMAT OF QUESTION PAPER FOR 70 MARKS**

**(For All Semester End Examinations)**

**Theory Courses**

**Max. Marks: 70**

**Duration: 3 hours**

**PAPER-\_\_\_: \_\_\_\_\_**

**Note: Answer all the Questions.**

**Q.I Answer the following in a sentence or two / Objective Type Marks: 10 x 1 = 10**

1. -----
2. -----
3. -----
4. -----
5. -----
6. -----
7. -----
8. -----
9. -----
10. -----

**Q. II. Write short notes on the following  
5=30**

**Marks: 6 X**

1. ----- /OR -----
2. ----- /OR -----
3. ----- /OR -----
4. ----- /OR -----
5. ----- /OR -----
6. ----- /OR -----

**Q.III. Answer the following in detail**

**Marks: 3 X10=30**



1. ----- /OR -----
2. ----- /OR -----
3. ----- /OR -----

**MASTER OF SCIENCE (YOGASCIENCE)**

**PROFORMA FOR MEDICAL EXAMINATION**

1. Name of the Student .....
2. Age/Sex .....
3. Father's/Husband's Name .....
4. Address with contact No. ....
5. Date of Birth .....

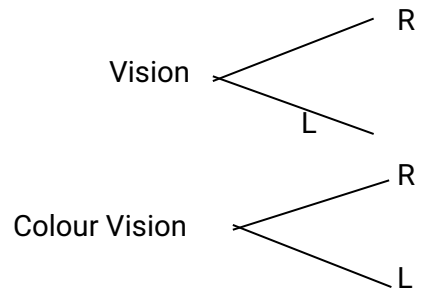
**Medical Examination:-**

**A. General Examination**

- Built
- Height
- Weight
- Pulse
- B.P.

**B. Systemic Examination**

- Chest
- CVS
- CNS
- Abdomen
- ENT
- EYE



Recommendation of the Senior Medical Officer: **FIT/UNFIT.**

Date: .....

**SENIOR MEDICAL OFFICER**

# **MASTER OF SCIENCE (YOGA SCIENCE)**

**M.Sc. (Yoga Science)**

**2 years (4 semesters)**

**Under**



**GURU GOBIND SINGH  
INDRAPRASTHA  
UNIVERSITY**

## **SCHEME OF COURSES**

**MORARJI DESAI NATIONAL INSTITUTE OF YOGA**

**MINISTRY OF AYUSH, GOVT. OF INDIA**  
68, Ashok Road, Near GoleDakKhana, New Delhi-110001  
E-Mail: [mdniy@yahoo.co.in](mailto:mdniy@yahoo.co.in) Website: [www.yogamdniy.nic.in](http://www.yogamdniy.nic.in)

**MASTER OF SCIENCE (YOGA SCIENCE)**  
**Scheme of Teaching and Examination**

S.N.	Course Code	Course Name	Periods per week			Evaluation Scheme				Course Total
			L	T	P	Sessional			SEE	
						Credit	CT	TA		
<b>I Year</b>										
<b>Semester – I</b>										
1	MS-CT101	Foundations of Indian Philosophy	3	1	0	4	20	10	70	100
2	MS-CT102	Applications of Hatha Yoga in Health and Healing	3	1	0	4	20	10	70	100
3	MS-CT103	Human Anatomy and Physiology	3	1	0	4	20	10	70	100
4	MS-CT104	Therapeutic Yoga-I	3	1	0	4	20	10	70	100
5	MS-CP105	Yoga Practicum-I	0	0	12	6	20	10	70	100
6	MS-CP106	Anatomy & Physiology Practicum	0	0	4	2	20	10	70	100
<b>30+ Hrs</b>						<b>24</b>	<b>TOTAL</b>			<b>600</b>
<b>Semester – II</b>										
1	MS-CT201	Synthesis of Gita and Yoga Vasistha	3	1	0	4	20	10	70	100
2	MS-CT202	Applications of Patanjala Yoga in Health promotion	3	1	0	4	20	10	70	100
3	MS-CT203	Biomechanics and Kinesiology	4	1	0	5	20	10	70	100
4	MS-CT204	Therapeutic Yoga-II	3	1	0	4	20	10	70	100
5	MS-CP205	Yoga Practicum-II	0	0	12	6	20	10	70	100
6	MS-CP206	Biomechanics and Kinesiology Practicum	0	0	4	2	20	10	70	100
<b>30+ Hrs</b>						<b>25</b>	<b>TOTAL</b>			<b>600</b>

*CT- Core Theory, CP- Core Practical, PW-Project work, FW-Field Work, SEE – Semester End Examination, L - Lecture, T-Tutorial, P-Practical (practice/ field), CT- Cumulative Tests, TA - Teachers Assessment.*

**MASTER OF SCIENCE (YOGA SCIENCE)**  
**Scheme of Teaching and Examination**

S.N.	Course Code	Course Name	Periods per week			Evaluation Scheme				Course Total
						Sessional			SEE	
			L	T	P	Credit	CT	TA		
<b>II Year</b>										
<b>Semester – III</b>										
1	MS-CT301	Yogic concepts in Principal Upanishads and Yogopanishads	3	1	0	4	20	10	70	100
2	MS-CT302	Applied Bio-chemistry	3	1	0	4	20	10	70	100
3	MS-CT303	Therapeutic Yoga-III	3	1	0	4	20	10	70	100
4	MS-CT304	Research Methodology in Yoga	4	1	0	5	20	10	70	100
5	MS-CP305	Yoga Practicum-III	0	0	10	5	20	10	70	100
6	MS-CP306	Applied Biochemistry Practicum	-	-	4	2	20	10	70	100
7	MS-PW307	Project work	-	-	-	8	-	30	70	100
<b>30+ Hrs</b>						<b>32</b>	<b>TOTAL</b>			<b>700</b>
<b>Semester – IV</b>										
1	MS-CT401	Yoga and Human Consciousness	3	1	0	4	20	10	70	100
2	MS-CT402	Techniques of Psychological Counseling	3	1	0	4	20	10	70	100
3	MS-CT403	Physiological Effects of Yoga Practices	3	1	0	4	20	10	70	100
4	MS-CT404	Applied Yoga	3	1	0	4	20	10	70	100
5	MS-CP405	Practicum in Applied Psychology	-	-	4	2	20	10	70	100
6	MS-FW406	Field Work	-	-	-	4	-	30	70	100
7	MS-PW407	Dissertation	-	-	-	8	-	30	70	100
<b>30+ Hrs</b>						<b>30</b>	<b>TOTAL</b>			<b>700</b>

<b>Total number of Credits</b>	<b>111</b>	<b>Total marks</b>	<b>2600</b>
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*CT- Core Theory, CP- Core Practical, PW-Project work, FW-Field Work, SEE – Semester End Examination, L - Lecture, T-Tutorial, P-Practical (practice/ field), CT- Cumulative Tests, TA - Teachers Assessment.*

## **SEMESTER - I**

## Name of the course: Foundations of Indian Philosophy

Course code: MS-CT 101

### Course objectives:

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

- Appreciate the insight in the six systems of Indian philosophy.
- Explain the understanding of Yoga as a philosophy and inculcate the essence.
- Describe the various schools of philosophy like Buddhism, Samkhya, Mimamsa etc. which are relevant to Yoga practice.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical : Nil		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Nyaya and Vaisesika

(10Hrs)

- 1.1 Nature of physical world, Individual soul, liberation and concept of supreme soul in Indian philosophy
- 1.2 Theory of body, mind and soul and philosophical background.
- 1.3 The sixteen Padarthas according to Nyaya.
- 1.4 means of salvation according to Nyaya and Vaisesika, Means and objects of knowledge according to Nyaya and Vaisesika.
- 1.5 Category of substance-Nava dravyas, Category of quality-24 gunas, Relation between Nyaya and Vaisesika philosophy.

### Unit-2: Samkhya and Yoga

(15Hrs)

- 2.1 Theory of cause and effect; Prakriti and Purusha; Process of evolution of universe and concept of liberation.
- 2.2 Twenty five entities according to Samkhya and means of knowledge.
- 2.3 Satkarya Vada; Similarities and dissimilarities between Vyakta and Avyakta, Triguna; Existence of Purusa, plurality of Purusa, proximity of Purusa and Prakrti.
- 2.4 Karana, Antah Karana and Bahya Karana according to Sankhya Karika; Liberation

and means of attaining it.

2.5 Organization of the Yoga sutras, stages of Chittas, forms of Chitta, modification of Chittas, Kind of Kleshas, the eight fold of Yoga and concept of Ishwara and Kaivalya.

### **Unit-3: Mimamasa (Purva and Uttara) (15Hrs)**

3.1 Concept of vidya & avidya, Brahma(God), Maya, Atman, Universe, according to Uttaramimamsa

3.2 Means of knowledge -Pratyaksa, Anumana, Upamana, Sabda, Arthapatiand Anupalabdi according to Uttaramimamsa.

3.3Atheism, Dharma in the context of Purvamimasa.

3.4 Praman, Prameya, Khyativad and karyakaranavad according to Purvamimasa.

3.5 Major teachings of Mimamsa system; Selfless action, nonattachment, self-control, self-discipline.

### **Unit-4: Naastika philosophy (05Hrs)**

4.1 Carvaka philosophy: Metaphysics and Epistemology.

4.2 Buddhism: Four noble truths, Pramanas, Arya-ashtangika Marga.

4.3 Jainism: Categories, Triratnas , Syadvada, Anekantavad.

### **TEXT BOOKS**

1. C.D. Sharma: Critical Survey of Indian Philosophy, MotilalBanarsidass Publications 2003.
2. N. V. Banerjee: The Spirit of Indian Philosophy, Arnold-Heinemann Publishers, 1974.

### **REFERENCE BOOKS**

1. J.N. Mohanty: Classical Indian Philosophy, Published by Rowman & Littlefield, 2000
2. P.T. Raju : Structural Depths of Indian Thought, SUNY Press, 1985
3. S. N. Dasgupta: A History of Indian Philosophy Vol.1, MotilalBanarsidass Publications, 1992
4. T.M.P. Mahadevan: Invitation to Indian Philosophy, Arnold-Heinemann Publishers, 1974





## Name of the course: Applications of Hatha Yoga in Health and Healing

Course code: MS-CT 102

### Course objectives:

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

1. Apply its value in education.
2. Apply its value practically for the management of stress.
3. Introduce its value and insights for persons with special need.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : 100</b>		<b>Practical :</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit- I: Applications of Hatha Yoga Practices according to Hathayogapradipika(12 Hrs)

- 1.1. Greatness of Hathayoga, Hathayogiparampara, Importance of Hatha and its secrecy. Place of Hathayoga practice, Destructives (BadhakTattva) and constructive (SadhakTattva) of Hathayoga, Yama and Niyama.
- 1.2. Asana- techniques, benefits and precautions. Mitahara, Pathya and Apathya,Pranayama (Kumbhalas) – Techniques, Benefits and Precautions of Pranayama, Nadishuddi, Duration and time for Pranayama practice, gradation of Pranayama.
- 1.3. Satkriyas, Gajakarani,.Hathayogasiddhilakshanam, Kundalini as base for all Yoga. Results of KundaliniPrabodhana, Synonyms for Sushumna,
- 1.4. Mudras and Bandhas-techniques, benefits and precautions of practices.Kandaswarupa. Methods of Samadhi Practice, Synonyms for Samadhi, Rajayoga, Relationship between Hatha Pradipika and Rajayoga, Shambhavimudra, Unmani, Manonmani Nada and Nadanusandhana, Four stages of Nadanusandhan.

## **Unit-II: Holistic approach of Yoga Therapy**

**(12 Hrs)**

- 2.1. Principles of Yoga therapy related to Indian System of Medicine – Tridosha, Dhatu, Mala, Shad Rasa. Dinacharya, Sadvrta, Abhyanga, Vyayama, Ritucharya, Ritusandhi. A general survey of preventive, promotive and curative aspects of yoga Therapy Viz. Asana, Pranayama, Mudra, Kriya etc.
- 2.2. Ghatayoga and its applications:Ghatayoga – Introduction, Saptanga yoga, Benefits. Satkriyas – Classification, Practicing methods and benefits. Asana– Classification, Practicing methods and benefits.
- 2.3. Mudra – Introduction, 25 Mudras – Classification, Practicing methods and benefits.Pratyahara– Classification, Practising methods and benefits. Pranayama– Classification, Practicing methods and benefits.
- 2.4. Meditation– Classification, Practicing methods and benefits. A comparative study of Hathayoga, Ghata yoga, Shiva Yoga and other Hatha Yoga Texts.

## **Unit-III: Application of Hatha Yoga in sports**

**(12 Hrs)**

- 3.1.Physical Level: Physical Stamina; strength; Endurance; Muscle tone; flexibility through asanas, diet and kriyas ; Kriyas (Cleansing of internal organs for clearing the tissue toxins before and after the intense training);
- 3.2. Vital Level: Pranayama (for Lung capacity); Mental Level: Gain mastery over the Mind, concentration, focusing, Reduction of Ego; Development of positive and good qualities.
- 3.3. Reduction of aggressive nature; through Meditation and Breathing Techniques; improved Cognitive abilities– Focus, creative skills and clear thinking; Willpower, Creativity;
- 3.4. Spiritual Level: concept of using sports for spiritual growth through intensified awareness;

## **Unit-IV: Application of Hatha yoga in rehabilitation**

**(09Hrs)**

- 4.1. Yoga for Cardiac Disorders,
- 4.2. Yoga for Respiratory Disorders,

4.3. Yoga for Cancer& palliative care,

4.4. Yoga for caregivers & Yoga for psychiatric disorders.

#### **TEXT BOOKS**

1. Sahay G.S. : Hatha Yoga Pradeepika of Swatmarama, MDNIY Publication, 2013.
2. Swami Niranjanananda : Gherand Samhita , Bihar School of Yoga, Munger, Bihar-2011.

#### **REFERENCE BOOKS:**

1. Sharma BR : Jotsna (Comentory of Hatha Yoga Pradeepika) Kaivalyadhama, Lonavala, 2013
2. Gharote, M.M. : Therapeutic references in Traditional Yoga Texts, The Lonavla Institute, Lonavla, 2010.
3. Gharote ML : Hatharatnavali, The Lonavala Yoga Institute, Lonavala, Pune, II nd Edition, 2009
4. Swami Digambaraji (1970), Hathapradipika of Swatmarama, Kaivalyadhama, Lonavala, Pune - 410403.
5. Woods, J.H.: The Yoga System of Patanjali, M.L.B.D., Delhi, 1988
6. Swami Vivekananda : Rajayoga, Advaita Ashram, Culcutta, 2000.
7. Rukmini T.S.: Yoga Vartika of Vijnanbhikshu (Tr.) Vol I, II, III & IV, Munshiram Manoharlal Pvt. Ltd. New Delhi
8. Swami Niranjanananda Hathayogapradipika, Bihar School of Yoga, Munger, Bihar -1997
9. Swami Digambarji & Gharote MM: Gheranda Samhita , Kaivalyadham , Lonewala-1978

## Subject Name: Human Anatomy and Physiology

### Subject Name: MS-CT 103

#### Objectives:

Following the completion of the course, students shall be able:

- To know about the structure of the body
- To know about the necessary functions of the body

<b>Total Number of Hours: 45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	3	1	0
Hours/ week	3	1	0
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : 100</b>		<b>Practical : Nil</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
70	30		

#### **Unit-1: General Physiology and Musculo – Skeletal system (07 Hrs)**

- 1.1. Electron microscopic structure of organelles of eukaryotic cells. Functions of organelles of eukaryotic cells.
- 1.2. Definition of Human Anatomy and Human Physiology. Homeostasis. Mechanisms to maintain milieu environment. Positive and Negative Feedback mechanism.
- 1.3. Skeletal system: Structure and functions of bone. Classification of bone and Joints. Names of bone of different skeleton.
- 1.4. Nerve – Muscle Physiology: Neuron. Neuroglia, Receptor, Synapse, Neurotransmitter, Reflex activity. Types of muscle. Mechanism of muscle contraction. Neuro – muscular junction. Action potential, Electromyogram, Muscle endurance.

#### **Unit-2: Hematology (06 Hrs)**

- 2.1. Haematology: Composition of blood. Functions of component of blood, RBC and Haemoglobin. WBC and Immunity, Platelets and Blood clotting. Blood groups and their importance. Macrophage.
- 2.2. Lymphatic system and lymph.

#### **Unit-3: Biomolecules and Digestive system (07 Hrs)**

- 3.1 .Biomolecules: Carbohydrates, Fats, Proteins, Minerals, Vitamins, Dietary fibres balanced diet.
- 3.2 .Anatomy of digestive tract, Functions of digestive system. Mouth and salivary gland, stomach, Phases and mechanism of gastric juice secretion. Pancreas, Liver, gall bladder, Small Intestine, and large intestine, GI hormones, Movements of GI tract.
- 3.3 Absorption of carbohydrate, protein and fat.

**Unit-4: Respiratory and Cardiovascular system (07 Hrs)**

- 4.1 .Tracheo-bronchial tree, Mechanism of breathing; Exchange and transport of respiratory gases (oxygen and carbon dioxide). Lung function test. Ventilation, Regulation of respiration.
- 4.2.Structure of heart. Cardiac cycle. Heart sound, Heart rate. Blood pressure and regulation of blood pressure. Cardiac output. Coronary circulation, cerebral circulation.
- 4.3.Electrocardiography. Vector, Arrhythmia, Electrolyte concentration change in heart.

**Unit -5: Endocrinology (06 Hrs)**

- 5.1 Structure and function of and Mechanism of action of hormones of major of endocrine glands such as Pituitary, Adrenal, Thyroid, Parathyroid, and Endocrine function of Pancreas, gonads. Gastro - Intestinal tract hormones, local hormones. Endocrine function of other organs.

**Unit -6: Nervous system and special senses (06 Hrs)**

- 6.1.Spinal Cord, Thalamus, Hypothalamus, Basal ganglia, Cerebral cortex, Proprioceptors, Posture and Equilibrium, Higher Intellectual Function.
- 6.2.Peripheral nervous system: Autonomic nervous system-Sympathetic and somatic nervous system.
- 6.3.Special senses. Structure and function of eye, ear, nose, tongue and skin.

**Unit -7: Excretory and Reproductive system (06 Hrs)**

- 7.1 Kidney. Nephron, Juxtaglomerular Apparatus, Urine formation, Concentration of Urine, Acidification of Urine, Micturition.
- 7.2 Role of other organs on excretion in humans. Acid-base balance.

7.3 Structure and function of male and female reproductive organs

7.4 Menstrual cycle. Ovulation, Menopause. Gametogenesis. Fertilization. Pregnancy, Infertility

### **TEXT BOOKS**

1. Jain AK: Text Book of Physiology (Volume I and II), Avichal publishing company

### **REFERENCE BOOKS:**

1. Bijlani R. L.: Understanding of Human Physiology, Jaypee Brothers Medical Publishers Pvt. Ltd, New Delhi, 2011
2. Chaurasia, BD: Human Anatomy
3. Guyton and Hall: Text book of Medical Physiology
4. Jain AK: Text Book of Physiology (Volume I and II), Avichal publishing company
5. Khurana I: Text book of Medical Physiology
6. Mahapatra A.B.S.: Essential of medical Physiology, Current book Int.
7. Pal G. K & others: Textbook for practical Physiology, Orient Longman Pvt. Ltd, Hyderabad, 2007
8. Raju SM; Madala, Bindu: Anatomy and Physiology for general nursing.
9. Sembulingam K; Sembulingam P: Essentials of Physiology for Dental students.
10. Singh, Inderbir: Anatomy and Physiology for nurses, Jaypee Brothers, New Delhi.





**Name of the course: Therapeutic Yoga - I**

**Course code: MS-CT104**

**Course objectives:**

**Objectives:**

- To be able to understand the various diseases / disorders in human being and how Yoga helps to prevent and manage those diseases / disorders.
- To be able to know the precautions, do's and don'ts of Yoga practices to specific diseases / disorders.
- To be able to prescribe suitable Yogic diet regime.
- To be able to make disease specific Yoga therapy protocol.

<b>Total Number of Hrs: 45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	3	1	0
Hrs/ week	3	1	0
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : 100</b>		<b>Practical :</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
70	30		

**Unit-1: Yogic Management of Musculo-Skeletal Disorders**

**[15Hrs]**

- 1.1. Introduction to Musculo-Skeletal Disorders: Back Pain (Lumbago, sciatica, disc herniation / Intervertebral disc prolapse (IVDP), Ankylosing Spondylitis, Lumbo sacral strain), Neck pain (Cervical Spondylosis), Fibromyalgia and Muscular dystrophy
- 1.2. Role of Yoga practices on various Musculo-Skeletal disorders like Back Pain, Neck pain, Arthritis, Fibromyalgia and Muscular dystrophy.
- 1.3. Role of Yogic Diet on Musculo-Skeletal Disorders
- 1.4. Research studies on Yogic management of Musculo-Skeletal Disorders.

**Unit-2: Yogic Management of Respiratory disorders**

**[15 Hrs.]**

- 2.1. Introduction to Respiratory Disorders: Bronchial Asthma, Bronchitis, Emphysema, Allergic Rhinitis, Sleep apnea, Sinusitis, Pneumonia and Interstitial Lung Disease
- 2.2. Role of Yoga practices on various Respiratory Disorders such as Bronchial Asthma, Bronchitis, Allergic Rhinitis, Sleep apnea & Sinusitis.
- 2.3. Role of Yogic Diet on Respiratory Disorders

## 2.4. Research studies on Yogic management of Respiratory Disorders.

### **Unit-3: Yogic Management of Cardio-Vascular disorders**

**[15 Hrs]**

- 3.1. Introduction to Cardiovascular disorders: Hypertension, Atherosclerosis / Coronary artery disease, Ischemic Heart disease – Angina pectoris / Myocardial Infarction and Cardiomyopathy
- 3.2. Role of Yoga practices on various Cardiovascular disorders like Hypertension, Atherosclerosis / Coronary artery disease, Angina pectoris / Myocardial Infarction
- 3.3. Role of Yogic Diet on Cardiovascular disorders
- 3.4. Research studies on Yogic management of Cardiovascular disorders.

### **TEXT BOOKS**

1. Dr Robin Monro, Dr R Nagarathna and Dr H R Nagendra, Yoga for common ailments, Gaia Publishers
2. Nagarathna R and Nagendra HR, Yoga therapy for common ailments series, SVYP publications, 2010
3. Swami Karmananda, Yoga therapy for common diseases, Yoga publication trust, Munger, 2001

### **REFERENCE BOOKS**

1. A.K. Das (Ed.): Medicine Update. Bombay: Association of Physicians of India, 1998.
2. Aatreya, Shanti Parkash: Yoga Manovigyan, Indian Psychology, International Standard Publication, Varanasi; 1965
3. Abhedananda: The Yoga Psychology Ramakrishna Vedanta, Math, Calcutta, 1973.
4. Bhavanani, A.B. (2008). Yoga For Health And Healing. Pondicherry, India: Dhivyananda Creations.
5. Bhavanani, A.B. (2013). Yoga Chikitsa: Application of Yoga as a therapy. Pondicherry, India: Dhivyananda Creations.
6. Bhavanani, A.B. (2014). A primer of yoga theory (4<sup>th</sup> ed.). Pondicherry, India: Dhivyananda Creations.
7. Harrison: Principles of Internal Medicine, International Edition, 14th Edition, New York: McGraw Hill Co. Inc., 1998.
8. MDNIY publications: 10 Booklets, Yoga Therapy Series, MDNIY Publications, New Delhi, 2009
9. Nagarathna R and Nagendra H R: Yoga for Arthritis, Back pain, Diabetes, Pregnancy Breathing Practices, Swami Vivekananda Yoga Prakasana, Bangalore, 2000
10. Rai, Lajpat: Discovering Human Potential energy: A Physiological Approach to Yoga

(AnubhavaRai Publications, 1998)

11. Ramanathan, M. (2007). Applied Yoga-Application of Yoga in Various Fields of human Activity. Puducherry: Aarogya Yogalayam.
12. Ramesh Bijlani: Back to Health through Yoga, Rupa Publications India Pvt. Ltd, 2011
13. Swami kuvalayananda and S.L. Vanikar: Yoga Therapy: Kaivalyadhama, Lonavala, Revised Edition
14. Swami SaraswatiShankardevananda: Yoga on Hypertension, Yoga publication trust, Munger.
15. Swami SaraswatiShankardevananda: Yogic Management of Asthma and Diabetes, Yoga publication trust, Munger.
16. Swami SatyanandaSaraswati: Yoga and Cardio Vascular Management, Yoga Publication Trust, Munger, 2005
17. Yogic Management of Respiratory Disorders-I V Basavaraddi

## Name of the course: Yoga Practicum-I

Course code: MS-CP105

### objectives:

Following the completion of the course, students shall be able to:

1. Understand the benefits, contraindications and procedure of all practices.
2. Demonstrate each practice with confidence and skill.
3. Explain the procedure and subtle points involved.
4. Teach the Yoga practices to any given group.

Total Number of Hrs: 120		Theory	Tutorial	Practical
Credits		0	0	6
Hrs/ week		0	0	12
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : -		Practical : 100		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

Practice of the following Yogic practices with brief theoretical knowledge about their importance of name, the technique, salient points, Do's & Don't, precautions to be taken and benefits of each of the following Yogic practices.

### Unit 1: INTRODUCTION TO HYMNS AND MANTRAS

1.1 Concept and Brief introduction to Pranav and hymns

1.2 Recitation of Pranav and Soham japa

1.3 Recitation of Pratah-smaran, Dhyana mantra, Pranayama Mantra, Asana Mantra, Shanti Mantras.

### Unit 2: SHATKARMAS BANDHAS AND MUDRAS

2.1 Demonstrating ability of performing shatkarma (Cleansing Process) Vamandhanti, Neti (Sutra and Jala), Kapalbhathi, Agnisara,

2.2 Practices of Jalandhara bandha, uddiyana bandha and mool bandha

2.3 Practices of Mahamudra, Bhairavi mudra, Yoni mudra.

### Unit 3: INTRODUCTIONS TO SUKSHMA VYAYAMA, STHULA VYAYAMA AND SURYANAMASKAR

3.1 Ucharan-sthal-tathtavishudhichakrashudhi

- 3.2 Budhitathadritishaktivikasaka
- 3.3 Medhashaktivikasaka
- 3.4 Kapolshaktivikasaka
- 3.5 Grivashakti vikasak
- 3.6 Vakshasthalshaktivikasaka (i and ii)
- 3.7 Katishaktivikasaka (i,ii,iv,v)
- 3.8 Janghaskativikasaka (i,ii)
- 3.9 Pindalishkativikasaka
- 3.10 Hridgati and sarvangpushti.
- 3.11 Yogic Surya Namaskar of BSY, Swami Dharendra Brahmachari and its Variations

#### **UNIT 4 INTRODUCTION TO ASNAS**

**Knowledge** of the five spinal movements – inverted, forward, backward, lateral twist and lateral bend and neutral positions of the spine

- Veerbhadrasana and its variations, Garudasana, Natrajasana,
- Paschimottanasana, Suptavajrasana, Vakrasana, Akarnadhanurasana, Gomukhasna,
- Makarasana, Bhujangasana, Salabhasana, Dhanurasana
- Urdhvamukhosvanasana
- Uttanapadasana, Halasana, Chakrasana, Matsyasana, Shavasana, Setubandhasana

#### **UNIT 5 INTRODUCTION TO PRANAYAMA AND MEDITATION**

**Knowledge and Demonstrated ability** to perform Breath awareness *Pratyahar, Dharana and dhyana*

- 5.1 Sectional breathing,
- 5.2 Anuloma Viloma pranayama
- 5.3 Nadishodhana Pranayama.

#### 5.4 Allied practices like *Japa Mala, yoga nidra and om meditation.*

#### **REFERENCE BOOKS:**

1. Basavaraddi, I.V. & others: Prataha Smarana, MDNIY New Delhi.
2. Basavaraddi, I.V. & others: Yogasana: A Comprehensive description about Yogasana, MDNIY, New Delhi, 2011.
3. Desikachar, Dr. Kausthub, The Heart of Asana, - April 1, 2012
4. Dr. Nagendra H R : Pranayama, The Art & Science, Swami Vivekananda Yoga Prakashan, Bangalore, 2005
5. Iyengar, B.K.S.: Light on Pranayama, Harper Collins, Swami Vivekanand Yoga Prakashan, 2012
6. Saraswati, Swami Satyananda: Surya Namaskar, Yoga Publication Trust, Munger, 2004
7. Sri Ananda : The Complete book of Yoga, Orient Course Backs, Delhi, 2003.
8. Swami Dharendra Bhramhachari: Yogasana Vijnana, Dharendra Yoga Publications, New Delhi, 1966
9. Swami Kuvalyananda : Asana, Kaivalyadhama, Lonavla, 1993
10. Swami Satyananda Saraswati : Asana, Pranayama, Bandha, Mudra, Bihar School of Yoga, Munger, 2006
11. Swami Satyananda: Yoganidra, Yoga Publication Trust, Munger, 1998
12. Vidwan T. Krishnamacarya(1981), Yogasanagalu, Prasara, Mysore University, Manipal power press, Manipal, Mysore 570012.

## Subject Name: ANATOMY & HUMAN PHYSIOLOGY PRACTICUM

### Subject Name: MS-CP106

#### Objectives:

The objectives behind teaching Anatomy and Physiology is to

- Make students familiar with the systems of the body.
- Understand the principles and procedure of every experiment.
- Demonstrate an experiment with the interpretation of the results.
- Explain the procedure of each step of an experiment skillfully.

<b>Total Number of Hours: 45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	0	0	2
Hours/ week	0	0	4
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : -</b>		<b>Practical : 100</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
		70	30

#### Unit-1: Hematology

(12 Hrs)

- 1.1 Method of Collection of Blood, Estimation of Hemoglobin, Bleeding time, Clotting time, Blood grouping,
- 1.2 Total Red Blood Cell Count, Total White Blood Cell Count, Differential White Blood Cell Count,
- 1.3 Erythrocyte Sedimentation Rate, Packed cell volume.

#### Unit-2: Anthropometry measurements

(12 Hrs)

- 2.1 Weight, stature, eye height, Body Mass Index, Body Surface Area
- 2.2 Shoulder height, elbow height, head circumference, neck circumference, mid upper arm circumference, chest circumference, waist circumference, hip circumference, waist hip ratio.
- 2.3 Measurement of fat percentage.

#### Unit-3: Physiological parameters and clinical examination

(12 Hrs)

- 3.1 Introduction to clinical examination.
- 3.2 Recording of heart rate. Determination of Arterial Blood Pressure in Humans.

3.3 Effect of posture (lying, sitting, standing), exercise, Yogasana, (suryanamaskar),  
Pranayama and Meditation on blood pressure.

3.4 Spirometry. Recording of Body Temperature. Reflexes.

3.5 Measurement of strength of muscle. Measurement of flexibility. Recording of ECG,  
EEG, GSR and respiration.

**Unit-4: Physical measurements**

**(09 Hrs)**

4.1 Effects of exercise, cold stress and postural change on blood pressure and pulse  
rate.

4.2 Measurement of strength and flexibility of muscle.

**TEXT BOOK**

1. ParvatiMahapatra : Practical physiology, Jaypee publishers, 2<sup>nd</sup> edition, 2004.
2. Jain AK: Manual of Practical Physiology for BDS, Arya Publications



## **SEMESTER - II**

## Name of the course: Synthesis of Gita and Yoga Vasistha

Course code: MS-CT201

### Objectives:

Following the completion of the course, students shall be able to:

- To give comprehensive knowledge about therapeutic basis of Yoga as mentioned in ancient classical texts such as Bhagavadgita and Yoga Vasistha.

<b>Total Number of Hrs: 45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	3	1	0
Hrs/ week	3	1	0
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : 100</b>		<b>Practical :-</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
70	30		

### UNIT-I: SIGNIFICANCE OF BHAGAVADGITA AS A SYNTHESIS OF YOGA AND TATTVAMIMASA [10 Hrs.]

- 1.1 Introduction to Bhagavadgita and its traditional commentaries, their commentators
- 1.2 Significance of Bhagavadgita as a synthesis of Yoga, Definition of Yoga in Bhagavadgita and their relevance,
- 1.3 Concept of Samkhya Yoga and Atman (Purusha), Jivatman in Bhagavadgita.
- 1.4 Concept of Paramatman (Parmeshwar or Purushottam) as described in Bhagavadgita
- 1.5 Concept of world (Jagat, Samsar) as described in Bhagavadgita.

### UNIT-II: YOGASADHANA, KARMAYOGA, JNANA YOGA AND BHAKTIYOGA IN BHAGAVADGITA [10 Hrs.]

- 2.1 The concept of Yoga Sadhana (Dhyana Yoga) as described in Bhagavadgita.
- 2.2 Concept of Karma and karma Yoga in Bhagavadgita.
- 2.3 Concept of Jnana and Jnana Yoga in Bhagavadgita.
- 2.4 Concept of Bhakti, Shraddha, Bhakta in BhagavadGita.
- 2.5 Concept of Bhakti Yoga in BhagavadGita.

**UNIT–III:CONCEPT OF  
ANDROLEOFBHAGAVADGITA INHEALTHYLIVING**

**STHITA PRAJNA,AHARA,TRIGUNA  
[10 Hrs.]**

- 3.1 Concept of Sthita Prajna, stages and characteristic of it.
- 3.2 Concept and classification of Ahara and its role in Adhyatma Sadhana as described in Bhagavadgita
- 3.3 Concept of Triguna in the context of Bhagavadgita
- 3.4 Role of Bhagavadgita in day to day life.
- 3.5 Theory of Adjustment for healthy living (Psycho analysis model in verses 2.62 and 2.63) as described in Bhagavadgita

**UNIT – IV: ESSENCE OF YOGA VASISHTHA**

**[15 Hrs.]**

- 4.1 **Concept of Yoga:** Introduction and Highlights of Yoga Vasishtha, Definitions of Yoga and their relevance in Yoga Vasishtha.
- 4.2 **Concept of Mind:** World is the projection of Mind; Manah Prashamanah upayah Yoga: Mind control through abhyasa ( practice) and vairagya (detachment).
- 4.3 **Concept of Jnana:** Jnana Saptabhumika, importance of knowledge and types of knowledge, Management of Mind and emotions-enhancing the power of discrimination (Viveka).
- 4.4 **Prana and Pranayama:** Control of breathing; the story of Kakabhushanda, Understanding of the Concept of Adhi and Vyadhi; concept of Prana & Pranayama
- 4.5 **Concept of Samadhi and Moksha:** Good Association; Self Enquiry; Development of Satvaguna (Good virtues), Eight Limbs of Meditation.

**REFERENCE BOOKS**

- Radhakrishnan, S. : The Bhagavad-Gita, Harpercollins India, 2011.
- Rama, Swami : Perennial Psychology of The Bhagavad-Gita , Himalayan Institute Press USA., 2008.
- Shri Sankaracharya : Bhagavadgita Bhasya (With Text and English Translation), Sri Ramkrishna Math, Mylapore.
- Tilak, B.G. : Bhagavadgitarahasya **ya** Karmayoga-Shastra, Tilak Mandir, Poona, 1982.
- Easwaran, Eknath : The Bhagavad-Gita(for daily living),JAICO publishing Mumbai,2003
- Chari, S.M. : The Philosophy of the Bhagavadgita, Munshiram Manoharlal,Delhi, 2005.
- Srinivasa Arya, Ravi Prakash : Yoga-vasishta of Valmiki, Parimal Publication Delhi, 2005.
- Aiyer , K. : Laghu Yoga-vasishta,The Adyar L&R center Adyar,Madras, 1975.
- Narayanaswami.
- Atreya, B.L. : The Yoga-vasishta and its Philosophy,Darshan Printers Moradabad, 1966.

## **Name of the course: Applications of Patanjala Yoga in Health promotion**

**Course code: MS-CT 202**

### **Course objectives:**

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

4. Apply its value in education.
5. Apply its value practically for the management of stress.
6. Introduce its value and insights for persons with special need.

<b>Total Number of Hrs: 45</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits		3	1	0
Hrs/ week		3	1	0
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : 100</b>		<b>Practical : -</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### **Unit- I: Applications and Understanding of Patanjali Yoga & Personality Development (12 Hrs)**

- 1.1 Yoga - Meaning, Definition, Aim, Objects, Concepts, Misconcepts. The nature of seer in pure state,
- 1.2 Vrttis – Nature, classification, definition, method to control of cittavrttis  
Ishwarapranidhana– a means to attain Samadhi, Definition & quality of Ishwara
- 1.3 Chittavikshepa, Chittaprasadana and its associates,
- 1.4. Samadhi and its classification, Sabijasamadhi, Speciality of Nirvichara, Rthambaraprajna, Nirbijasamadhi.

### **Unit-II: Application and Understanding of Samyama and its applications (12 Hrs)**

- 2.1. Parinamavad, Dharma and Dharmi, Parinamanyateva, Samyama on – Parinamatraya, knowledge of bhutaruta, Parachittajnana, Antardhana. Aparantajnana,

- 2.2. Samyama on – Maitri, Surya, Chandra, Nabhichakra, Kanthakupa, Kaurmanadi, Murdhajyothi, Pratibha, Hrdaya, Swartha, Udana, Samana, and their benefits.
- 2.3. Attainments of divyashrotra, Akashagamana, Bhutajaya, Animadi siddhi, Indriyajaya, Kaya jaya, Sarvajnatva,
- 2.4. Concept of Kaivalya in Patanjali Yoga Sutra, Kaivalya–Introduction, Siddhi, Jatyantaraparinama, Nirmanachitta.Karma, Vasana, Smrti and Samskara,

### **Unit-III: Applications of Patanjali Yoga Sutra in cognitive functions (12 Hrs)**

- 3.1. Physical &Pranic Level: Assana& Pranayama (for Lung capacity); Mental Level: Gain mastery over the Mind,
- 3.2. Concentration, creative skills and clear thinking; Creativity; through Pratyahara, Dharana and Dhyana (Meditation).
- 3.3. Spiritual Level: Kriya-yoga and its benefits; classification of klesha and methods to control kleshas, karmasaya.
- 3.4. Heyaswarupa, Heyahetu, Drsya and Drasta.Samyoga-Nature & cause,Hanaswarupa Hanopaya. Vivekakhyathi.

### **Unit-IV: Application of Patanjali Yoga Sutra in Stress Management (09Hrs)**

- 4.1. Application in Stress management: Practices for Chitta Vritti Nirodha (Abhyasa and Vairagya), Chittaprasadanam
- 4.2. Physical Level: Asanas (for strength and stamina ); Pranic level : Pranayama, Mental level: Personal and Social Discipline through five Yamas ( don'ts) and five Niyama (do's), mastery over mind through pratyahara,.
- 4.3. Emotion level: mastery over emotions to prevent, anger, fear, through Ishwara Pranidhana (Surrenderance to the supreme).
- 4.4. Spiritual health: Dhyana, and Samadhi (for joy, bliss).

## TEXT BOOKS

1. Iyengar B.K.S. : Light on the Yoga Sutras of Patanjali, Published Thorsons, 2002.
2. Swami Satyananda (1983), Four Chapters on Freedom (Commentary on the Yoga Sutras of Patanjali), Bihar School of Yoga, Munger-811201.

## REFERENCE BOOKS:

1. Bharati, Swami Anant: Patanjala Yoga Shashtra – Eka Adhyayana, Hindi, MDNIY, New Delhi- 2007
2. Gharote, M.M. : Therapeutic references in Traditional Yoga Texts, The Lonavla Institute, Lonavla, 2010.
3. Gharote ML : Hatharatnavali, The Lonavala Yoga Institute, Lonavala, Pune, II<sup>nd</sup> Edition, 2009.
4. Rukmini T.S.: Yoga Vartika of Vijnanbhikshu (Tr.) Vol I, II, III & IV, Munshiram Manoharlal Pvt. Ltd. New Delhi
5. Sharma BR : Jotsna (Commentary of Hatha Yoga Pradeepika) Kaivalyadhama, Lonavala, 2013.
6. Srivastava Suresh Chandra : Patanjali Yoga Darshanam, Varanasi.
7. Swami Vivekananda (1982), Rajayoga, Ramakrishna Ashrama Publications, Dehi Entally Road, Kolkata-700014.
8. Swami Vivekananda : Rajayoga, Advaita Ashram, Calcutta, 2000.
9. Taimini I.K. (1961), The Science of Yoga, Theosophical Publishing House, Adyar, Madras.- 600020
10. Woods, J.H.: The Yoga System of Patanjali, M.L.B.D., Delhi, 1988

## Name of the course: Biomechanics and Kinesiology

Course code: MS-CT203

### Course objectives:

The biomechanics course objectives are

- Helping learners to realize biomechanics importance to yoga practice;
- To learn general biomechanics concepts and principles that influence human movement;
- Illustrate the use of these general biomechanical concepts in the professional skill for the diagnosis of the movement during yoga practices.

Total Number of Hrs: 60		Theory	Tutorial	Practical
Credits		4	1	0
Hrs/ week		4	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical :-		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit 1: Introduction to principles of Biomechanics

[15 Hrs.]

- 1.1. Meaning and Definition of Kinesiology ; Basic Biomechanical terms – velocity; acceleration; angular velocity; angular acceleration; Mass; Pressure; Gravity; Friction; work; Power; Energy; Torque;
- 1.2. Bio mechanics: Description of movement of the human body; Kinematics, Kinetics; Kinetics – the forces producing motion e.g. muscles, gravity; Kinematics – the description of motion e.g. type, location, direction, planes of movement; Type of displacement (movement); Location in space; Direction of movement; Magnitude of movement; Rate of movement; Importance of Kinesiology and Biomechanics for Yoga
- 1.3. Fundamental concepts of following terms – Axes and Planes, Centre of Gravity, Equilibrium, Line of Gravity; Fundamental movements at various joints;
- 1.4. Fundamental concepts of the following terms – Angle of Pull, All or None Law, Reciprocal Innervations and inhibition; Stretch and postural reflex during the practice of Yoga postures;
- 1.5. Force – Meaning, definition, types and its application to various Yoga postures; Lever – Meaning, definition, types and its application to human body; Newton's Laws of Motion – Meaning, definition and its application to Yoga activities.

## **Unit-2: Biomechanics of Upper Limb**

**[10 Hrs.]**

- 2.1. Biomechanics of Shoulder: Structure & function of the bones & joints of the Shoulder complex, mechanics & patho-mechanics of the muscle activity in the Shoulder complex & analysis of the forces on the Shoulder complex during Yoga postures;
- 2.2. Biomechanics of Elbow: Structure & function of the bones & no contractile element of the elbow, mechanics of muscle activity at the elbow & analysis of the forces on the elbow during Yoga postures;
- 2.3. Biomechanics of Wrist & Hand: Structure & function of the bones & joints of the wrist & hand, mechanics of the muscle activity in the wrist & hand, analysis of the forces on the wrist during activity, mechanics of the Special connective tissue in the hand.

## **Unit-3: Biomechanics of Lower Limb**

**[10 Hrs.]**

- 3.1. Biomechanics of Hip: Structure & function of the bones & non contractile element of the Hip, mechanics & patho-mechanics of muscle activity at the hip & analysis of the forces on the Hip during various Yoga postures.
- 3.2. Biomechanics of Knee: structure & function of the bones & joints of the Knee, mechanics of the Knee musculature, analysis of the forces on the Knee during Yoga Postures.
- 3.3. Biomechanics of Ankle: structure & function of the bones & joints of the Ankle, mechanics of the Ankle musculature, analysis of the forces on the Ankle during Yoga Postures.

## **Unit-4: Biomechanics of Spine**

**[10 Hrs.]**

- 4.1. Biomechanics of Cervical Spine: Structure & function of the bones & joints of the cervical spine, mechanics & patho-mechanics of the cervical musculature, analysis of the forces on the cervical spine during Yoga Postures.
- 4.2. Biomechanics of Thoracic Spine: structure & function of the bones & joints of the Thoracic spine, mechanics of the Thoracic musculature, analysis of the forces on the Thoracic spine during Yoga postures.
- 4.3. Biomechanics of Lumbar Spine: structure & function of the bones & joints of the lumbar spine, mechanics of the lumbar musculature, analysis of the forces on the lumbar spine during Yoga postures.
- 4.4. Biomechanics of Pelvis: structure & function of the bones & joints of the pelvis, mechanics of the muscle activity in the pelvis & analysis of the forces on the pelvis during Yoga postures.



## **TEXT BOOKS**

1. Hay, J.G. and Reid, J.G.: Anatomy, mechanics and human motion. Englewood Cliffs, N.J.: prentice Hall Inc. 1988.
2. Knudson, D.: Fundamentals of biomechanics. New York, NY: Springer, 2007

## **REFERENCE BOOKS**

1. McGinnis, P.: Biomechanics of sport and exercise. Champaign, IL: Human Kinetics, 2013
2. Franc Bell: Principles of Mechanics and Biomechanics, Stanley Thornes Publications, 1998
3. Iwan W. Griffiths, Principles of Biomechanics & Motion Analysis, Published by Lippincott Williams & Wilkins, 2006
4. Pamela K. Levange and Cynthia C. Norkin Joint structure and function, A comprehensive analysis, fourth edition, F.A. Davis company, Philadelphia.

## Name of the course: Therapeutic Yoga - II

Course code: MS-CT204

### Course objectives:

- To be able to understand the various diseases / disorders in human being and how Yoga helps to prevent and manage those diseases / disorders.
- To be able to know the precautions, do's and don'ts of Yoga practices to specific diseases / disorders.
- To be able to prescribe suitable Yogic diet regime.
- To be able to make disease specific Yoga therapy protocol.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical :-		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Yogic Management of Digestive and Excretory Disorders [15Hrs]

- 1.1. Introduction to Digestive and Excretory Disorders: Dyspepsia, Hyperacidity, Peptic Ulcers, Constipation, Irritable Bowel Syndrome, Renal stones and haemorrhoids.
- 1.2. Role of Yoga practices on various Digestive and Excretory Disorders: Dyspepsia, Hyperacidity, Peptic Ulcers, Constipation, haemorrhoids and Irritable Bowel Syndrome
- 1.3. Role of Yogic Diet on Digestive and Excretory Disorders
- 1.4. Research studies on Yogic management of Dyspepsia, Hyperacidity, Constipation, haemorrhoids and Irritable Bowel Syndrome

### Unit-2: Yogic Management of Obstetric & Gynecological Disorders [15Hrs]

- 2.1. Introduction to Obstetric & Gynaecological Disorders: Menstrual Disorder(menstrual cramp, dysmenorrhea, pre-menstrual syndrome), Polycystic Ovarian Syndrome (PCOS/PCOD), Pre-eclampsia or pregnancy induced hypertension (PIH),Menopausal discomfort (anxiety, irritability, insomnia, hot flashes.)

- 2.2. Role of Yoga practices on various Obstetric & Gynaecological Disorders such as Menstrual Disorder (menstrual cramp, dysmenorrhea, pre-menstrual syndrome), Polycystic Ovarian Syndrome (PCOS/PCOD), Pre-eclampsia or pregnancy induced hypertension (PIH) and Menopausal discomfort (anxiety, irritability, insomnia, hot flashes.)
- 2.3. Role of Yogic Diet on Obstetric & Gynaecological Disorders
- 2.4. Research studies on Yogic management of Menstrual Disorder, Polycystic Ovarian Syndrome (PCOS/PCOD) and Menopausal discomfort.

### **Unit-3: Yogic Management of Endocrine & Metabolic Disorders**

**[15Hrs]**

- 3.1. Introduction to Endocrine & Metabolic disorders: Diabetes Mellitus, Thyroid Disorders, Obesity and Metabolic Syndrome
- 3.2. Role of Yoga practices on various Endocrine & Metabolic disorders like Diabetes Mellitus, Thyroid Disorders, Obesity and Metabolic Syndrome.
- 3.3. Role of Yogic Diet on Endocrine & Metabolic disorders.
- 3.4. Research studies on Yogic management of Endocrine & Metabolic disorders: Diabetes Mellitus, Thyroid Disorders and Obesity.

#### **TEXT BOOKS**

1. Dr Robin Monro, Dr R Nagarathna and Dr H R Nagendra, Yoga for common ailments, Gaia Publishers
2. Nagarathna R and Nagendra HR, Yoga therapy for common ailments series, SVYP publications, 2010
3. Swami Karmananda, Yoga therapy for common diseases, Yoga publication trust, Munger, 2001

#### **REFERENCE BOOKS**

1. A.K. Das (Ed.): Medicine Update. Bombay: Association of Physicians of India, 1998.
2. Aatreya, Shanti Parkash: Yoga Manovigyan, Indian Psychology, International Standard Publication, Varanasi; 1965
3. Abhedananda: The Yoga Psychology Ramakrishna Vedanta, Math, Calcutta, 1973.
4. Bhavanani, A.B. (2008). Yoga For Health And Healing. Pondicherry, India: Dhivyananda Creations.
5. Bhavanani, A.B. (2013). Yoga Chikitsa: Application of Yoga as a therapy.

Pondicherry, India: Dhivyananda Creations.

6. Bhavanani, A.B. (2014). A primer of yoga theory (4<sup>th</sup> ed.). Pondicherry, India: Dhivyananda Creations.
7. Harrison: Principles of Internal Medicine, International Edition, 14th Edition, New York: McGraw Hill Co. Inc., 1998.
8. MDNIY publications: 10 Booklets, Yoga Therapy Series, MDNIY Publications, New Delhi, 2009
9. Nagarathna R and Nagendra H R: Yoga for Arthritis, Back pain, Diabetes, Pregnancy Breathing Practices, Swami Vivekananda Yoga Prakasana, Bangalore, 2000
10. Rai, Lajpat: Discovering Human Potential energy: A Physiological Approach to Yoga (Anubhava Rai Publications, 1998)
11. Ramanathan, M. (2007). Applied Yoga-Application of Yoga in Various Fields of human Activity. Puducherry: Aarogya Yogalayam.
12. Ramesh Bijlani: Back to Health through Yoga, Rupa Publications India Pvt. Ltd, 2011
13. Swami kuvalayananda and S.L. Vanikar: Yoga Therapy: Kaivalyadhama, Lonavala, Revised Edition
14. Swami Shankardevananda: Practices of Yoga for the Digestive System, Yoga publication trust, Munger.
15. Yogic Management of Diabetes Mellitus-I V Basavaraddi
16. Yogic Management of Gynaecological Disorders-I V Basavaraddi
17. Yogic Management of Obesity Disorders-I V Basavaraddi

## Name of the course: Yoga Practicum-II

Course code: MS-CP205

### Objectives:

Following the completion of the course, students shall be able to:

1. Understand the benefits, contraindications and procedure of all practices.
2. Demonstrate each practice with confidence and skill.
3. Explain the procedure and subtle points involved.
4. Teach the Yoga practices to any given group.

Total Number of Hrs: 120		Theory	Tutorial	Practical
Credits		0	0	6
Hrs/ week		0	0	12
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : -		Practical : 100		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

Practice of the following Yogic practices with brief theoretical knowledge about their importance of name, the technique, salient points, Do's & Don't, precautions to be taken and benefits of each of the following Yogic practices. Practice of Yoga practices thought in previous Semester.

### UNIT 1: RECITATION OFHYMNSAND JAPA

- 1.1 Recitation of Selected Slokas of Hathayoga Texts
- 1.2 Recitation of Selected Sutras of Patanjala Yoga Sutra
- 1.3 Recitation of Selected Slokas of Bhagwadgita

### UNIT 2: SHATKARMAS BANDHAS AND MUDRAS

- 2.1 Demonstrating ability of performing shatkarma(Cleansing Process)Laghoand Poornasankhprakashalana, Vastradhauti,Dandadhauti. Nauli.
- 2.2 Practices of Mahabandha
- 2.3 shambhavi mudra and shandmukhi mudra.

### UNIT.3:YOGASANA

- 3.1 Parivrittatrikonasana,Parshakonasana,Tittibhasana,
- 3.2 Suptavajrasana,Marichyasana,Ardhamatsyendrasana,
- 3.3 Poornadhanurasana,Sarvangasana, Chakrasana

3.4 Ekpadaandrasna, Trivikramasana,

3.5 Sirshasna and its variation

#### **UNIT.4:PRANAYAMA**

**Knowledge and Demonstrated ability** to the following perform practices

4.1 SuryaBhedi and Chandrabhedi Pranayama

4.2 Ujjayi pranayama and Bhastrika pranayama

4.3 Seetali Pranayama and Sitali Pranayama

#### **UNIT 5: PRACTICES LEADING TO MEDITATION**

**Knowledge and Demonstrated ability to** Heal at the Physical Level, Mental level, Prana Level and Conscious level with below mentioned practices.

5.1 Antarmaun

5.2 Ajapa japa

5.3 Yoga Nidra

5.4 Dharna

5.5 Vipasana and prekshadhyana.

#### **Reference Books:**

1. Basavaraddi, I.V. & others: Prataha Smarana, MDNIY New Delhi.
2. Basavaraddi, I.V. & others: Yogasana: A Comprehensive description about Yogasana, MDNIY, New Delhi, 2011.
3. Desikachar, Dr. Kausthub, The Heart of Asana, - April 1, 2012
4. Dr. Nagendra H R : Pranayama, The Art & Science, Swami Vivekananda Yoga Prakashan, Bangalore, 2005
5. Iyengar, B.K.S.: Light on Pranayama, Harper Collins, Swami Vivekanand Yoga Prakashan, 2012
6. Saraswati, Swami Satyananda:Surya Namaskar, Yoga Publication Trust, Munger, 2004
7. Sri Ananda : The Complete book of Yoga, Orient Course Backs, Delhi, 2003.
8. Swami Dhirendra Bhradhachari: Yogasana Vijnana, Dhirendra Yoga Publications, New Delhi, 1966
9. Swami Kuvalyananda : Asana, Kaivalyadhama, Lonavla, 1993
10. Swami Satyananda Saraswati : Asana, Pranayama, Bandha, Mudra, Bihar School of Yoga, Munger, 2006

11. Swami Satyananda: Yoganidra, Yoga Publication Trust, Munger, 1998

## **Name of the course: PRACTICAL BIOMECHANICS AND KINESIOLOGY**

**Course code: MS-CP206**

### **Course objectives:**

Following the completion of the course, students shall be able to:

- Understand the principle of biomechanics and its importance during the practice of Yoga.
- Guide the practitioners based on the alignment principles.
- Demonstrate Yogic practice keeping biomechanics principles in mind.

<b>Total Number of Hrs: 45</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits		0	0	2
Hrs/ week		0	0	4
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : -</b>		<b>Practical : 100</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

### **Unit-1: (10 Hrs)**

Understanding of muscles physiology with the help of model/chart and its practical applications in Asana

### **Unit-2: (10 Hrs)**

Analysis of COG, LOG, BOS in Asanas (in Sitting, standing, lying, balancing asanas)

### **Unit-3: (10 Hrs)**

Analysis of Biomechanics in Yogic postures using stick figures and from the photograph of Yoga postures.

### **Unit-4: (15 Hrs)**

Detailed Analysis of applied Biomechanics under the supervision of the teaching faculty.

### **TEXT BOOK**

1. Bruce Bowaditch: The Yoga Technique Guide - Principles of Alignment and Sequencing, Third Eye Press, 2015.

### **REFERENCE BOOKS**

1. J E Herzenberg. Principles of deformity correction, Springer publication.





## **SEMESTER - III**

## Course Name: Yogic concepts in Principal and Yogopanishads

Course Code: MS-SCT301

### Course Objective:

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

- Have an idea about the major principal Upanishads
- Understand the essence of each Upanishad and how to put them into practice.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical : NIL		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit 1: Introduction to Upanishads and TattvaMimansa (Theory of Reality) (10Hrs)

- 1.1 Meaning of Upanishad, Concept of Veda and Upanishad, Comparison between subject matters of Veda & Upanishads, Number of Upanishads.
- 1.2 Brief Introduction to Principal Upanishads- Isha, Kena, Katha, Prashna, Mundaka, Mandukya, Aitreya, Taittiriya, Brihadaranyak&ChhandogyaUpanishad
- 1.3 Nature of *Brahma&Atma* according to Principal Upanishad in view of Acharya Shankar, AcharyaRamanuj, AcharyaMadhva, AcharyaVallabh, AcharyaNimbark, *ShrishtiPrakriya* (Process of Creation).

### Unit 2: Yogatattva in Principal Upanishads (10Hrs)

- 2.1. Definition of Yoga, Types of Yoga- Jnana Yoga, Bhakti Yoga, Karma Yoga & Raja Yoga,
- 2.2. Concept of Panchkosha, Teen Shareer, OmkaraUpasana.
- 2.3 Ashtanga Yoga in Principal Upanishad- Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana, Samadhi.

### Unit3: ShandilyaUpanishad and Jabaldarshanopanishad (10Hrs)

- 3.1 Brief Introduction of *Shandilya Upanishad*, *Ashtanga Yoga*: Types of *Yama*, Types of *Niyama*, Types of *Asana*,
- 3.2 Concept and Types of *Nadi&Prana*, Stages of *Pranayama*, Concept & Types of *Pratyahara*, Concept & Types of *Dharana*, Concept & Types of *Dhyana*. *Concept of Samadhi*.
- 3.3 Brief Introduction to *Jabaldarshanopanishad*, *AshtangaYoga* : *Yama* (10 Types), *Niyama* (10 Types), *Asana* (9 Types), Types of *Prana&Nadi*, Types of *Pranayama* , *Pratyahara*, *Dharana*, *Dhyana*(Its Types)& *Samadhi*.

**Unit4: Trishikhibrahmanopanishad and Yogchudamanyupanishad (15Hrs)**

- 4.1 Brief Introduction to *Trishikhibrahmanopanishad*, Concept & Types of *Yamas* and *Niyamas*, Concept & Types of *Asanas*, Types of *Nadi*, Types of *Prana&Pranayama*, Concept of *Pratyahara*, *Dharana*, *Dhyana*, *Samadhi*.
- 4.2 Brief Introduction of *Yogchudamanyupanishad*, *Shadanga Yoga- Asana*& its types, Types of *Chakra*, *Nadi*, *Prana,Pranayama*: Its types &Benefits,
- 4.3 Concept of *Kundalini* , *Mitahara*, *Mudra&Bandhas*, Concept of *Pratyayahara*, Concept of *Dharana*, Concept of *Dhyana*, Concept of *Samadhi*.

**Reference Books:**

1. Upanishad Sangraha- JagdishShashtri, MotilalBanarasidas, Varanasi, Delhi, Chennai.
2. Swami Sivananda - The Essence of Principal Upanishads, Divine Life Society, 1980
3. Swami Nikhilananda - The Principal Upanishads, Courier Corporation, 2003
4. 108 Upanishad-SadhanaKhand- Pt. Sriram Sharma Acharya, Shantikunj, Haridwar.
5. 108 Upanishad-BrahmavidyaKhand-Pt. Sriram Sharma Acharya, Shantikunj, Haridwar.
6. 108 Upanishad-JnanaKhand- Pt. Sriram Sharma Acharya, Shantikunj, Haridwar.

## Name of the course: Applied Biochemistry

Course code: MS-SCT302

### Objectives:

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

- Understand the concept of biochemical mechanism of nutrition
- Understand the concept of clinical biochemistry for proper diagnostics
- Benefits and caloric value of various food groups

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical :-		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Nutritional Biochemistry:

[15 Hrs.]

- 1.1 Nutrition – a. Introduction, Importance of nutrition Calorific values, Respiratory quotient – Definition, and its significance Energy requirement of a person - Basal metabolic rate: Definition, Normal values, factor affecting BMR Special dynamic action of food.
- 1.2 Physical activities - Energy expenditure for various activities. Calculation of energy requirement of a person
- 1.3 Balanced diet i. Recommended dietary allowances ii. Role of carbohydrates in diet: Digestible carbohydrates and dietary fibres iii. Role of lipids in diet iv. Role of proteins in diet: Quality of proteins - Biological value, net protein utilization, Nutritional aspects of proteins-essential and non- essential amino acids. Nitrogen balance
- 1.4 Nutritional disorders. Human Nutritional Requirements & its Basic Terminology
- 1.5 Balanced diet for various age groups and physical conditions

## **Unit-2: Clinical Biochemistry**

**[15 Hrs.]**

- 2.1 Disorders of carbohydrate metabolism: Diabetes mellitus, glycol-hemoglobins, hypo-glycemias, galactosemia and ketone bodies. Various types of glucose tolerance tests. Glycogen storage diseases.
- 2.2 Physiology of lipids/lipoproteins. Lipidosis. Clinical inter-relationships of lipids (sphingolipidosis and multiple sclerosis), lipoproteins and apolipoproteins. Diagnostic tests for HDL-cholesterol, LDL-cholesterol and triglyceride disorders.
- 2.3 Inborn errors of metabolism: a) Disorders of amino acid metabolism- Phenylalanemia, homocystinuria, tyrosinemia, MSUD, phenylketonuria, alkaptonuria, albinism and aminoacidurias. b) Disorders of nucleic acid metabolism- Disorders in purine/ pyrimidine metabolism.
- 2.4 Biochemical aspects of hematology: Disorders of erythrocyte metabolism, hemoglobinopathies, thalassemias thrombosis and anemias. Laboratory tests to measure coagulation and thrombolysis. Detoxification in the body: enzymes of detoxification, polymorphism in drug metabolizing enzymes. Mechanism of drug action and channels of its excretion, Disorders of vitamins and trace elements.
- 2.5 Outline of synthesis and degradation of heme, functions of Hemoglobin, abnormal hemoglobin importance, functions and separation of plasma proteins.

## **Unit-3: Clinical Biochemistry 2**

**[15 Hrs.]**

- 3.1 Hormonal disturbances: Protein hormones (anterior pituitary hormones, posterior pituitary hormones), steroid hormones, adrenocorticosteroids, and reproductive endocrinology. Disturbances in thyroid function.
- 3.2 Disorders of mineral metabolism: Hypercalcaemia, hypocalcaemia, normocalcaemia, hypophosphataemia and hyperphosphataemia.
- 3.3 Diagnostic enzymes: Principles of diagnostic enzymology. Clinical significance of aspartate aminotransferase, alanine aminotransferase, creatine kinase, aldolase and lactate dehydrogenase. Enzyme tests in determination of myocardial infarction. Enzymes of pancreatic origin and biliary tract.
- 3.4 Liver function tests - De-toxification, mechanisms, jaundice, biochemistry of common liver disease. Kidney Function tests - composition of urine, urea clearance

and creatinine clearance. Principles of colorimetry, Paper chromatography and Electrophoresis.

3.5 Basics of Biochemical genetics and protein synthesis - Replication, transcription, reverse transcription viruses, oncogenes, post transcription modification.

### **TEXT BOOKS**

1. Harper's Biochemistry (Lange Medical Books) (Paperback) By Robert K. Murray, Daryl K. Granner, Peter A. Mayes and Victor W. Rodwell. Publisher: Appelton and Lange.
2. Clinical Biochemistry: An Illustrated Colour Text (Paperback) 3rd Ed By Allan Gaw, Michael Murphy, Robert Cowan, Denis O'Reilly, Michael Stewart and James Shepherd. Publisher: Churchill Livingstone.

### **REFERENCE BOOKS**

1. Textbook of Medical Biochemistry By MN Chatterjea and RanaShinde, Jaypee Brothers.
2. Lehninger Principles of Biochemistry 5th Ed By David L. Nelson and Michael M. Cox, WH Freeman and Company.
3. Davidson's Principles and Practice of Medicine: A Textbook for Students and Doctors (Hardcover) 15th Ed By LSP Davidson, J MacLeod and CRW Edwards. Publisher: Churchill Livingstone.
4. Medical Biochemistry (Paperback) By John W. Baynes and MarekDominiczak. Publisher: Mosby.
5. Review of Medical Physiology (Lange Basic Science) (Paperback) By William F. Ganong. Publisher: McGraw-Hill Medical

## Name of the course: Therapeutic Yoga - III

Course code: MS-CT303

### Course objectives:

- To be able to understand the various diseases / disorders in human being and how Yoga helps to prevent and manage those diseases / disorders.
- To be able to know the precautions, do's and don'ts of Yoga practices to specific diseases / disorders.
- To be able to prescribe suitable Yogic diet regime.
- To be able to make disease specific Yoga therapy protocol.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : 100</b>		<b>Practical :</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Yogic Management of Neurological Disorders

[15 Hrs.]

- 1.1. Introduction to Neurological Disorder: Migraine, Headaches, Cerebrovascular accidents, Epilepsy, Parkinson's disease.
- 1.2. Role of Yoga practices on various Neurological Disorder: Migraine, Headaches, Cerebrovascular accidents, Epilepsy, Parkinson's disease, Hearing impairment.
- 1.3. Role of Yogic Diet on Neurological Disorder
- 1.4. Research studies on Yogic management of Migraine, Cerebrovascular accidents, Epilepsy and Parkinson's disease.

### Unit-2: Yogic Management of Psychological And Psychiatric Disorders

[15 hrs.]

- 1.1. Introduction to Psychological and Psychiatric Disorder: Obsessive Compulsive Disorder, Stress, insomnia, Depression, Anxiety, Mental retardation, Schizophrenia, Autism, Attention Deficit Hyperactivity Disorder and Substance abuse
- 1.2. Role of Yoga practices on various Psychological and Psychiatric Disorder: Obsessive Compulsive Disorder, Post-traumatic stress disorder, Depression,

Anxiety, Schizophrenia, Attention Deficit Hyperactivity Disorder and Substance abuse

1.3. Role of Yogic Counselling Diet on Psychological and Psychiatric Disorder

1.4. Research studies on Yogic management of Obsessive Compulsive Disorder, stress, Depression, Anxiety, insomnia, Schizophrenia, Attention Deficit Hyperactivity Disorder

**Unit-3: Yoga for Elderly populations:**

**[15 Hrs.]**

3.1. Introduction to old age problems: Spinal deformity, loss of coordination, imbalance, improper gait pattern, Stress, Alzheimer's disease, Stress, Depression and reduction of all physiological function.

3.2. Role of Yoga practices on various old age problems: Spinal deformity, loss of coordination, imbalance, improper gait pattern, Stress, Alzheimer's disease, Stress, Depression and reduction of all physiological function.

3.3. Role of Yogic Diet in old age

3.4. Research studies on Yoga for Elderly populations.

**TEXT BOOKS**

1. Dr Robin Monro, Dr R Nagarathna and Dr H R Nagendra, Yoga for common ailments, Gaia Publishers
2. Nagarathna R and Nagendra HR, Yoga therapy for common ailments series, SVYP publications, 2010
3. Swami Karmananda, Yoga therapy for common diseases, Yoga publication trust, Munger, 2001

**REFERENCE BOOKS**

1. A.K. Das (Ed.): Medicine Update. Bombay: Association of Physicians of India, 1998.
2. Aatreya, Shanti Parkash: Yoga Manovigyan, Indian Psychology, International Standard Publication, Varanasi; 1965
3. Abhedananda: The Yoga Psychology Ramakrishna Vedanta, Math, Calcutta, 1973.
4. Bhavanani, A.B. (2008). Yoga For Health And Healing. Pondicherry, India: Dhivyananda Creations.
5. Bhavanani, A.B. (2013). Yoga Chikitsa: Application of Yoga as a therapy.



Pondicherry, India: Dhivyananda Creations.

6. Bhavanani, A.B. (2014). A primer of yoga theory (4<sup>th</sup> ed.). Pondicherry, India: Dhivyananda Creations.
7. Harrison: Principles of Internal Medicine, International Edition, 14th Edition, New York: McGraw Hill Co. Inc., 1998.
8. MDNIY publications: 10 Booklets, Yoga Therapy Series, MDNIY Publications, New Delhi, 2009
9. Rai, Lajpat: Discovering Human Potential energy: A Physiological Approach to Yoga (Anubhava Rai Publications, 1998)
10. Ramanathan, M. (2007). Applied Yoga-Application of Yoga in Various Fields of human Activity. Puducherry: Aarogya Yogalayam.
11. Ramesh Bijlani: Back to Health through Yoga, Rupa Publications India Pvt. Ltd, 2011
12. Swami kavalayananda and S.L. Vanikar: Yoga Therapy: Kaivalyadhama, Lonavala, Revised Edition

## Name of the course: Research Methodology in Yoga

Course code: MS-CT304

### Objectives:

Following the completion of the course students will:

- Have exposure to the basic theoretical concepts of conducting scientific research and motivate them to pursue higher research.
- Acquire basic understanding of Research methodology and knowledge of various statistical procedures
- Have knowledge on tools employed to conduct research, ability to address the contemporary problems in scientific way.

Total Number of Hrs: 60		Theory	Tutorial	Practical
Credits		4	1	0
Hrs/ week		4	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical :-		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Research Methodology Concepts -I

[15 Hrs.]

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

### Unit-2: Research Methodology Concepts –II

[15 Hrs.]

- 2.1. Sampling methods - Population and Sample; Simple Random Sampling; Systematic Sampling, Stratified Sampling, Cluster Sampling;
- 2.2. Methods of controlling biases – Randomization; Types of variables – Independent , dependent, confounding variable;

- 2.3. 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;
- 2.4. Issues of bias and confounding; Selection bias, Recall bias, Observer or measurement bias, Publication bias;
- 2.5. Randomization, Matching, Crossover design, Restriction (or blocking); Stratification.

### **Unit-3: Statistical Concepts - I**

**[08 Hrs.]**

- 3.1 Descriptive statistics, Inferential statistics, Hypothesis, null hypothesis, Statistics and Parameters,
- 3.2 Sample and Population, Generalization, One tailed, two tailed hypothesis, Types of Errors and its control, Central Limit Theorem.
- 3.3 Point estimate and interval estimate, Power analysis: Effect size, sample size, p-value, Confidence interval;
- 3.4 Statistical tests and design, Assumptions of tests, Statistical tests for various designs:
- 3.5 Correlation, proportions, paired sample, and independent sample t-tests, Chi-Square tests, ANOVA, Repeated Measures ANOVA, parametric and non-parametric tests.

### **Unit-4: Research Methodology in Yoga**

**[07 Hrs.]**

- 4.1 Fundamental research in Yoga, Philosophical and Literary research in Yoga, Scientific research in Yoga, Clinical research in Yoga.

### **TEXT BOOK**

1. 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

### **REFERENCE BOOKS**

1. C R Kothari. (2009). Research Methodology: Methods and Techniques. New Age International (P) Ltd. New Delhi.
2. Zar, J. H., & Zar. (1999). Biostatistical Analysis. Pearson Education. New Delhi

Subject Title: **YOGA PRACTICUM-III**

Subject Code: MS-CP305

Objective:

1. To understand and prepare the Yoga practice module for specific diseases
2. To understand the precautions, indications and contra-indications of Yogic practices to specific diseases.

<b>Total Number of Hours: 120</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits		0	0	5
Hrs/ week		0	0	10
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory :-</b>		<b>Practical : 100</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		<b>70</b>	<b>30</b>	

\* Students are required to attend the clinical Yoga therapy sessions being conducted in OPD, MDNIY. Observation plays a vital role in clinical learning and this a core requirement for the progression.

**Unit - 1 :YOGA THERAPY FOR MUSCULO SKELETAL DISORDERS [25 Hrs.]**

- 1.1. Yoga practice module for following Musculo skeletal disorders: Back pain, Neck pain & Knee pain
- 1.2. Precautions and contra-indications of Yogic practices to above mentioned Musculo skeletal disorders.

**Unit - 2: YOGA THERAPY FOR DISORDERS OF GASTRO INTESTINAL AND EXCRETORY SYSTEM [25 Hrs.]**

- 1.1. Yoga practice module for following disorders of gastro intestinal and excretory system: IBS, Hyperacidity, Dyspepsia, Constipation and Kidney stone.
- 1.2. Precautions and contra-indications of Yogic practices to above mentioned disorders of gastro intestinal and excretory system.

**Unit - 3 : YOGA THERAPY FOR CARDIO- RESPIRATORY DISORDERS: [25 Hrs.]**

- 3.1. Yoga practice module for following Cardio-Respiratory disorders: Hypertension, IHD, Atherosclerosis, Asthma, Chronic Bronchitis, Common Cold, Allergic Rhinitis, Sinusitis and Sleep apnea. .
- 3.2. Precautions and contra-indications of Yogic practices to above mentioned Cardio-Respiratory disorders.

**Unit- 4 : YOGA THERAPY FOR NEUROLOGICAL, ENDOCRINE, & PSYCHOLOGICAL DISORDERS [25 Hrs.]**

- 2.1. Yoga practice module for following Neurological, Endocrine psychological Disorders: Diabetes Mellitus, Thyroids Disorders, Obesity, Migraine, Dementia, Cerebrovascular accidents (stroke), Stress, Depression, Insomnia, and Attention Deficit Hyperactivity Disorders.
- 2.2. Precautions and contra-indications of Yogic practices to above mentioned Neurological, Endocrine psychological Disorders.

**Unit - 5: YOGA THERAPY FOR OBSTETRIC & GYNECOLOGICAL DISORDERS [20 Hrs.]**

- 5.1. Yoga practice module for following Obstetric & Gynaecological disorders: Polycystic Ovarian Syndrome (PCOS/ PCOD), Menstrual Disorders (Menstrual cramp and pain) and Menopausal discomfort.
- 5.2. Precautions and contra-indications of Yogic practices to above mentioned Obstetric & Gynaecological disorders.

**TEXT BOOKS**

1. Nagaratha R. and Nagendra H. R.: Common ailment series, published by SVYP, Bangalore, 2010
2. Swami Karmananda: Yogic management of common diseases, Yoga Publications Trust, Munger, 2001

## REFERENCE BOOKS

1. Reddy, M. Venkata and Others: Yogic Therapy, Sri M.S.R. Memorial Yoga series, Arthamuru A.P.2005
2. Dr R Nagarathna, Dr H R Nagendra: Yoga for Asthma by Published by SVYP, Bangalore, 1998
3. Dr R Nagarathna, Dr H R Nagendra: Yoga Practices for Anxiety & Depression, Published by SVYP, Bangalore, Bangalore, 2001
4. Yoga for Back Pain by Dr H R Nagendra, Dr R Nagarathna, Published by SVYP, Bangalore,, Bangalore, 2001
5. Yoga for Cancer by Dr H R Nagendra, Dr R Nagarathna, Published by SVYP, Bangalore,, Bangalore, 2006
6. Dr R Nagarathna, Dr H R Nagendra, Yoga for Arthritis, Published by SVYP, Bangalore, 2001
7. DrShamantakamaniNarendran, Dr R Nagarathna and Dr H R Nagendra: Yoga for Pregnancy, Published by SVYP, Bangalore, 2008
8. Dr. R. Nagarathna and Dr. H. R. Nagendra: Yoga for Obesity, Published by SVYP, Bangalore, 2014
9. Dr R Nagarathna, Dr H R Nagendra: Yoga for Diabetes, Published by SVYP, Bangalore 2003
10. Dr R Nagarathna, Dr H R Nagendra: Yoga for Promotion of Positive Health, Published by SVYP, Bangalore, 2004

## Subject Name: APPLIED BIOCHEMISTRY PRACTICUM

### Subject Code: MS-CP306

#### Objectives

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

- Understand the principle and procedure of each experiment.
- Demonstrate each experiment skillfully.
- Interpret the result during experiment.

<b>Total Number of Hours: 45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	0	0	2
Hours/ week	0	0	4
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory :-</b>		<b>Practical : 100</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
		70	30

#### PRACTICAL

##### UNIT-1

[12 Hrs.]

##### Extraction of Biomolecules from food products

- Extraction and determination of Biomolecules from food products:
  - Starch (Polysaccharide) from potato.
  - Casein (protein) from milk.
  - Oil (lipids) from oil seeds.
- Determination of Moisture content of foods.
- Estimation of vitamin-C in lemon and gooseberries.
- Determination of pH of fruit juice, lemon juice, water and black tea.

##### UNIT-2

[09 Hrs.]

##### Separation of bio-molecules by chromatography

- Ascending paper chromatography of amino acids.
- Demonstration of separation of lipids by TLC.

##### UNIT-3

[12 Hrs.]

##### Qualitative analysis of Bio- molecules



- Carbohydrate – Estimation of reducing sugars, Glucose, Maltose and Sucrose.
- Proteins – Precipitation reactions of proteins, color reactions of proteins
- Lipids -Estimation of Lipids by solubility and colour reaction test: Salkowski test.
- Determination of Acid number, iodine value/saponification value of oil or fat.

#### **UNIT-4**

**[12 Hrs.]**

##### **Enzyme kinetics**

- Enzyme kinetics : Salivary amylase
- Determination of specific activity of salivary amylase by DNS.
- Determination of pH optimum of salivary amylase.
- Determination of  $K_m$  and  $V_{max}$  of salivary amylase.
- Determination of initial velocity [time kinetics] of salivary amylase.
- Determination of optimum temperature of salivary amylase.
- Effect of sodium chloride on amylase.

##### **Reference Books:**

1. Victor J. Temple, A Practical Manual In Biochemistry& Clinical Biochemistry.
2. Joy PP, Surya S. and Aswathy C. Laboratory manual of biochemistry.

**Name of the course: Project work**

**Course code: MS-PW307**

**Objectives:**

Following the completion of this project work, students shall be able to:

- Carry out small scale research projects.
- Analyze his/her data and organize the data in tabular and graphical form.
- Interpret the data and draw conclusion.

<b>Total Number of Hrs: 120</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Project Work</b>
Credits		0	0	8
Hrs/ week		0	0	
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : -</b>			<b>Practical : 100</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

**Note:**

During this time, candidates are expected to carry out the following tasks:

Meet the guide at least once to report their progress.

Spend time every day for recording data.

**Examination:**

Students shall be examined based on the presentation of their synopsis and progress of the project work.

## **SEMESTER - IV**

## Course Name: Yoga and Human Consciousness

Course Code: MS-SCT401

### Course Objective:

1. To understand the concept of Human Consciousness in Indian Philosophy, Ayurveda and Tantra.

<b>Total Number of Hrs:45</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits	3	1	0
Hrs/ week	3	1	0
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : 100</b>		<b>Practical :</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
70	30		

### **Unit 1: Introduction and Concept of Human Consciousness [12 Hrs.]**

- 1.1 Meaning, definition and Scope of Consciousness, Nature of Consciousness.
- 1.2 Need of study of Human Consciousness.
- 1.3 Present Crisis on Human Consciousness and measures of their appropriate solutions.

### **Unit 2: Philosophy and Science of Human Consciousness [11 Hrs.]**

- 2.1 Human Consciousness in Veda and Upanishad.
- 2.2 Human Consciousness in Buddha and Jain Philosophy.
- 2.3 Human Consciousness in Nyaya, Vaisheshik, Sankhya, Yoga, Mimamsa and Vedanta.

### **Unit 3: Various streams of Ancient Indian & Modern Sciences [10 Hrs.]**

- 3.1 Human Consciousness in Tantra, Astrology and Ayurveda.
- 3.2 Human Consciousness in Modern Science.
- 3.3 Researches related to Human Consciousness in Human Anatomy, Physiology & Psychology.

### **Unit 4: Different Mysteries and Development of Human Consciousness [12 Hrs.]**

- 4.1 Birth and Life, Fate and Efforts (Purushartha) Principles of Karma, Samskar and Rebirth.
- 4.2 Concept of Kundalini, Concept of Chakra. Various psychological methods for development of Human Consciousness.
- 4.3 Methods for development of Human Consciousness in Various Religions- Islam, Christianity, Sikhism, Various Techniques for developments of Human Consciousness by Indian Rishis.

## Reference Books

1. BharatiyaDarshanomeinChetanakaSwaroop- Dr. Krishna Saxena
2. BharatiyaDarshan- AcharyaBaldevUpadhyaya
3. UpanishadicAdhyatmaVigyan - Dr. IshwarBharadwaj
4. ManavChetana- Dr. IshwarBharadwaj
5. ManavChetanaewam Yoga Vigyan- Dr. Kamakhya Kumar
6. A study in Consciousness Annie Besant
7. Ayurveda and Mind Dr. David Frawley
8. The Root of Consciousness Jeffery Mishlor
9. Mind and Super Mind N.C. Panda
10. Seven States of Consciousness Anthony Campbell
11. Human Consciousness & Yogic Science Dr. Kamakhya Kumar

## Name of the course: Techniques of Psychological Counseling

Course code: MS-CT402

### Objectives:

- To develop a general understanding towards abnormal behaviour and disease process through various models of health psychology
- To understand causes of pathological behaviour and psych-diagnostic assessment.
- To develop skill for diagnosis and classification of mental disorders.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical :-		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit-1: Introduction to models of Psychopathology

[12Hrs.]

1.1. Psychoanalytic, behavioural, cognitive and biological models; Socio-biology of health and disease; Diagnostic classification of mental and behavioural disorders.

### Unit-2: Case history taking and mental status examination

[12 Hrs.]

2.1. Disorders of attention, perception, thought movement, Psycho-diagnosis of major Mental Disorders of the Adults and their treatment: Stress and Anxiety Disorders, and Schizophrenia, Affective Disorders, Psychosomatic Disorders, Personality Disorders and Substance abuse.

### Unit-3: Mental Disorders of Children and their treatment

[09Hrs.]

3.1. Mental Retardation, Learning Disability, Attention Deficit Disorders and Hyperactivity, Autism, Fears and Phobias, Conduct disorders

### Unit-4: Yogic counselling

[12 Hrs.]

4.1. Introduction to counselling, nature approaches and challenges; Approach to counselling- Attitude change towards Yoga through individualized counselling, Psychological & yogic method Tackling ill effects of conflict and Frustration; Yogic methods Yoga Psychology for Adjustment: Psychological, philosophical and Yogic counselling; the remedial measures; Action in relaxation-the secret of Karma Yoga; Psycho-physiological effects and health benefits of Pranayama, Shatkarma; Bandha and Mudra ; Psycho-physiological effects and health benefits of Meditation.

## **TEXT BOOKS**

1. Hersen, M., Kazdin, A. E., & Bellack, A. S. (1991) *The Clinical Psychology Handbook* Pergamon. New York

## **REFERENCEBOOKS:**

1. Practice. New York: Plenum.
2. Sweet, J. J., Rozensky, A. & Tavian, S. M. (1991) *Handbook of Clinical Psychology in Clinical*.
3. Walker, C. E. (2001) *Handbook of Child Clinical Psychology*. New York: John Wiley & Sons.

## Name of the course: PHYSIOLOGICAL EFFECT OF YOGA PRACTICES

Course code: MS-CT403

### Objectives:

Following the completion of the course, students shall be able:

1. To have an in depth understanding of physiological changes following the practice of yoga
2. To have a brief idea of the underlying mechanism behind the possible benefits as a result of yogic practices
3. To have an in-depth understanding about physiological benefits of Pranayama; Neuro Psychological locks in Mudras; Neuro Muscular locks in Bandhas.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		3	1	0
Hrs/ week		3	1	0
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : 100		Practical : 100		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

### Unit - 1: The concept of homeostasis

[12 Hrs.]

- 1.1 Homeostasis, Regulatory systems of the body, Characteristics of control systems, Physiological basis of mind-body intervention.
- 1.2 Physiology of exercise, Asana - Types and Categories; Musculo skeletal system and mechanisms involved.
- 1.3 Effect of Yogic practices in setting up the internal environment of the body, Mechanical influence of asanas;
- 1.4 Psychosomatic mechanism; Mechanism of influence of six types of asanas: stretching; pivoting; strengthening; inverted; pressing; equilibration, Reciprocal inhibition and innervation. 1.5 Concept of energy expenditure and role of asana practice on energy expenditure.

### Unit - 2: Pranayama and Meditation

[12 Hrs.]

- 2.1 Mechanism of respiration and mechanism of gas exchange, Regulation of respiration.
- 2.2 Psycho- physiological effect of pranayama: changing of ratio of oxygen and



carbonic carbon –di-oxide in our body; enabling different groups of muscles in breathing; Pranayama as respiratory pump.

2.3 Reflex impact over sympathetic and parasympathetic nervous system; Role of Pranayama on lung function test. Role of Pranayama and other Yoga practices on compliance, Ventilation perfusion ratio, alveolar ventilation, dead space volume and minute ventilation.

2.4 Neurophysiological mechanism of Kevala, Antar and Bahirkumbhaka.

2.5 Different types of meditation its impacts on central nervous system and peripheral nervous system. Different types of meditation its impacts on cardiovascular system, respiratory system, nerve – muscle physiology. Meditation its impacts on relaxation of each and every system of body.

### **Unit - 3: Warm up exercise and Kriyas**

**[12 Hrs.]**

3.1 Warm up exercise and its importance to preparedness of yogic practice. Different warm-up exercise and its physiological importance.

3.2 An overview of diffusion, osmosis, active transport across cell membrane; significance of using salt during the practice of Kriya; Tonicity of the solution such as hypotonic, hyper tonic and isotonic solution and the impact of the same on physiology.

3.3 Effects of kriya on GIT and Respiratory physiology; peristalsis and mechanism of action, Effect of Kriyas in encouraging the peristalsis; Opening and closing of sphincter; Role of Kriyas in smooth operation of sphincter.

3.4 Mechanism of action of Kriya practices in the activation of vagus nerve, effect of Kriyas on gastric mucosa on digestive system; Development of negative pressure and the impact of sustenance of the negative pressure in body physiology.

### **Unit - 4: Mudras Bandhas**

**[09 Hrs.]**

4.1 Nerve reflexes; Proprioceptive neuromuscular facilitation; Effect of Bandhas on joint complexes; Central bandhas and co activation of opposing muscles in spinal joint complexes;

4.2 Jalandharabandha effects neck joint complexes; Uddiyanbandha effects upper joint complexes; and Moolabandha for lower back joint complexes.

4.3 Isometric muscle activation and Bandhas; Synergistic muscle activation during Bandha practices; Navadvara and their significance in yoga.

4.4 Principles behind the practice of Mudras; Resting membrane potential; transmission of nerve impulse; significance of Neuro psychological lock and its impulse in body physiology; secretion of neurotransmitter in the brain;

4.5 Role of mudra and its physiological functions of the body.

### **TEXT BOOKS**

1. A Handbook for Yogasana Teachers: The Incorporation of Neuroscience, Physiology, and Anatomy by Mel Robin, Publisher: Wheatmark; 1 edition (15 May 2009)
2. Gore MM: Anatomy and Physiology of Yogic Practice, New Age Books, New Delhi.
3. H. David Coulter: Anatomy of Hatha Yoga, A manual for students, teachers and practioners, Motilal Banarsidass Publishers Private limited, Delhi.
4. Sri Krishna: Notes on Structure and Functions of Human Body and Effects of Yogic Practice on it. I.C.H.Y.C., Kaivalyadhama.

### **REFERENCE BOOKS**

1. Balkrishna Acharya: Yoga – Vijnanam, Divya Publication, Haridwar.
2. Bijlani R. L.: Understanding of Human Physiology, Jaypee Brothers Medical Publishers Pvt. Ltd, New Delhi, 2011
3. Brown Stanley P, Miller Wayne C, Eason Jane M: Exercise Physiology Basis of Human movement in health and disease. Lippincott Williams & Wilkins.
4. Chaurasia, BD: Human Anatomy
5. Guyton and Hall: Text book of Medical Physiology
6. Jain AK: Text Book of Physiology (Volume I and II), Avichal publishing company
7. Jayaprakash, C.S: Sports Medicine, Jaypee brothers, New Delhi.
8. McArdle William D, Katch I Frank, Katch Victor L. Essentials of exercise physiology. Lippincott Williams & Wilkins.
9. Pal G. K & others: Textbook for practical Physiology, Orient Longman Pvt. Ltd, Hyderabad, 2007
10. Sembulingam K; Sembulingam P: Essentials of Physiology for Dental students.



**Name of the course: APPLIED YOGA**

**Course code: MS-CT 404**

**Objectives:**

After the completion of the program, the students should be able to

- i. Understand an overview of the applications of Yoga in School, Sports.
- ii. Understand the concept of Yoga and stress management

<b>Total Number of Hrs: 45</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Practical</b>
Credits		3	1	0
Hrs/ week		3	1	0
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory : 100</b>		<b>Practical :</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
70	30			

**UNIT I: YOGA IN SCHOOL**

**(15 Hrs)**

- 1.1. General Introduction to School Health, components of school health
- 1.2. Parent-Teacher-Student relationship in a School Health; Role of social interaction in a School Health
- 1.3. Role of Yoga in establishment of values in School going children;
- 1.4. Personality Development: New Dimensions of Personality through Yoga

**UNIT II: YOGA FOR SPORTS**

**(15 Hrs)**

- 2.1. General introduction to Physical Education and Sports; Difference between Physical Education & Sports; Relevance of Integration of Yoga in Physical Education & Sports.
- 2.2. Indicators of Physical Fitness: Strength, Endurance and Flexibility; Indicators of Mental Fitness: Concentration, Will-Power and Mental Toughness.
- 2.3. Yoga for Physical and Mental Fitness: Asana, Pranayama, Bandha, Mudra and Meditation.
- 2.4. Application of Yogic lifestyle in improving efficacy in sports personnel;

### **UNIT III: YOGA FOR STRESS MANAGEMENT**

**(15 Hrs)**

- 3.1 Stress: Its Nature, Definition, Symptoms, Sources, Consequences of Stress and Yogic Perspective of Stress
- 3.2. Concepts and Techniques of Stress Management in Ashtanga-yoga of Patanjali and Bhagavadgeeta
- 3.3. Yogic principles for the management of Stress and its consequences.
- 3.4. Research studies on Yoga for stress management

#### **TEXT BOOKS**

1. ML Gharote: Yoga and physical education
2. Nagendra, H.R: New Perspectives in Stress Management, Vivekananda Kendra, Banglore, 1988.
3. Udupa, K. N.: Stress and its Management by Yoga, MLBD, New Delhi, 1978.

#### **BOOKS FOR REFERENCE**

1. Basavaraddi I V : Yoga in School Health, MDNIY New Delhi, 2009
2. Bhatia, Kamala & B. D: The Principles and Methods of Teaching, Doaba House, Delhi, 2000.
3. Bhavanani, A.B. (2011). Understanding the yoga darshan. Pondicherry, India: Dhivyananda Creations.
4. Dr.GoelAruna : Yoga Education: Philosophy and Practice, Deep & Deep Publications Pvt. Ltd, 2007
5. Feuerstein, G. (2003). The Deeper Dimension of Yoga Theory and Practice. Boston Massachusetts, USA: Shambala Publications Inc.
6. Giri, G. S. (1999). Ashtanga Yoga of Patanjali. Pondicherry, India: Satya Press.
7. Iyenger B K S : AstadalaYogamala 1 to 7 volumes, Allied Publishers Pvt. Ltd, 2009
8. Iyenger B K S : The Path to Holistic Health, A Dorling Kindersley Book, Great Britain, 2001
9. Jayadev H J : Growing with Yoga, The Yoga Institute, Santacruz, Mumbai, 2004
10. Liz Lark : Yoga for Kids, Carlton Books Ltd., London, 2003
11. Prin. R.S.Bhogal: Yoga and Mental Health & beyond Kaivalyadhama, Lonavla.
12. Ramanathan, M. (2007). Applied Yoga-Application of Yoga in Various Fields of human Activity. Puducherry: Aarogya Yogalayam.
13. Swati & Rajiv Chanchani : Yoga for Children: A complete illustrated guide to Yoga, UBS Publishes Distributors Pvt. Ltd, 2008
14. Yoga for A Wholistic Personality. A Guide to Concepts and Practices of

Rishiculture Ashtanga Yoga as Taught by Yogamaharishi Dr Swami Gitananda Giri  
Guru Maharaj, Founder Ananda Ashram. Published by MDNIY, New Delhi for the  
National Yoga Week- Feb 2012.

## Name of the course: PRACTICUM IN APPLIED PSYCHOLOGY

Course code: MS-CP405

### Objectives:

Following the completion of the course students will:

- Understand the procedure of taking the case studies for the diagnosis of psychological diseases.
- Know the skills of counseling with yogic approach.
- Develop communication skills for becoming an efficient counselor.

Total Number of Hrs: 45		Theory	Tutorial	Practical
Credits		0	0	2
Hrs/ week		0	0	4
SCHEME OF EXAMINATION				
Total Marks: 100				
Theory : -		Practical : 100		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

#### Unit-1: Case history (15 Hrs)

- Taking case history of various categories of various diseases such as amnesia, bipolar, OCD, schizophrenia, anxiety neurosis. (5 cases)
- Discussion and interpretation

#### Unit-2: Audio visual (10Hrs)

- The students shall be exposed to audio visual methods of counselling for 5 cases
- Discussion and interpretation

#### Unit-3: Conventional Counseling (10 Hrs)

- Conventional counselling for 5 cases
- Discussion and interpretation

#### Unit-4: Yogic counseling (10 Hrs)

- Yogic counselling for 5 cases
- Discussion and interpretation

#### TEXT BOOK

1. Rama, S., Ballentine, R. & Ajaya, S. (1976) Yoga Psychotherapy. Pennsylvania: HIP.

#### REFERENCE BOOKS

1. Brown, B. (1977) Stress and the Art of Biofeedback. Toronto: Bantam Age Books.
2. Cacippo, J. T., Tassinari, L.G., & Berntson, M. (2007) Handbook of Psychophysiology, Cambridge.
3. Schwartz, M. S. (Ed) (2001) Biofeedback: A Practitioner's Guide. New York: The

Guilford Press.

**Name of the course: Field Work**

**Course code: MS-FW406**

**Objectives:**

Following the completion of this field training, students shall be able to:

- Demonstrate the Yoga practices specific to a particular ailments confidently.
- Gain more practical knowledge about the disease specific Yoga techniques

**Instructions:**

During field training students are expected to carry out the following tasks.

1. Involve themselves during practical session.
2. Understand how to take case history
3. Gain the knowledge of recording the common parameters specific to disease.

<b>Total Number of Hrs: 90</b>		<b>Theory</b>	<b>Tutorial</b>	<b>Field Work</b>
Credits		0	0	4
Hrs/ week		0	0	-
<b>SCHEME OF EXAMINATION</b>				
Total Marks: 100				
<b>Theory :-</b>		<b>Practical : 100</b>		
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)	
		70	30	

**Note:**

Students should conduct Yoga training or Yoga therapy programmes in community based Yoga centers at Urban (10 days) and Rural areas (10 days) at least 4 hours per day.

Students need to spend 2 hours every day in a Yoga OPD or in a hospital set up where the patients undergo their Yoga treatment.

**Examination:**

Students shall be examined based on the knowledge acquired with respect to parameter and the case history.





**Name of the course: DISSERTATION**

**Course code: MS-PW407**

**Objectives:**

Following the completion of this dissertation, students shall be able to:

- Carry out small scale research projects.
- Analyze his/her data and organize the data in tabular and graphical form.
- Interpret the data and draw the conclusion.

<b>Total Number of Hrs: 120</b>	<b>Theory</b>	<b>Tutorial</b>	<b>Project Work</b>
Credits	0	0	8
Hrs/ week	0	0	
<b>SCHEME OF EXAMINATION</b>			
Total Marks: 100			
<b>Theory : -</b>		<b>Practical : 100</b>	
Final Exam (SEE)	Internal Assessment (CT+TA)	Final Exam (SEE)	Internal Assessment (CT+TA/PR)
		70	30

**Note:**

During this time, candidates are expected to carry out the following task.

Meet the guide at least once to report the progress.

Spend time every day for recording the data.

**Examination:**

Students shall be examined based on the presentation of their synopsis and progression of the dissertation.