Faculty of Yoga

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY) MYSURU

JSS Academy of Higher Education & Research
Deemed to be University)
Re-Accredited "A+" Grade by NAAC
Sri ShivarathreeshwaraNagaraMysuru - 570 015, Karnataka

Regulation & Syllabus

M.Sc. YOGA
2020

MSc

Regulations & Syllabus

POSTGRADUATE DEGREE PROGRAMME

M.Sc.YOGA

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Preamble

The Department of Yoga under JSS Academy of Higher Education and Research (AHER) offers undergraduate and postgraduate program and under the UGC-Choice Based Credit System (CBCS) pattern. The CBCS pattern offers a platform for interdisciplinary learning among our students. Under this CBCS, the requirement for awarding a degree is prescribed in terms of number of credits to be completed by the students. The courses offered has a mandate to coordinate the UGC regulations in a manner that uniform quality control regulations and procedures are strictly adhered to and high academic standards are maintained, in addition to providing our students with high quality academic, ICT, other support services.

The Semester Grade Point Average (SGPA) is measured as performance of work done by the student in a semester. The Cumulative Grade Point Average (CGPA) is measured as cumulative performance of a student in all semesters in the courses taken by the student.

The mission of the undergraduate and postgraduate studies offered at Department of Yoga is to promote excellence amongst our undergraduate and postgraduate students through responsive teaching, research and supervision.

The main objective of the courses offered at Department of Yoga is interdisciplinary in nature that enables over all student development and enhanced learning experience. Each course paper provides hands-on-experience that translates theory to practical. The curriculum is supported with Education trips and other extension and extracurricular activities wherever required.

The students are encouraged to undergo and acquire scientific knowledge by frequently participating in different subject related workshops, conferences, research activities with inter and multidisciplinary collaborative research groups.

POSTGRADUATE PROGRAMME REGULATIONS

1. Title and Commencement

These regulations shall be called as "The Regulations for the M.Sc. (Yoga) Degree Program– 2020-2021 of the JSS AHER, Mysore". They shall come into effect from the Academic Year 2020-2021. The regulations framed are subject to modifications from time to time by the authorities of the JSS AHER.

2. Minimum qualification for admission

Candidate shall have passed B. Sc. (Yoga) or other degree* - B.Sc. in Science (Any Stream) / BPT/ Medicine/ Dental/ BNYS/ BAMS/ BHMS/ BUMS.

*Candidates other than B.Sc. (Yoga) degree & BNYS degree should enrol for Compulsory Bridge Course- Yoga Teachers Course (Level 2) (YTC-2) (Certificate Programme).

3. Duration of the program

The course of study for M.Sc. (Yoga) shall be minimum period of four semesters (two academic years) and maximum period of 8 semesters (4 academic years) for completion of a M.Sc. (Yoga) course. The curriculum and syllabus for the program shall be prescribed from time to time by JSS AHER, Mysore.

4. Medium of instruction and examinations

Medium of instruction and examination shall be in English.

5. Working days in each semester:

There are two semesters in a year. Each semester shall consist of not less than 90 working days.

6. Attendance and progress

No candidate who has put in less than 75% of the full attendance for the course shall be permitted to take the semester examination of the course concerned. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

7. Program/Course credit structure

As per the philosophy of Choice Based Credit System (CBCS), quantum of academic work viz. theory classes, practical classes, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other academic, co/extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week.

8. Semesters

The semester that begins in July (July to December) is known as Odd Semester and the semester that begins in December (January to June) is known as Even Semester.

9. Curriculum

Department of Yoga has a prescribed course structure, which in general terms is known as Curriculum/Course of Study/Programme. It prescribes papers/courses to be studied in each semester. This includes all the curricula and course contents. Except for the language curricula, for all other curricula the medium of the instruction, examination, seminar, and project work should be in English.

10. Credit assignment

10.1 Theory and Laboratory courses:

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and Practical (P) courses consist of hours spent in the laboratory/ yoga practical. Credits (C) for a course is dependent on the number of hours of instruction per week in that course and is obtained by using a multiplier of one (1) for lecture and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having four lectures per week throughout the semester carries a credit of 4. Similarly, a practical having two laboratory hours per week throughout semester carries a credit of 1.

10.2 Minimum credit requirements

The minimum credit points required for award of a M.Sc. (Yoga) degree by JSS AHER, Mysore is 92. These credits are divided into Theory courses and Practical over the duration of six semesters. The credits are distributed semester-wise as shown in Table V. Courses generally progress in sequences, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester-wise schedule of courses given in the syllabus.

11. Academic work

A regular record of attendance both in Theory and Practical shall be maintained by the teaching staff of respective courses.

12. Course of study

The course of study for M.Sc. (Yoga) shall include Semester wise Theory & Practical as given in Table – I to IV. The number of hours to be devoted to each theory and practical course in any semester shall not be less than that shown in Table – I to IV.

Table – I: Course of study for Semester I

Sl. No.	Study Compo-nents	Paper	No. of Hours/ week	Credit points
1.1	Core Paper 1	Fundamentals of Yoga – Part 1	**4**	4
1.2	Core Paper 2	Medical Physiology– Part 1	**4**	4
1.3	Core Paper 3	Human Anatomy	**4**	4
1.4	Core Paper 4	Medical Biochemistry	**4**	4
1.5	Core Paper 5	Yoga &Food Science	**4**	4
1.6	Core Practical 1	Yoga Practical –I-	**12**	6
	Total		**32 Hours**	**26**

Table – II: Course of study for Semester II

Sl. No.	Study Components	Paper	No. of Hours/ week	Credit points
2.1	Core Paper 6	Fundamentals of Yoga – Part 2	4	4
2.2	Core Paper 7	Medical Physiology– Part 2	4	4
2.3	Core Paper 8	Human Nutrition & Yoga	4	4
2.4	Core Paper 9	Immunology & Yoga	4	4
2.5	Allied Paper 1	Yoga & Exercise therapy	4	4
2.6	Core Practical 2	Yoga Practical –II	12	6
	Total		32 Hours	26

Table – III: Course of study for Semester III

Sl. No.	Study Components	Paper	No. of Hours/ week	Total Credit points
3.1	Core Paper 10	Fundamentals of Neuroscience & Yoga	**4**	**4**
3.2	Allied Paper 2	Biomechanics & Yoga	**4**	**4**
3.3	Core Paper 11	Research Methodology &Statistical Methods	**4**	**4**
3.4	Core Paper 12	Lifestyle Disorder& Yoga Management	**4**	**4**
3.5	Elective Paper 1	Business Management * OR Importance of Veda*	**2**	**2**

3.6	Core Practical 3	Yoga Practical –III	**12**	**6**
	Total		**30 Hours**	**24**

* Internal Examination

Table – IV: Course of study for Semester IV

Sl. No.	**Study Components**	**Paper**	**No. of Hours/ week**	**Total Credit points**
4.1	Core Paper 13	Yoga & Psychology	4	4
4.2	Project Work 1	Workshop, Research proposal writing, Seminars & Journal Club	1	1
4.3	Project work 2	1. Dissertation on Yoga 2. Yoga Posting 3. General Yoga Practice	21	11
	Total		26 Hours	16

Table – V: Semester wise credits distribution

Sl. No.	**Semester**	**Credit Points**
1	First	26
2	Second	26
3	Third	24
4	Fourth	16
5	Extracurricular/ Co-curricular activities: Presenting at National/International Conferences, Yoga competition participation etc.	04*
	Total	92

- The credit points assigned for extracurricular and or co-curricular activities shall be given by the HOD and the same shall be submitted to the Controller of Examination. The criteria to acquire this credit point shall be defined by the Dean & HOD from time to time.

13. Program Committee

13.1 The M.Sc. (Yoga) programme shall have a Programme Committee constituted by the Head of the department.

13.2 The composition of the Programme Committee shall be as follows: Among the faculty member will be the Chairperson; One Teacher from each

department handling MSc (Yoga) courses; and three student representatives of the programme (one from each academic year), nominated by the Head of the department.

13.3 Duties of the Programme Committee:

- Periodically reviewing the progress of the classes.
- Discussing the matters concerning curriculum, syllabus and the conduct of classes.
- Discussing with the course teachers on the nature and scope of assessment for the course and the same shall be announced to the students at the beginning of respective semesters.
- Communicating its recommendation to the Head of the department on academic matters.
- The Programme Committee shall meet at least thrice in a semester preferably at the end of each Sessional exam (Internal Assessment) and before the end semester exam.

14. Examination: The scheme for internal assessment and end semester examinations is given in Table -VI.

14.1 End semester examinations

The End Semester Examinations for each theory and practical course through semesters I to IV shall be conducted by the JSS AHER.

Tables VI: Details of internal assessments and end semester exam semester wise

Semester 1

Part	Study Components	Paper	Internal Assessment				End Semester Exams		Total Marks
			Continuous Mode	Sessional Exams		Total	Marks	Duration (Hr)	
				Marks	Duration (Hr)				
1.1	Core Paper 1	Fundamentals of Yoga – Part 1	10	15	1	25	75	3	100
1.2	Core Paper 2	Medical Physiology– Part 1	10	15	1	25	75	3	100
1.3	Core Paper 3	Human Anatomy	10	15	1	25	75	3	100
1.4	Core Paper 4	Medical Biochemistry	10	15	1	25	75	3	100
1.5	Core Paper 5	Yoga &Food Science	10	15	1	25	75	3	100
1.6	Core Practical 1	Yoga Practical –I	10	15	1	25	75	3	100
		Total							600

Semester 2

Part	Study Components	Paper	Internal Assessment				End Semester Exams		Total Marks
			Continuous Mode	Sessional Exams		Total	Marks	Duration (Hr)	
				Marks	Duration (Hr)				
2.1	Core Paper 6	Fundamentals of Yoga–Part 2	10	15	1	25	75	3	100
2.2	Core Paper 7	Medical Physiology–Part 2	10	15	1	25	75	3	100
2.3	Core Paper 8	Human Nutrition & Yoga	10	15	1	25	75	3	100
2.4	Core Paper 9	Immunology & Yoga	10	15	1	25	75	3	100
2.5	Allied Paper 1	Yoga & Exercise therapy	10	15	1	25	75	3	100
2.6	Core Practical 2	Yoga Practical –II	10	15	1	25	75	3	100
		Total							600

Semester 3

Part	Study Components	Paper	Internal Assessment				End Semester Exams		Total Marks
			Continuous Mode	Sessional Exams		Total	Marks	Duration (Hr)	
				Marks	Duration (Hr)				
3.1	Core Paper 10	Fundamentals of Neuroscience & Yoga	**10**	**15**	**1**	**25**	**75**	**3**	**100**
3.2	Allied Paper 2	Biomechanics & Yoga	**10**	**15**	**1**	**25**	**75**	**3**	**100**
3.3	Core Paper 11	Research Methodology &Statistical Methods	**10**	**15**	**1**	**25**	**75**	**3**	**100**
3.4	Core Paper 12	Lifestyle Disorder& Yoga Management	**10**	**15**	**1**	**25**	**75**	**3**	**100**
3.5	Elective Paper 1	Business Management* OR Importance of Veda*	**10**	**15**	**1**	**25**	**75**	**3**	**100**
3.7	Core Practical 3	Yoga Practical –III	**10**	**15**	**1**	**25**	**75**	**3**	**100**
		Total							**600**

* The subject experts at the Department level shall conduct examinations

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Semester 4

Part	Study Components	Paper	Internal Assessment				End Semester Exams		Total Marks
			Continuous Mode	Sessional Exams		Total	Marks	Duration (Hr)	
				Marks	Duration (Hr)				
4.1	Core Paper 13	Yoga & Psychology	**10**	**15**	**1**	**25**	**75**	**3**	**100**
4.2	Project Work 1	Workshop, Research proposal writing, Seminars & Journal Club	**-**						**-**
4.3	Project work 2	1. Dissertation on Yoga. 2. Yoga Posting 3. General Yoga Practice	**Dissertation Presentation & Viva Voce examination**						**100**
		Total							**200**

14.2 Internal assessment: Continuous mode

The Continuous Internal Assessments may be in the form of a combination of periodical tests (two), assignments (two) and seminar (two).The marks allocated for Continuous mode of Internal Assessment shall be awarded as per the scheme given below.

Table VII:
(a) Details of Sessional Assessment / Internal Assessment For 25Marks

Examinations	**Assessment**	**Marks**
Test	Average of the two test performances	**15**
Assignment	Average of the two submitted	**04**
Seminar	Average of two Presentations on given topics	**04**
Attendance	Refer Table -IX	**02**

Table- VIII: Guidelines for the allotment of marks for attendance/semester

Less than 75%	0 marks
75-89%	1 mark
90% and above	2 marks

14.3. Sessional Exams

Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the department. The scheme of question paper for theory and practical sessional examinations is given below. The average marks of two Sessional exams shall be computed for internal assessment as per the requirements given in tables –VII.

Sessional exam shall be conducted for 30 marks for both theory and Practical and shall be computed for 15 marks.

Question paper pattern for Theory- Sessional examinations:

Time: 1 Hours	**Maximum Marks:30**
I. Long Essay (Answer any **one** out of 2 questions)	1 x 10= 10
II. Short Essay (Answer any **two** out of 3 questions)	2 x 5 = 10
III. Short Answers (Answer **all** 5 questions)	5 x 2= 10

Question paper pattern for Practical- Sessional examinations:

Time: 1 Hours	**Maximum Marks:30**
I.Yoga practical - I	10
II. Yoga Practical - II	10
III. Viva voce	10

End semester Question Paper Pattern:

Time: 3 Hours	**Maximum Marks:75**
PART A: **Long Essay** Answer **any THREE** out of four questions All questions carry equal marks	(3 X 10 = 30 Marks)
PART B: **Short Essay** Answer **any FIVE** out of Six questions All questions carry equal marks	(5 X 5 =25 marks)
PART C: **Short Answer** Answer **ALL** questions All questions carry equal mark	(10 X 2 = 20 marks)

15. Re-examination/Supplementary of end semester examinations:

15.1 Students who have missed CIA on valid reason may apply for retests to the Course Teacher concerned specifying the reason for the absence and the Course Teacher shall conduct a retest when satisfied with the validity of the reasons given for the absence. Such conduct must get the approval from the HOD.

15.2 Re-examination of end semester examination shall be conducted as per the schedule given in table IX. The exact dates of examinations shall be notified from time to time.

Table – IX: Tentative schedule of end semester examinations:

Semester	**Exam Schedule**
I, III	November / December
II, IV	May / June

16. Revaluation and Re-totalling of answer papers:

There is no provision for revaluation of the answer papers in any examination. However, the candidates can apply for re-totalling by paying prescribed fee.

17. Duration for completion of the program of study

The duration for the completion of the program shall be fixed as double the actual duration of the program i.e. 4 years and the students must pass within the said period, otherwise they must get Re-Registration.

18. Carry forward of marks

In case a student fails to secure the minimum 40% in any Theory or Practical course, then he/she shall reappear for the end semester examination of that course. However, his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

19. Academic Progression:

19.1 No student shall be admitted to end semester examination unless he/she fulfils the norms given in para 6 (Attendance and progress).

19.2 A candidate who has failed in one or more subjects in the previous semesters should be cleared six months before the end of the final year semester.

19.3 A student shall be eligible to get his/her CGPA upon successful completion of the courses of I to IV semesters within the stipulated time period as per the norms specified in para 17 (Duration of course).

20. Grading of performances:

20.1 Letter grades and grade points allocations:

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course. The letter grades and their corresponding grade points are given in Table – X.

Table X: Letter grades and grade points equivalent to Percentage of marks and performances

Percentage of Marks Obtained	Letter Grade	Grade Point	Performance
90.00 – 100	A+	10	Outstanding
80.00 – 89.99	A	9	Excellent
70.00 – 79.99	B	8	Good
60.00 – 69.99	C	7	Fair
50.00 – 59.99	D	6	Average
Less than 50	F	0	Fail
Absent	AB	0	Fail

A learner who remains absent for any end semester examination shall be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

21. The Semester grade point average (SGPA)

The performance of a student in a semester is indicated by a number called 'Semester Grade Point Average' (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester. For example, if a student takes five courses (Theory/Practical) in a semester with credits C1, C2, C3, C4 and C5 and the student's grade points in these courses are G1, G2, G3, G4 and G5, respectively, and then students' SGPA is equal to:

$$SGPA = \frac{C1G1 + C2G2 + C3G3 + C4G4 + C5G5}{C1 + C2 + C3 + C4 + C5}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and ABS grade awarded in that semester. For example, if a learner has a F or ABS grade in course 4, the SGPA shall then be computed as:

$$SGPA = \frac{C1G1 + C2G2 + C3G3 + C4 * ZERO + C5G5}{C1 + C2 + C3 + C4 + C5}$$

22. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the IV semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all IV semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the fail grades earned earlier. The CGPA is calculated as:

$$CGPA = \frac{C1S1 + C2S2 + C3S3 + C4S4 + C5S5 + C6S6 + C7S7 + C8S8}{C1 + C2 + C3 + C4 + C5 + C6 + C7 + C8}$$

where C1, C2, C3,. is the total number of credits for semester I,II, III, and S1, S2, S3,.is the SGPA of semester I,II,III,…. .

23. Declaration of class

First Class with Distinction	= CGPA of 8.00 and above
First Class	= CGPA of 7.00 to 7.99
Second Class	= CGPA of 6.00 to 6.99

24. Award of Ranks:

Ranks and Medals shall be awarded based on final CGPA. However, candidates who

fail in one or more papers during the M.Sc. (Yoga) program shall not be eligible for award of ranks. Moreover, the candidates should have completed the M.Sc. (Yoga) program in minimum prescribed number of years, (Two years) for the award of Ranks.

25. Award of degree:

Candidates who fulfil the requirements mentioned above shall be eligible for award of degree.

26. Re-admission after break of study

Candidate who seeks re-admission to the program after break of study must get the approval from the AHER by paying a condonation fee. No condonation is allowed for the candidate who has more than 2 years of break up period and he/she must re-join the program by paying the required fees.

Overview of M.Sc. (Yoga)Program curriculum

Sl. no	TYPE OF PAPER	SUBJECTS
SEMESTER I		
1.1	Core Paper 1	Fundamentals of Yoga – Part 1
1.2	Core Paper 2	Medical Physiology– Part 1
1.3	Core Paper 3	Human Anatomy
1.4	Core Paper 4	Medical Biochemistry
1.5	Core Paper 5	Yoga &Food Science
1.6	Core Practical 1	Yoga Practical –I
SEMESTER II		
2.1	Core Paper 6	Fundamentals of Yoga – Part 2
2.2	Core Paper 7	Medical Physiology– Part 2
2.3	Core Paper 8	Human Nutrition & Yoga
2.4	Core Paper 9	Immunology & Yoga
2.5	Allied Paper 1	Yoga & Exercise therapy
2.6	Core Practical 2	Yoga Practical –II
SEMESTER III		
3.1	Core Paper 10	Fundamentals of Neuroscience & Yoga
3.2	Allied Paper 2	Biomechanics & Yoga
3.3	Core Paper 11	Research Methodology &Statistical Methods
3.4	Core Paper 12	Lifestyle Disorders & Yoga Management
3.5	Elective Paper 1	Business Management* OR Importance of Veda*
3.6	Core Practical 3	Yoga Practical –III
SEMESTER IV		
4.1	Core Paper 13	Yoga & Psychology

4.2	Project Work 1	Workshop, Research proposal writing, Seminars & Journal Club
4.3	Project work 2	Dissertation on Yoga Yoga Posting General Yoga Practice

* Internal Examinations

SEMESTER I **Total: 26 Credits**

Sl. no	TYPE OF PAPER	SUBJECTS	Credits
1.1	Core Paper 1	Fundamentals of Yoga – Part 1	4
1.2	Core Paper 2	Medical Physiology– Part 1	4
1.3	Core Paper 3	Human Anatomy	4
1.4	Core Paper 4	Medical Biochemistry	4
1.5	Core Paper 5	Yoga & Food Science	4
1.6	Core Practical 1	Yoga Practical –I	6

Core Paper 1

Fundamentals of Yoga – Part 1 (Theory: 60 hours)

Course Outcome: End of the course, students should be able to understand

1. Different schools of Yoga
2. Importance of Upanishads
3. Techniques of Yoga practice.
4. Theories of Yoga.
5. Importance of Patanjali Yoga Sutra.
6. The functional anatomy of Heart.

Unit I: Schools& Paths of Yoga.(10 hours)

- Paths of Yoga -Types, Meaning, concept & stages.
- Karma yoga, Jnana yoga, Bhakti yoga & Raja yoga.
- Introduction to Schools of Yoga- Yoga philosophy, Shad darshanasa.
- Shad darshanas- In details of Sankhya- Prakriti, Purusha& Mahat.
- Yoga- Ashtanga Yoga, Chitta Vrittis, Chitta Bhumis, Chitta Vikshepa, Chitta prasadana, Nyaya- Pramana Shastra – Pratyaksha, Anumana, Upamana Shabda, Vaisheshika- Padartha, Gunas, Karma, special feature, Mimamsa &Vedanta- Uttara and Purva Mimamsa.

Unit II: Major Upanishads& Human system according to Yoga(15 hours)

- Isha, Kenopanishad,Katho and Prashnapanishad
- Mundaka, Mandukya&Aitreya

- Taitirya, Chandokya & Brihadaranyaka.
- Importance of Upanishads.
- Human System according to yoga -Panchakosha theory; Panch maha buttas, Pancha tanmatras; Sankya yoga philosophy- Purusha & Prakriti; Chakra theory – Sthula sarira & Sukshma sarira, Types of chakras; Tattvas- 96 quality of human body.

Unit III: Theory and Methodology of yoga practices (05 hours)

- Teaching methodology- Concept of Teaching & learning; Stages of teaching; Management techniques of yoga sessions; Quality/ Personality of Yoga teacher & factors influencing them; Basic requirement for conducting yoga session & challenges facing to conduct yoga.
- Teaching skills - required for group yoga sessions & personal/individual yoga session, Preparing lesson Plan for yoga.
- Need of Model yoga plan; Model yoga sessions- group yoga & Individual yoga sessions; Adequate Usage of different study materials in yoga session.
- Uses of Props in Yoga; Instruction & demonstration of yoga class by students on different yogic practices (Instructing each postures & explaining).
- Yoga Record.

Unit IV: Patanjali Yoga Sutra(15 hours)

- Samadhi Pada -Introduction to Samadhi pada, Ishwara pranidhana according to Samadhi pada; Vrittis; Types of Samadhi according to patanjali- Samprajnata Samadhi & Asamprajnata Samadhi in detail.
- Sadhana pada - Disciplines of yoga - Pancha Klesha's; Kriya Yoga according to patanjali yoga sutra; Stages of Gunas; In detail of Astanga Yoga- Yama, Niyama, Asana,Pranayama, Prathyahara, Dharana, Dhyana & Samadhi.
- Vibhuti pada - Introduction to Vibhuti Pada; Achieving Samyama- By Dharana, Dhyana,Samadhi.
- Kaivalya Pada - Process of Liberation through siddhis; Samadhi.
- Concept of Mind according to Patanjali- In detail of Mind, Ego & Intellectual level explained in patanjali yoga sutras (Citta, Manas, Buddhi & Ahankara); Explanation of five stages of the mind according to Vyasa- Kshipta, Vikshipta, Ekagra & Niruddha; In details of modulation of mind according to patanjali yoga sutra (Citta- Vrittis) & its classification; Concept of mind & consiouness -Citta-Vritti Nirodhopaya from yoga sutras.

Unit V: Commentary of Patanjali Yoga Sutras by Various Authors: (15 hours)

- Commentary of Patanjali Yoga Sutra according to Vyasa Bhashya.
- Commentary of Patanjali Yoga Sutra according to Swami Vivekananda.
- Commentary ofPatanjali Yoga Sutra according to Swami Satyananda Saraswati.
- Commentary ofPatanjali Yoga Sutra according to Edwin F.Bryant&Dr.Georg Feuerstein.
- Importance of Patanjali Yoga Sutra.

Reference books:

- Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
- Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati.
- Light on Yoga, by B.K.S Iyengar,Harper Collins Publishers.
- Surya Namaskar by Saraswati, Swami Satyananda, Bihar School of Yoga.
- Teaching methods for Yogic practices by Dr.Gharote M L, Kaivalyadhama, Lonavala.
- Notes on basic principles & methods of teaching as applied to yogic practices and a ready reckoner of yogic practices by Dr.Shri Krishna, Kaivalyadhama, Lonavala, 2009.
- The Principle Upanishads –By S. Radhakrishnan
- The Message of the Upanishads – by Swami Ranganathananda, 1985Bharatiya Vidya Bhavan (Bombay)
- Hatha Yoga Pradeepika by Swami Muktibodhananda.
- Prana, Pranayama & Pranavidya by Swami Niranjanananda.
- The Six Systems of Hindu Philosophy by Swami Harshananda(Ramakrishna Matt).
- Light on Yoga sutra of Patanjali by B.K.S Iyengar -Harper Collins publisher.
- Patanjali Yoga Sutra by Swami Vivekananda.
- Four Chapters of Freedom by Swami Satyananda Saraswati
- The Yoga Sutra of Patanjali by Edwin F. Bryant &Dr.Georg Feuerstein.

CORE PAPER 2

Medical Physiology- Part I (Theory: 40 hours)

Course Outcome: End of the course, students should be able to understand

1. The functions and structure of cell, cell membrane & cell organelles.
2. The composition and functions of different blood components.
3. The structure & properties of nerve and different types of muscle.
4. The composition and regulation of secretions of GIT.
5. The functional anatomy of Kidney
6. The functional anatomy of Heart.

Unit I: General Physiology (04 Hours)

1. Organization of the cell, Cell membrane & its function, cell organelles
2. Intercellular communications
3. Transport across cell membrane
4. Membrane potentials – RMP & Action potential
5. Body fluid compartments; Homeostasis, concepts of physiological norms, range and variations.

Unit II: Blood **(08 Hours)**

1. Composition and functions of blood, Plasma Proteins.
2. Red Blood cells – Erythropoiesis, Morphology of RBC, Functions, Normal values, Variations, PCV and ESR; Haemoglobin - Structure, Functions, Types, Derivatives; Life span and destruction of RBC & Haemoglobin & Jaundice.
3. Leucocytes – Leucopoiesis, Morphology of different types of leucocytes, functions, Variations, Humoral & Cell mediated Immunity.
4. Platelets – thrombopoiesis, morphology, functions, normal values & Variation; Homeostasis and blood coagulation – definition, clotting factors; Mechanism of Clotting,Bleeding disorders, anticoagulants.
5. Blood groups –ABO system and Rh factor. Blood transfusion

Unit III: Nerve and Muscle Physiology **(05 Hours)**

1. Structure of a neuron and classification of nerve fibers, Properties, Degeneration and regeneration of nerve fibers, neuroglia.
2. Muscle: Types, Structure of skeletal muscle; neuromuscular junction and transmission across it.
3. Mechanism of muscle contraction and its molecular basis.
4. Types of contraction- isotonic and isometric contractions.
5. Types of skeletal muscle fibres; Energetic of muscle contraction– Rigor mortis;smooth muscle– Structure & Mechanism of contraction.

Unit IV: Gastrointestinal System **(06 Hours)**

1. Introduction – Anatomy of G.I. tract, composition, functions of saliva; Mastication & Deglutition.
2. Stomach – Compositions, functions of gastric juice, Mechanism of secretion of HCl &gastric Motility.
3. Exocrine pancreas – Compositions, functions of Pancreatic juice.
4. Liver and gall bladder – Function of liver, Composition, and functions of bile; function of gall bladder.
5. Small intestine & Large intestine – Composition and functions of succus entericus, Small intestine movements; Large intestine – Functions and motility.

Unit V:Renal system, Skin and Temperature regulation **(07 Hours)**

- Functional anatomy of kidney, Types of nephrons, JG Apparatus and Renal blood flow, Non excretory functions of kidney.
- Glomerular Filtration Rate (G.F.R) - Definition, Mechanism of filtration and its regulation.
- Tubular function – Glucose, Water, Sodium and Chloride reabsorption, concentration mechanism of urine, acidification of urine.
- Micturition and Cystometrogram, Renal function tests.
- Skin & its functions and temperature.

Unit VI: Cardiovascular System **(10 Hours)**

- Functional anatomy of heart, Properties of cardiac muscle; Innervation of the

heart.
- Conducting system of Heart, Origin & Spread of cardiac impulse, ECG
- Cardiac cycle; Heart rate and regulation of heart rate.
- Cardiac output definitions, variations, regulation; Blood flow & factors affecting it.
- Blood pressure – Normal values, measurement, factors affecting and regulation; Regional circulation –coronary shock, cardiopulmonary resuscitation; cardiovascular changes during muscular exercises.

Practical*: 27 hrs

- Study of the microscope & Effect of different concentrations of Saline on RBC 04 hrs
- Haemoglobin estimation 06 hrs
- Study of Haemocytometer 02 hrs
- Enumeration of Red Cell Count 07 hrs
- Demonstration of Packed cell volume and ESR 02 hrs
- Determination of Bleeding time and clotting time 05 hrs
- Demonstration of ECG 01 hrs

[* Internal Examinations- Practical exam will be conducted at department level]

Reference books:

1. Essentials of Medical Physiology by K Sembulingam & Prema Sembulingam.
2. Complete Medical Physiology by A K Jain Avichal Publishers Delhi
3. Textbook of Physiology for Undergraduates by Indu Khurana.
4. Guyton & Hall - Text of Physiology, Elsevier, Latest edition
5. Ganong's Review of Medical Physiology, Lange Publications, Latest edition
6. Textbook of Practical Physiology by G.K.Pal – University Press.
7. Manual of Practical Physiology by A.K.Jain, Arya` Publishers Delhi

Core Paper 3

Human Anatomy (Theory: 48 hours)

Course Outcome: End of the course, students should be able to understand

1. The normal anatomical position, various planes, relation, comparison & movement in our body.
2. The different types of joints.
3. The blood, nerve supply & parts of a bones& muscles.
4. The difference between blood, vascular and lymphatic system
5. The structures of various organs.

Unit I: General Anatomy (08 Hours)

1. Introduction to anatomy, Skeleton system with classification.
2. Types of bone, features of long bone, ossification, blood supply.

3. Joints – Classification with examples, structure of typical synovial joints.
4. Myology–Classification with examples, types of skeletal muscles, tendon, aponeurosis
5. Nervous system–Subdivisions, types of cells in CNS, neuron - structure, types, ganglia and plexuses.

Unit II: General histology, General Embryology & Genetics (02Hours)

1. Microscopic structure of epithelial tissue, Connective tissue & Cartilages.
2. Microscopic structure of Blood vessels, Nervous tissue, Bone & Muscular tissue.
3. Microscopic structure of lymphoid tissue, salivary glands& Skin.
4. Introduction to General embryology
5. Introduction to Genetics.

Unit III: Musculoskeletal system (04Hours)

1. Introduction to all the bones &
2. Muscles of limbs
3. Muscles of trunks
4. Muscles of head
5. Muscles of neck

Unit IV: CVS & Blood vessels of body (04 Hours)

1. Pericardium.
2. Heart.
3. Blood and Nerve supply of Heart.
4. Blood vessels of limbs & trunks
5. Blood vessels of Head & Neck

Unit V: Gastrointestinal System (06 Hours)

1. Gross anatomy of Stomach.
2. Gross anatomy of Duodenum, Jejunum & Ilium.
3. Gross anatomy of Cecum & Appendix.
4. Gross anatomy of Rectum & Anal canal.
5. Gross anatomy of Spleen, Pancreas, Liver &Extra hepatic biliary apparatus.

Unit VI: Renal system (04 Hours)

1. Gross anatomy of Kidney.
2. Gross anatomy of Ureter.
3. Gross anatomy of Urinary bladder

Unit VII: Respiratory system with related histology (04 Hours)

1. Gross anatomy of Nasal cavity.
2. Gross anatomy of Larynx.
3. Gross anatomy of Trachea, Pleura.
4. Gross anatomy of Lungs.
5. Bronchopulmonary segments.

Unit VIII: Reproductive & Genital system with related histology (04 Hours)

1. Gross anatomy of testis, epididymis.
2. Gross anatomy of vas deferens.
3. Gross anatomy of prostate.
4. Gross anatomy of uterus.
5. Gross anatomy of fallopian tube & Ovary.

Unit IX: Endocrine System (02 Hours)

1. Gross anatomy of Supra renal gland.
2. Gross anatomy of Pituitary gland.
3. Gross anatomy of Thyroid gland

Unit X: CNS (06 Hours)

1. Parts of CNS
2. Parts of brain with its functions.
3. Parts of brain stem with its functions.
4. Spinal cord.
5. Cranial nerves.

Unit XI: Special sensory organs (02 Hours)

1. Gross anatomy of Tongue.
2. Gross anatomy of Eye.
3. Gross anatomy of Ear.

Unit XII: Hatha Yoga Anatomy (02 Hours)

1. Muscles-Its Action, Origin & Insertion responsible to perform asanas of Gheranda Samitha text (32 Asanas).
2. Muscles-Its Action, Origin & Insertion responsible to perform asanas of Hatha Yoga Pradipika text (35 Asanas).

Practical*: 12hrs.

- Demonstration of bones of limbs (02 hrs)
- Demonstration of pericardium & heart (01 hrs)
- Demonstration of GIT organs (01)
- Demonstration of urinary system organs (02)
- Demonstration of lumbar vertebrae, bony pelvis (02 hrs)
- Demonstration of organs of respiratory system (01 hrs)
- Demonstration of genital system (01hrs)
- Demonstration of CNS & sensory organs (02hrs)

[* Internal Examinations- Practical exam will be conducted at department level]

Reference books:

- Human Anatomy by B.D.Chaurasia.
- Human Anatomy by Dutta A.K. Vol. I-III.

- Principle of General Anatomy by Dutta A.K.
- Atlas of Human Anatomy by Frank H. Netter.
- Medical genetics by SD Gangane.
- Human Embryology by Inderbir Singh.
- Anatomy of Hatha Yoga by Coulter, H David (Body and breath Inc USA, 2001).

Core Paper 4

Medical Biochemistry (Theory: 40 Hours)

Course Outcome: End of the course, students should be able to understand

1. The Properties of carbohydrates, proteins, lipids, cholesterol.
2. The Properties of DNA, RNA.
3. The Properties of glycoprotein and glycolipids and their importance in biological systems
4. The Concepts of enzymes, vitamins, and minerals

UNIT I:Introduction to Medical Biochemistry (2 Hours)

1. Importance of medical biochemistry
2. Importance and scope in prevention.
3. Importance and scope in diagnosis.
4. Importance and scope in therapeutics of diseases.

UNIT II: Cell Biology and Cell membrane (4 Hours)

1. Structure and composition of cell; Functions of cellular structures.
2. Transport across the cell membrane- Facilitated diffusion; Passive transport; Active transport; Endocytosis and exocytosisMembrane transport: Simple diffusion, Facilitated diffusion,
3. Active transport (primary and secondary).
4. Passive transport, Symport, Uniport and Antiport. Exocytosis, Endocytosis, Pinocytosis.
5. Receptor mediation transport.

UNIT III: Carbohydrates Chemistry (4 Hours)

1. Carbohydrates: Definition, Biological importance of Carbohydrates.
2. Optical and Stereoisomerism of sugars; Mutarotation, Cyclicstructure, Epimers and Anomers.
3. Monosaccharides -Classification, Structure and Biological importance of Trioses, Tetroses, Pentoses and Hexose sugars;Reactions of sugars.
4. Disaccharides - Structure and Biological importance of Sucrose, Lactose and Maltose. Polysaccharides:
5. Homopolysaccharides; Structure, Biological functions of Starch, Glycogen, Cellulose.Chitin, Dextrin, and Inulin; Heteropolysaccharides; Structure,

Biological functions of Hyaluronic acid, Chondroitin sulphate and Heparin.

UNIT IV: Lipids Chemistry (4 Hours)

1. Definition, Classification and Biological importance of lipids.
2. Simple lipids, Properties and Characterization of fats – Hydrolysis, Saponification, Rancidity.
3. Compound lipids - Structure and function of phospholipids -Lecithin, Sphingomyelin, Cephalin, Phosphatidyl Inositol and Phosphatidylserine. Glycolipids (Gangliosides and Cerebrosides).
4. Derived lipids - Classification, structure, and properties of saturated and unsaturated fatty acids.
5. Essential and Non-essential fatty acids; Sterols –Structure, Function and Properties of Cholesterol, Bile acids and lipoproteins biological importance and significance; Eicosanoids, Prostaglandins, Leukotrienes and Thromboxanes.

UNIT V:Aminoacids and Proteins (4 Hours)

1. Amino acids: Definition, Amino acids; Structure and classification of amino acids; Chemical reaction of amino acids.
2. Essential and Non-essential amino acids. Naturally occurring peptides-Glutathione, bradykinin.
3. Peptide bond: Structure and significance of peptide bond, amino acid sequencing (Sanger's and Edman methods).
4. Protein structure: Levels of structure in Protein Architecture, Primary structure of proteins (Eg.Insulin), Secondary structure of proteins – helix and β- pleated sheet, fibrous proteins; α-keratins,collagen.Tertiary structure of proteins (Eg. Myoglobin), Protein folding; Quaternary structure of proteins (Eg. Haemoglobin), globular proteins. Bonds stabilizing the Protein structure.
5. Plasma proteins and its biological importance

UNIT VI: Nucleic acids Chemistry (4 Hours)

1. Properties of Purines, Pyrimidines, Nucleosides, Nucleotides.
2. Functions of Nucleotides.
3. DNA: base composition, primary and secondary structure. Double helical structure (B, A and Z forms); stabilizing forces secondary structure. Tertiary structure of DNA.
4. Physicochemical properties of nucleic acid: Denaturation, Chemical and enzymatic hydrolysis of nucleic acids. Hybridization and its significance. Isolation of nucleic acids.
5. RNA and its types: Structure, types mRNA, tRNA and rRNA. Primary, secondary, and tertiary structure of tRNA. Functions of RNAs.

UNIT VII: Enzymes (6 Hours)

1. Enzyme definition and classification, nomenclature,
2. Properties, specificity, cofactors and coenzymes, Km value, factors influencing

velocity of enzyme action, inhibition of Enzyme catalysed reactions.
3. Mechanism of enzyme action, enzyme kinetics, regulation of enzyme action, isoenzymes, clinicalenzymology.
4. Immobilized enzymes- applications, Diagnostics &Therapeutics.
5. Analytical use of Enzymes.

UNIT VIII: Vitamins and Minerals (6 Hours)

1. Classification of Vitamins - Fat soluble and water soluble.
2. Dietary source, structures, RDA, functions, and deficiency states.
3. Macro and micro elements – Dietary source, structures, RDA, functions.
4. Deficiency of Iron, calcium, phosphorus, magnesium and iodine,
5. Deficiency of Zinc and copper.

UNIT IX:Nutrition (4 Hours)

1. Nutrients, Calorific value of food, BMR, SDA, respiratory quotient, and its applications.
2. Balanced diet based on age, sex and activity,
3. Biological value of proteins, nitrogen balance.
4. Dietary fibres and its biological importance. Protein energy malnutrition – kwashiorkor and marasmus.
5. Biochemistry of obesity; Dietetics, Total parenteral nutrition, Nutritional disorders.

UNIT –X: Free radicals and Antioxidants (2 Hours)

1. Formation of reactive oxygen species.
2. Exogenous causes of formation of Free Radicals & its effect on body.
3. Antioxidants& its importance.

Practical*: (15 Hours)

1. Introduction to Biochemistry Practical's.
2. Qualitative analysis of carbohydrates-
3. Qualitative analysis of amino acids
4. Qualitative analysis of lipids
5. Reactions of NPN substances
6. Identification of substance of physiological importance.

[* Internal Examinations- Practical exam will be conducted at department level]

Recommended books

1. Biochemistry by U Satyanarayana.
2. Lehninger, Principles of Biochemistry byDL Nelson and MM Cox;WH Freeman Publication.
3. Biochemistry by D.Voet and JG Voet, John Willey & Sons Publication.
4. Enzymes: Biochemistry, biotechnology, clinical chemistry by T. Palmer; Affiliated East West Press Private Limited.
5. Biochemistry by L. Stryer; W H Freeman & Co.

Core Paper 5

Yoga & Food Science (Theory:60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The concept of health & disease according to Yoga.
2. The theories & human consciousness of Yoga.
3. The fundamentals of food science.
4. The role of nutraceuticals on health & disease.

Unit I: Yogic Perspective of Health & Disease (20 hours)

1. Yogic view of Health & Disease- Adhi & Vyadhi concept by Yoga Vashista; Panchklesha according to Patanjali; Triguna theory; Tridosha theory – Vata, Pitta, Kapha according to Ayurveda; Concept of health & disease according to WHO
2. Human System according to Yoga- Theory of body according to yoga- Panchakosha
3. theory; Panch maha buttas, Pancha tanmatras; Sankya yoga philosophy- Purusha & Prakriti. Chakra theory – Sthula sarira & Sukshma sarira, Types of chakras; Tattvas- 96 quality of human body.
4. Consciousness explained in Yogic texts:Consciousness in Upanishad; Consciousness in Buddhism; Consciousness in Advaita Vedanta; Consciousness in Jain Darshan; Consciousness and Soul; Consciousness according to Vedanta; Consciousness according to Advaita, Dvaita and Visista advaita schools, Consciousness according to Nyaya, Vaisesika and Sankya Schools; Role of yoga (3 states of mind) in human consciousness; Spirituality in human consciousness.
5. States of Consciousness: Conscious, Subconscious and Unconscious; Consciousness according to western psychology, Levels of Consciousness. Physiology of sleep; Human behaviour and consciousness.
6. Yoga &Human relationship: Yogic perspective -Maitri, Karuna, Mudita and Upeksha; Concept of Vasudaiva Kutumbakam; Concept of Samman (Respect), difference between respect and differentiation.

Unit II: Cereals,Legumes & Nuts and Oil seeds (15 hours)

1. Concept of food and classification of food.
2. Types, Composition,Nutritive value, importance in health & disease of All 8 Millets &Cereals –Rice, Wheat, Maize, Barley & Oats.
3. Pulses and legumes- Composition, nutritive value, anti-nutritional factors, physical & chemical properties of proteins.
4. Nuts and oil seeds – composition, nutritive value.
5. Fats and oils - Physical and chemical properties of fats and oil, importance and adverse effect of fats & oils, rancidity and prevention and its uses.

Unit III: Fruits, Vegetables, Spices and Condiments & Milk (15 hours)

1. Fruits– Composition, nutritive value, structure, Texture, pigments and flavour component, changes during cooking and processing and browning reaction.
2. Vegetables - Composition, nutritive value, structure, Texture, pigments and flavour component, changes during cooking and processing and browning reaction.
3. Spices and condiments – Composition, Spice principles.
4. Milk – Composition, types, nutritive value, physical and chemical properties, coagulation of milk protein; Soya milk, Coconut milk & Almond milk- Composition, nutritive value.
5. Water- properties, water as medium of cooking.

Unit IV: Nutraceuticals, Antioxidants& Functional Foods (10Hours)

1. Introduction & Classifying nutraceuticals & Functional Foods; models for nutraceuticals- Animal source & Food source.
2. Plant metabolites as Nutraceuticals Carotenoids; Conjugated linolenic acid; Flavonoids; Amino acid; Omega – 3; PUFA; Terpenoids; Mechanism of action – Anticancer, positive influence on blood lipid profile, anti-oxidation, anti-inflammatory.
3. Phytochemicals –Classification; Importance in health and disease;Food containing Phytochemicals & its benefits.
4. Antioxidants – Classifications; importance of antioxidants in health and disease; Antioxidants rich food &its benefits.

Recommended books:

1. Jnanananda Bharati Essence of Yoga Vasishoha, Pub: Sanata Books, Chennai
2. Hatha Yoga Pradeepika by Swami Muktibodhananda.
3. Prana, Pranayama & Pranavidya by Swami Niranjanananda.
4. Yoga Health by Dr H R Nagendra & Dr R Nagarathna
5. Patanjali Yoga Sutra by B.K.S.Iyengar.
6. Food Science by Srilakshmi.
7. Food Science and Experimental Foods by Swaminathan.M.
8. Food Science by Potter. N.N.
9. Essentials of Food Science by Vickie A. Vaclavik, Elizabeth W. Christian ,Springer.
10. Natural Antioxidants in Human Health and Disease by Balz Frei, Elsevier.
11. Handbook of Nutraceuticals and Functional Foods by Robert E C ed Wildman.
12. Functional Foods and Nutraceuticals by Aluko Rotimi ,New India Publishing Agency

CORE PRACTICAL 1

YOGA PRACTICAL- I (Total:240 Hours)

All Yogic sessions will be started with brief theory of technique of yogic practices, name of the practice, precautionary measures to be taken before, during and after practice of yoga, its benefits, indications, contraindications and its exclusive features. This will enhance the students to learn different techniques of yoga and to master the skills of practicing and teaching skills of yoga.

Language - Spoken English

Unit –I: Prayer:

1. Recital of Pratah-smaran, Shanti Mantras.
2. Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

Unit II: Breathing Practices & Sukshma Vyayama (Loosening exercise)

1. Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique,Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.
2. Sukshma Vyayama: All Joints Rotation: Fingers, Wrist, Elbows, Shoulder rotation, Neck Flexion/ Extension, Neck rotation, Hip rotation, extension and all possible movements, Forward, Backward & Sideward bending, Situps; Standing posture: Alternate toe touch, sideward stretch; Sitting posture: Alternate toe touch, butterfly movement, sideward bend; Supine posture: Alternate straight leg rise, knee bend movements, leg extension and abduction, Lumbar stretch exercise & its variations.

Unit III: Kriyas (Internal cleansing)

1. Neti : Jala Neti, Sutra Naeti
2. Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
3. Trataka & Agnisara kriya

Unit IV: Asanas, Pranayama, Mudras, Bandhas & Shloka chanting:

1. Suryanamaskara (12 Series of asansa), Variations of Suryanamsakara, Chandranamaskara.
2. Standing Series: Padahastāsana , Ardha Chakräsana , Ardhakati Chakräsana, Trikonasana, Parivatra trikonasana, Utkatasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; Sitting Series: Konasana series,Vajräsana, paschimotasnasana Ustrasana, Vakrāsana, Ardha Matsyendräsana; Prone Series: Bhujangasana, Shalabasana, Dhanurasana, Navasana, makarasana; Supine series: Uttitapadasana, setubhandasana,pavanamuktasana.
3. Pranayama with variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama,Ujjai, Sheetali Pranayama, Shitkari Pranayama, Nadi

shodhana & Kumbaka
4. Relaxation technique- Shavasana, QRT, IRT, DRT
5. Mudras & Bandhas- All mudras & bandhas as per theory
6. Bhagavat gita & Patanjali yoga sutras- Samadhi pada & Sadhana pada shlokas Vibhuti & Kaivalya pada shlokas

Unit V:Personal training:Personal trainer method of Standing& Sitting postures Yoga

postures; Teaching methodology practical: Communication skill, Precaution, instruction, demonstration and Correction of Yogic practices.

Reference books:

1. Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
3. Light on Yoga, by B.K.S Iyengar,Harper Collins Publishers.
4. Surya Namaskar by Saraswati, Swami Satyananda, Bihar School of Yoga.

SEMESTER II **Total: 26 Credits**

Sl. no	TYPE OF PAPER	SUBJECTS	Credits
2.1	Core Paper 6	Fundamentals of Yoga – Part 2	4
2.2	Core Paper 7	Medical Physiology– Part 2	4
2.3	Core Paper 8	Human Nutrition & Yoga	4
2.4	Core Paper 9	Immunology & Yoga	4
2.5	Allied Paper 1	Yoga & Exercise therapy	4
2.6	Core Practical 2	Yoga Practical –II	6

Core Paper 6

Fundamentals of Yoga - Part 2 (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The concept of yoga according to Hatha Yoga.
2. The types of Yoga according to Bhagavad Gita.
3. The Scientific basis of Asana & Pranayama.

Unit I: Hatha Yoga & Benefits **(30 hours)**

1. Six Purification techniques- Dhauti & its importance; Basti & its curative effect; Neti & its benifits; Trataka & curative effective of trataka; Nauli & its benifits; Kapalbhati & its importance; Freedom from excess doshas through shatkarmas.
2. Hatha Yoga:Hatha rathna valli84 classical asanas; Hatha yoga pradepikaasana practice (15asanas) - Swastikasana,Gomukasana, Koormasana, Uttanakoormasana, Dhanurasana, Mathyesndrasana,Paschimothanasana,

virasana, kukkutasana, mayurasana, shavasana& its benefits; Four major asana & its benefits; Sequence of hatha yoga practice; Asanas according to Gheranda Samitha(32 asanas); Yama and Niyama and its relevance in Hatha Yoga Sadhana.

3. Pranayama: Interconnection of mind and prana; Five functions of Vayu; Nadis & its impurities; Retention of Prana through purification of prana & chakra; State of mind for pranayama; Purification of nadis; Control of prana; Types of pranas; Time & duration of pranayama practice; Kumbhaka & its types; Kevala kumbaka & perfection of hatha yoga & raja yoga through kumbhaka; Pranayama according to hatha yoga- Suryabedhana, Ujjayi, Seetakari, Bhastrika, Bhramari, Moorcha, Plavini pranayama.
4. Mudras & Bandhas: Kundalini–Key to liberation;Names of Kundalini shakti; Benefits of kundalini moving; Ida, Pingala & sushumna; Moving of kundalini; Methods to purify nadis. Ten mudras; Eight siddhis obtained by mudra; Maha mudra & its power; Currative effect of maha mudra; Maha Bandha –unites three nadis; Maha vedha mudra- Benefits& regulation; Kechari Mudra- Benefits, technique; Uddiyana bandha- Benefits; Moola Bandha- benefits& physical effect; Jalandhara bandha- Benifits; Benefits ofthree bandhas; Vipareeta karani mudra, Vajroli mudra, Sahajoli mudra, Amaroli mudra, Shambavi- Its importance and benefits; Ten mudras told by Adinath.
5. Samadhi: Process of Samadhi; Nadis- 72000 nadis and important nadis- Ida, Pingala & Susuhmna; Gurus compassion, Chitta causes- Prana & Vasana; Mind & Prana; Kevala kumbhaka & mind; Shiva & turiya; Various stages to attain Samadhi; Mind dissolves in Samadhi; Centring the- mind and shakti, atma and brahma; Shoonya.
6. Nada anusandhana – Types of Nada,Exploration of sound; Four stages of yogic practice and hearing the nada- Arambha avastha, Ghatha avastha, Parichaya avastha, Nispatti avastha; Raja yoga- State of Ishwara tattwa; Relation of yoni mudra to Nada; Mind & Nada; Uses of Nada, Essence of Nada; Hatha yoga & Laya yoga is way to Raja yoga; Samadhi in relation to time, karma & other influence; Samadhi & liberation.Essential Texts of Hatha Yoga.
7. Practice of Hatha yoga to attain Samadhi.
8. Commentory of Essential Texts of Hatha Yoga:Gheranda Samhita (G.S.) & Hatha Rathnavali (H.R.) & Shiva Samhita (S.S.)

Unit II: Yoga as per Bhagavad Gita: (15 Hours)

1. Karma Yoga (2nd, 3rd ,4th & 5th Chapters) according to Bhagavat gita.
2. Bhakti Yoga (10th ,11th ,12th & 13th Chapters) explained in bhagavad gita.
3. Jnana Yoga (1st Chapter).
4. Raja Yoga according to bhagavat gita (6th to 9th chapters).
5. Sankya yoga and sanyasa yoga according to bhagavad gita (1st chapter).

Unit III: Advance technique: (15 hours)

1. Advanced Asanas- Technique, teaching & benefits of Mayurasana, chakrasana, Upavisthakonasana, Rajkopatasana, Hanumanasana, Omkarasana, Natrajasana, Purnabhujangasana, Purnashalabasana, Kurmasana, Matsyendrasana,Purna dhanurasana, Purnaahcakrasana, Kukutasana, Ekapada rajakopatasana, Goraknasana, Bakasana; Siddhasana ,Padmasana ,Guptasana ,Matsyasana , Garuoasana , Yogasana , Hastapadaigunohasana ,Praiavasana , Naukasana , Bhunamanasana , Sarvangasana , Akareadhanurasana Padaigunohasana Brahmacaryasana ,Utthita Padmasana ,Magasana ,Udarakarnasana ,Tolangulasana Purvottanasana.
2. Kriyas- Nauli: Madhyam Nauli, Vama Nauli, Dakshina Nauli and Nauli Kriya.
3. Advance Meditation – Theory of OM meditation; Vipassana meditation; Transcendental meditation, Pranic energising technique, Mind Sound Resonance Technique & Cyclic meditation.

References:

1. Hatha Yoga Pradeepika, by Swami Muktibodhananda Saraswati.
2. Swami Satyananda Saraswati, Hatha Yoga Pub: BSY Mungher
3. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
4. Gheranda Samhita by Swami Nirajanananda Saraswathi

Core Paper 7

Medical Physiology– Part 2 (Theory: 40 Hours)

Course Outcome: End of the course, students should be able to understand

1. The function of respiratory system.
2. The role of endocrine hormone.
3. The physiology of reproductive system.
4. The function & pathways of CNS& Special senses.

Unit I: Respiratory System (8 Hours)

1. Introduction – Functional anatomy of respiratory system
2. Pulmonary Ventilation – Mechanism of ventilation, Muscles, pressure changes, Lung volume & capacities Surfactant, compliance, Airway resistance.
3. Alveolar ventilation, dead space ventilation, Ventilation Perfusion ratio.
4. Respiratory membrane, partial pressure of gases. Diffusion of gases and factors affecting it.
5. Oxygen transport –Dissociation curve and CO2 transport; Regulation of respiration – Neural & Chemical; Hypoxia - types, Periodic breathing; Decompression sickness; Respiratory adjustments during muscular exercise.

Unit II: Endocrine System (8 Hours)

1. Introduction to endocrinology, classification and mechanism of action of hormones.
2. Pituitary gland:Anterior pituitary hormones, their actions, Regulation of secretion and disorders; Posterior pituitary hormones - Actions, Control and disorders.
3. Thyroid hormones - Synthesis, actions, Regulation of secretion and disorders; Parathyroid hormones - Actions, Regulation of secretion and disorders; Calcium homeostasis.
4. Endocrine pancreas – Source, Actions, regulationof Insulin & Glucagon& Clinical disorders.
5. Adrenal gland-Adrenal cortical &Adrenal medullary hormones – Actions, Regulation and Disorders.

Unit III: Reproductive System (6 Hours)

1. Male reproductive system-Physiological anatomy.
2. Spermatogenesis and its regulation; Testosterone, semen.
3. Female reproductive system-Menstrual cycle.
4. Oestrogen & Progesterone.
5. Physiology of Pregnancy; Contraceptive measures.

Unit IV: Central Nervous System (12 Hours)

1. Organization of central nervous system, Cerebrospinal fluid & Blood brain barrier.
2. Synapse : Transmission and properties, excitatory and inhibitory neurotransmitters; Receptors and properties
3. Sensory system: Primary sensations : ascending tracts and sensory cortex
4. Pain sensation and thalamus; Spinal cord: Reflexes; Pyramidal and extra pyramidal tracts
5. Functions of Basal ganglia, Cerebellum, Vestibular apparatus,Hypothalamus, ANS, Limbic system; Sleep and EEG

Unit V: Special Senses (6 Hours)

1. Vision: Functional anatomy, Aqueous humor &Intraocular pressure;Image forming mechanism, Errors of refractions; Retina – structure and Photochemistry of vision; Visual activity, Visual pathway and its lesion , visual cortex; Accommodation, Dark adaptation, Pupillary reflexes & Colour vision.
2. Hearing: Functional anatomy of Ear; Auditory pathway and auditory cortex; Role of tympanic membrane, middle ear and cochlea in hearing; Tests for hearing and deafness.
3. Taste and smell: Receptors, Pathways and Modalities.

Practical*: 30 hrs

1. Total Leucocyte count 06 hrs
2. Differential leucocyte count 12 hrs
3. Absolute Eosinophil count 06 hrs
4. Blood grouping 04 hrs
5. Demonstration of Spirometry 02 hrs

[* Internal Examinations- Practical exam will be conducted at department level]

Reference books:

1. Essentials of Medical Physiology by K Sembulingam & Prema Sembulingam.
2. Complete Medical Physiology by A K Jain Avichal Publishers Delhi
3. Textbook of Physiology for Undergraduates by Indu Khurana.
4. Guyton & Hall - Text of Physiology, Elsevier, Latest edition
5. Ganong's Review of Medical Physiology, Lange Publications, Latest edition
6. Textbook of Practical Physiology by G.K.Pal – University Press.
7. Manual of Practical Physiology by A.K.Jain, Arya` Publishers Delhi

Core Paper 8
Human Nutrition & Yoga (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The concept of Bioavailability of food.
2. The functions of Carbohydrates, Protein & Fat.
3. The functions & importance of Vitamins & Minerals.
4. The energy & nutritional requirement during physical activities.

Unit I: Metabolism of Carbohydrate (10 Hours)

1. Carbohydrates –nutritional importance, functions.
2. Food Sources, RDA, physiological functions, Digestion and Absorption of dietary carbohydrates.
3. Metabolism of carbohydrates- Glycolysis, TCA cycle, Pentose &Phosphate pathway.
4. Dietary Fiber - Definition, sources, types of fiber, role in digestion, Interaction with other nutrients, essentiality and adverse effects of dietary fiber.
5. Factors influencing metabolism of carbohydrates and their metabolic disorders

Unit II: Metabolism of Protein (10 Hours)

1. Proteins - Physiological functions, Food Sources, RDA,
2. Digestion and absorption of protein
3. Concepts of essential and non-essential amino acid- their role in growth and development,

4. Protein Bioavailability – Factors affecting Plant and Animal sources.
5. Protein content of common foods (Dal,egg,milk,pulses) found in the diet.

Unit III: Metabolism of Lipid: (10 Hours)

1. Fats and lipids- Dietary types, Food Sources, RDA, Utilization & physiological functions.
2. Digestion and absorption of lipids.
3. Lipid transformation in the liver, lipotrophic factors, deposition of fat in the body.
4. Visible and invisible fats. EFA, SFA, MUFA, PUFA-sources, utilization and physiological functions.
5. Role of lipoproteins, triglycerides in health and disease. Lipids related to CHDs and obesity.

Unit IV: Metabolism of Vitamins & Minerals: (20 Hours)

1. Vitamins - Fat soluble (Vitamin A, Vitamin D, E & K) and water-soluble vitamins (Vitamin C, Thiamine, Riboflavin, Niacin, Pantothenic acid, Biotin, Folic acid, Vitamin B12, Vitamin B6)-Digestion, absorption, transport and excretion
2. Fat soluble & water-soluble Vitamins -Functions, interaction with other nutrients (if any), RDA, Deficiency and toxicity, major source and nutritional assessment.
3. Minerals Macro (Calcium, Phosphorus Magnesium, Sodium, Potassium, chlorine) and micronutrients (Iron, Zinc, copper, iodine, manganese)Digestion, absorption, transport and excretion,
4. Macro& Micro Minerals - requirements, functions and deficiency symptoms., functions, homeostasis, interaction with other nutrients (if any), RDA, Deficiency and toxicity, major sources.

Unit V. Metabolism & Nutritional needs during exercises: (5 Hours)

1. Aerobic & Anaerobic metabolism; Energy sources for muscle use- ATP, phosphor creatine, glucose, fat, and protein.
2. Anaerobic metabolism during power exercises Aerobic metabolism during endurance exercises.
3. Nutrition during power, speed, and endurance exercises -Nutritional needs and plans during power and speed exercise - before, during and after.
4. Nutrition plan during combined power and endurance sports.

Unit VI: Bioavailability &Yogic Diet (5 Hours)

1. Concept of Bioavailability of macro and micronutrients; Concept of Bio accessibility
2. Definition of food according to Yoga - Sathvic, Rajasic & Tamasic.
3. Concept of Vegan diet &
4. Fruit Diet

Reference Books:

1. Nutrition Science by Srilakshmi B,
2. Handbook ofNutrition by Michael Zimmermann,M.D.
3. Modern Nutrition in Health and Disease byRobert J. Cousins PhD, Katherine L. Tucker&Thomas R. Ziegler.
4. Understanding Normal and Clinical Nutrition by Sharon Rady Rolfes, Kathryn Pinna, Ellie Whitney.
5. Advanced Nutrition and Human Metabolism by Sareen S. Gropper, Jack L. Smith, James L. Groff.
6. Hatha Yoga Pradeepika by Swami Muktibodhananda Saraswati.
7. The Holy Gita, Swami Chinmayananda, Chinmaya Mission.

Core Paper 9
Immunology& Yoga (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The concept of Immune response in body.
2. The importance of immune cells in maintaining health.
3. The role of immune response in disease condition.

Unit I: Introduction to Immunology (11 Hours)

1. Historical development and milestones in immunology.
2. Contributions of Edward Jenner, Louis Pasteur, Emilvon Behring &Kitasato, Metchinkoff,
3. Lymphatic system- Primary & secondary lymphoid organs,its function, clinical significance.
4. Reticulo-endothelial system.
5. Types of immunity- Innate & Acquired.

Unit II: Non-specific defences (11 Hours)

1. Barriers to infection – skin, mucous membrane, inflammation and phagocytosis.
2. Complement system: Classical, alternate and lectin binding pathway, Generation of membrane attach complex. Anaphylo-toxins &Opsonine.
3. Antigens: Chemical nature & properties, Epitopes, Antigenicity, Immunogenecity, Valency of antigens, Haptens.
4. Antibodies: Structure, Classes, Paratopes, Immunoglobulin variants – Isotypes, Allotypes & Idiotypes, Valency of antibody, antibody diversity.
5. Immune responses: Primary and secondary, class switching. Structure &functions-Major histocompatibility complex (MHC) antigen in man;Introduction to Vaccines.

Unit III: Cellular basis of immunity (11 Hours)

1. Haematopoiesis.
2. Biology of T-cells and B-Cells; T-cell subsets; T-cell and B-Cell receptors. Antigen presenting cells and accessory cells (macrophages & dendritic cells), T-cell and B-Cell co-operation, Antigen processing & presentation, Clonal selection.
3. Cytokines – role in immunity.
4. Immune-Suppression.
5. Hypersensitivity: Types of Hypersensitivity reactions. Types I, II, III & IV Anaphylexis.

Unit IV: Disorders of immunity (11 Hours)

1. Immunological tolerance.
2. Autoimmunity.
3. Immunodeficiency disorders.
4. AIDS.

Unit V: Tumor immunology (11 Hours)

1. Tumor associated antigens
2. Tumor specific antigens.
3. Immune surveillance.
4. Tumor Necrosis Factor.
5. Immunotherapy.

Unit VI: Role of Yoga in modulating Immunity. (5 hours)

1. Physiology of Stress.
2. Oxidative stress– Effect of oxidative stress on disease; Generation of free radicals, damaging reactions of free radicals, modulation of free radicals by natural antioxidants.
3. Management of Stress by Yoga – Role of Pranayama, meditation, relaxation technique & OM chanting
4. Scientific evidence for Yoga &Immune modulation.

Reference Books:

1. Kubay's Immunology,W H Frecman& Company NewYork–7th edition.
2. Essential Clinical Immunology edited by John B. Zabriskie.
3. Introduction to Medical Immunology Fourth Edition Edited by Gabriel Virella
4. IMMUNOLOGY by Guus van der Bie MD
5. Medline Data base- Review articles & research publication
6. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
7. Textbook of Medical Physiology by Guyton & Hall

Allied Paper 1

Yoga& Exercise therapy (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The basics of physiotherapy.
2. The basic techniques of exercise therapy.
3. The difference between Yoga & stretching.

Unit I Exercise therapy (12 Hours)

1. Introduction to physiotherapy; What is Exercise Therapy-objective of Exercise Therapy.
2. The techniques of Exercise Therapy.
3. Relaxation of muscles-Postural & Muscle Tone, Degree of relaxation, Voluntary Movement,
4. Pathological tension in muscle, Stress –Types, mechanics, types of stresses, role of stress on body mechanism, Indications of relaxation
5. Physiotherapy techniques of relaxation- Jacobson's, Mitchel's, General, Local, relaxation technique; Active movements & Passive Movements- definition, Types, classification, principles of movements, technique, Indication & contraindication.

Unit II Muscle Performance (12 Hours)

1. Types of muscle fibre, Motor unit & Force gradation.
2. Structure of skeletal muscle.
3. Contraction & relaxation of muscles- chemical & mechanical events
4. Reasons for decreased muscle performance
5. Active Assisted & Resisted Exercises- Definition, Precaution, Types, uses, principles, techniques, indications & contraindications.

Unit III: Neurophysiology Aspect (13 Hours)

1. Neurophysiology of Coordination- Introduction to coordination & Incoordination; Causes & test for coordination; Physiology of cerebellum pathway; Frenkel's Exercise
2. Neurophysiology of Balance – Physiology of Balance; Inputs from sensory, motor output; causes of imbalance, assessment & treatment for impaired balance.
3. Neurophysiology of Locomotion- Regulation of locomotion by different neuronal system.
4. Posture & Spine -Introduction & definition; Types of postures; Methods and techniques of correction.

Unit IV Aerobic Exercise; Suspension Therapy, Stretching & Yoga (12 Hours)

1. Aerobic Exercise- Definition,
2. Physiological response to aerobic exercise,
3. Types & phases of exercise.

4. Suspension Therapy - Definition, principles, Types, Benefits of suspension therapy, equipment used, Indications & contraindications of suspension therapy.
5. Stretching- Definition, technique, precaution, Response of Tissue towards stretching, effects of stretching, Inhibition and relaxation procedures & contraindications.
6. Yoga –Suryanamsakara, Head down postures, Rope technique yoga.

Unit V: Practicals*: (11 hours)

1. Exercise therapy
2. Stretching
3. Balance correction
4. Frenkel's Exercise
5. Posture correction

[* Internal Examinations- Practical exam will be conducted at department level]

Reference books:

1. Principles of exercise therapy by M.Dena Gardiner.
2. Therapeutic exercise by Barbara Bandy
3. Therapeutic exercise by Carolyn Kisner.
4. Principles of Anatomy and Physiology by Gerard J. Tortora, Bryan H. Derrickson
5. Asnana, Pranayama, Banda & Mudra.

CORE PRACTICAL 2:

YOGA PRACTICAL- II (Total:240 Hours)

All Yogic sessions will be started with brief theory of technique of yogic practices, name of the practice, precautionary measures to be taken before, during and after practice of yoga, its benefits, indications, contraindications and its exclusive features. This will enhance the students to learn different techniques of yoga and to master the skills of practicing and teaching skills of yoga.

Unit –I: Prayer:

1. Recital of Pratah-smaran, Shanti Mantras.
2. Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

Unit II: Breathing Practices & Sukshma Vyayama (Loosening exercise)

1. Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique,Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.
2. Sukshma Vyayama: All Joints Rotation: Fingers, Wrist, Elbows, Shoulder rotation, Neck Flexion/ Extension, Neck rotation, Hip rotation, extension and all possible movements, Forward, Backward & Sideward bending, Situps; Standing

posture: Alternate toe touch, sideward stretch; Sitting posture: Alternate toe touch, butterfly movement, sideward bend; Supine posture: Alternate straight leg rise, knee bend movements, leg extension and abduction, Lumbar stretch exercise & its variations.

Unit III: Kriyas (Internal cleansing)

1. Neti : Jala Neti, Sutra Naeti
2. Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
3. Trataka & Agnisara kriya
4. Nauli.

Unit IV: Asanas, Pranayama, Mudras, Bandhas & Shloka chanting:

1. Suryanamaskara (12 Series of asansa), Variations of Suryanamsakara, Chandranamaskara.
2. Standing Series: Padahastāsana , Ardha Chakräsana , Ardhakati Chakräsana, Trikonasana, Parivatra trikonasana, Utkatasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; Sitting Series: Konasana series,Vajräsana, paschimotasnasana Ustrasana, Vakrāsana, Ardha Matsyendräsana; Prone Series: Bhujangasana, Shalabasana, Dhanurasana, Navasana, makarasana; Supine series: Uttitapadasana, setubhandasana,pavanamuktasana.
3. Pranayama with variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama,Ujjai, Sheetali Pranayama, Shitkari Pranayama, Nadi shodhana & Kumbaka
4. Relaxation technique- Shavasana, QRT, IRT, DRT
5. Mudras & Bandhas- All mudras & bandhas as per theory
6. Bhagavat gita & Patanjali yoga sutras- Samadhi pada & Sadhana pada shlokas Vibhuti & Kaivalya pada shlokas.
7. Hatha Yoga – Asanas as per different Hatha Yoga Texts-Classical 84 asanas.

Unit V:Modern Yogic Variations:

1. Rope Yoga & Yoga using Props
2. Different schools of Yoga- Sudharshan Kriya Yoga, Siddhi Samadhi Yoga, ISHA Yoga, Vinyasa Yoga, Iyengar Yoga (Students are encouraged to learn separately-Self Interest).

Unit VI: Advance Technique:

1. Advanced Asanas- Technique, teaching & benefits of Mayurasana, chakrasana, Upavisthakonasana, Rajkopatasana, Hanumanasana, Omkarasana, Natrajasana, Purnabhujangasana, Purnashalabasana, Kurmasana, Matsyendrasana,Purna dhanurasana, Purnaahcakrasana, Kukutasana, Ekapada rajakopatasana, Goraknasana, Bakasana; Siddhasana ,Padmasana ,Guptasana ,Matsyasana , Garuoasana , Yogasana , Hastapadaigunohasana ,Praiavasana , Naukasana , Bhunamanasana , Sarvangasana , Akareadhanurasana Padaigunohasana Brahmacaryasana ,Utthita Padmasana ,Magasana ,Udarakarnasana ,

Tolangulasana Purvottanasana.
2. Kriyas- Nauli: Madhyam Nauli, Vama Nauli, Dakshina Nauli and Nauli Kriya.
3. Advance Meditation – OM meditation; Vipassana meditation; Transcendental meditation, Pranic energising technique, Mind Sound Resonance Technique & Cyclic meditation.

Unit VII: Yoga Record – All Students must maintain Yoga record- Teaching methods, Procedure of asana, Benefits

Reference books:

1. Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
3. Light on Yoga, by B.K.S Iyengar,Harper Collins Publishers.
4. Surya Namaskar by Saraswati, Swami Satyananda, Bihar School of Yoga.

SEMESTER III **Total: 24 Credits**

Sl. no	TYPE OF PAPER	SUBJECTS	Credits
3.1	Core Paper 10	Fundamentals of Neuroscience & Yoga	4
3.2	Allied Paper 2	Biomechanics & Yoga	4
3.3	Core Paper 11	Research Methodology &Statistical Methods	4
3.4	Core Paper 12	Lifestyle Disorders & Yoga Management	4
3.5	Elective Paper 1	Business Management* OR Importance *of Veda	2
3.6	Core Practical 3	Yoga Practical –III	6

Core Paper 10

Fundamentals of Neuroscience & Yoga (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand
1. The Neurological function at molecular level.
2. The Biochemical changes in CNS.
3. The Nervous system & how brain works

Unit I: Anatomy of the Brain: **(10 Hours)**
1. Anatomical sub-divisions of the human brain.
2. Interior structure of cortical regions.
3. Blood supply to brain and the Cerebrospinal Fluid.

4. Neuronal Signalling-The membrane property and ion channels of neurons for electrical signalling, action potential, the role of synapses
5. Neuronal communication & Neurotransmitters

Unit II: Biochemistry of Central Nervous System (10 Hours)

1. Biochemical constituents of Brain.
2. Brain function and importance of Glucose.
3. Metabolic aspects of Central Nervous System.
4. Biochemical aspects of metabolic defects.
5. Neural Transmission-Neurotransmitters, Neuromodulators &Neuropeptides.

Unit IV: Neurobiology of Sensory and Motor Systems (10 Hours)

1. Sensory system –Sensory receptors, neural pathway, relay neurons, Thalamus and cortical processing of different sensations-sensory perception.
2. Motor System -Motor mechanisms of muscle spindle, Thalamus, basal ganglia, brain stem, cerebellum and cerebral cortex; neural connections.
3. Neurobiology of Drives and Motivation: Mechanisms of Aggression, Hunger & Thirst.

Unit V: Regulation of Internal Environment (10 Hours)

1. Role of autonomic nervous system, limbic, and Neuroendocrine system in regulating the internal environment.
2. Reticular formation and neural substrates regulating the state of sleep &wakefulness.
3. State of consciousness/ brain death.

Unit VI: Yoga on Cognitive function (10 Hours)

1. Neurophysiology of Meditation- Study of Scientific evidence of different
2. meditation technique
3. Literature review on Effect of Yoga on cognitive functions.

Reference Books

1. Singh, V. (2004). Textbook of Clinical Neuroanatomy. Elsevier.
2. Shepherd, G.M. (1983). Neurobiology. Oxford University Press.
3. MEDLINE data base- PubMed and others.

Allied Paper 2

Biomechanics & Yoga (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The basics of biomechanics.
2. The Characteristics of Muscles.
3. The Advance technique & Practice.

Unit I: Introduction to Biomechanics (25 hours)

1. What is Biomechanics; Why Biomechanics-Application of Biomechanics.
2. Qualitative and Quantitative Analysis
3. Principles of Biomechanics Applications
4. Kinematics and Kinetics -Motion- Types, Location, Direction & Magnitude; Equilibrium; Force -Definition of Forces- Force of Gravity, Reaction forces, Force component & Pulley.
5. Structure of Joints & Its Functions-Stability, Design, motion, material, function, connective tissue of joints; Active and Passive tension of Muscle.
6. Biomechanics of the vertebral column, Thorax and Chest wall

Unit II: Mechanics of the Musculoskeletal System (20 hours)

1. Tissue loads; Response of tissues to forces; Mechanical stress strain
2. Stiffness and mechanical strength; Viscoelasticity- muscle-tendon unit.
3. Biomechanics of the passive; Biomechanics of bone; Biomechanics of ligaments.
4. Three mechanical characteristics of muscle; Stretch-Shortening Cycle (SSC);force–time principle.
5. Neuromuscular control - Over view-The Functional Unit of Control; Regulation of Muscle Force; Proprioception of Muscle Action and Movement

Unit III: Neurophysiology of Asana & Pranayama. (15 Hours)

1. Scientific evidence of Asana-Article published in index journals
2. Neuron; Upper & Lower motor neurons; Muscle physiology, Motor Units-Vestibular system; Vision and touch.
3. Mechanism of Pranayama; Lung function.
4. Scientific evidence of different Pranayama- Article published in index journals.

Reference books:

1. Joint Structure and Function – A comprehensive Analysis, JP Bros Medical Publishers, New Delhi.
2. Fundamentals of Biomechanics by Duane Knudson.
3. Asana, Pranayama, Mudra, Bandha by Swami Satyananda Saraswati:
4. Hatha Yoga Pradeepika by Swami Muktibodhananda Saraswati
5. MEDLINE data base- PubMed and others.
6. Principles of Anatomy and Physiology by Gerard J. Tortora, Bryan H. Derrickson.

Core Paper 11

Research Methodology & Statistical Methods (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The Ethical issue.
2. The basics of research methodology.
3. The basics of statistics- how to collect the data, use &interpret the data.

Unit I: Bioethics (1 Hours)

1. Human dignity and human rights; Consent; Human vulnerability and personal integrity.
2. Privacy and confidentiality.
3. Equality, justice and equity.
4. Social responsibility and health.

Unit II: Research methodology (8 Hours)

1. Meaning, objective, significance of research.
2. Types of research; research methodology; Criteria for good research.
3. Research problem- Selecting research problem; necessity of defining a problem.
4. Types of research design.

Unit III: Review of related literature (8 Hours)

1. Understanding the role of review of literature.
2. How to begin a search for related literature- Internet, Library reference.
3. Writing research proposal: Characteristics of a proposal; content and organization of a proposal; Applying for funding.
4. Interpretation and case report writing- significance of report writing, layout of research report; types of reports; Presentation of research work- oral, poster and writing research paper; Precautions for writing research report and plagiarism.

Unit IV: Numerical Methods to Represent Variation (8 Hours)

1. Importance and Scope of Statistics,
2. Data Types, Frequency Distribution, Graphical Representation Methods (Histogram, Bar Charts, Pie Charts),
3. Measures of Centre Tendency (Mean, Median, Mode,); Measure of Dispersion (Standard Deviation, Variance)
4. Advantages and Disadvantages, Co-Efficient of Variance.

Unit V: Probability (8 Hours)

1. Basic Terminology, Definition of Probability, Basic Laws of Probability
2. Types of Probability, Additional Rule of Probability and Multiplication
3. Rule of Probability, Probability Distribution-Bernoulli Distribution, Binomial

Distribution and Poisson distribution.
4. Normal Distribution-Simple Problems.

Unit VI: Sampling Methods (8 Hours)

1. Collection of Data, Census Method, Concept of Population.
2. Sample, Sampling, Sample Size, Sampling Error, Advantages and Disadvantages of Sampling Method, Necessity of Sampling.
3. Types of Sampling Methods.
4. Types of Random Sampling Methods – SRS, Stratified Random Sampling, Systematic Random Sampling and Cluster Sampling.

Unit VII: Testing of Hypotheses (8 Hours)

1. Statistical Hypotheses-Null and Alternative,
2. Level of Significance, Type I and Type II Error, Critical Region.
3. Power of the Test, P Value, Degrees of Freedom, Chi- Square Test for Independence of Attributes and Goodness of Fit.
4. Student's t Test- One Sample t Test and Paired t Test, F Test, z – test.
5. Test of significance – Non–Parametric tests: Assumptions; one–sample tests (sign test, McNemar test); two– sample test (Mann Whitney U test, Wilcoxon rank sum test); k –sample tests (Kruskal wallies test, and Friedman test) and chi-square test.

Unit VIII: Regression and Analysis Of Variance (8 Hours)

1. Simple Linear Regression,
2. Multiple Linear Regression (Definition, Assumptions, Applications, and Examples).
3. Analysis of Variance –Introduction, Definition of ANOVA.
4. Test of ANOVA, Types of ANOVA, Construction of One-Way Analysis of Variance. Use of SPSS software.

Unit IX: Yoga &Research (3 Hours)

1. Model Yoga Research Proposal writing.
2. Workshop-Write Review of Literature on different Yoga topics; Application of SPSS software.
3. Brief introduction to funding agencies such CCRYN, DST-SATYAM, DBT, ICMR, CSIR, NITI AYOG and UGC.
4. Patents, Utility Models, Patent filing, different layers of the international patent system, Copyright, Trademark.

Reference Books:

1. Research Methodology: Methods and Techniques by C R Kothari.
2. Practical Research Methods by Dawson, Catherine.
3. Fundamentals of Biostatistics by Veer Bala Rastogi.
4. Fundamentals of Mathematical Statistics, S.C. Gupta and V. K. Kapoor.

5. Fundamentals of Statistics. S.C. Gupta.
6. Introductory Statistics for Biology. R. E. Parker.
7. Statistics for behavioral science by Chintamani Kar.

Core Paper 12

Lifestyle Disorders& Yoga Management (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The basics of common lifestyle disorders.
2. The management of lifestyle disorders through Yoga.
3. The benefits of Yoga.

Unit I: General Introduction to Lifestyle Disorders (5 Hours)

1. Introduction to lifestyle disorder.
2. Introduction to Non-Communicable diseases- definition, types.
3. Definition; Causes of lifestyle disorder.
4. Prevention of Lifestyle Disorder.
5. Management of Lifestyle disorders through modern medicine.
6. Brief Case History recording.

Unit II: Lifestyle Disorders (20 Hours)

1. Endocrine disorders-Obesity & Type 2 Diabetes Mellitus
   - Obesity- Definition, Classifications, Causes, Symptoms and Risk factors; Complications, Introduction to Management through different streams of medicines.
   - Type 2 Diabetes Mellitus- Definition, Classifications, Causes, Symptoms and Risk factors; Complications, Introduction to Management through different streams of medicines.
2. Cardiovascular disorders - Atherosclerosis, Primary Hypertension.
   - Hypertension-Definition, Classifications, Causes, Symptoms, and Risk factors; Complications, Introduction to Management through different streams of medicines.
   - Atherosclerosis- Definition, Classifications, Causes, Symptoms, Risk factors, Complications, Introduction to Management through different streams of medicines.
3. Environmental & Air pollution disorders-COPD,Asthma& Allergic Rhinitis.
   - Chronic obstructive pulmonary disease (COPD) -Definition, Classifications, Causes, Symptoms, and Risk factors; Complications, Introduction to Management through different streams of medicines.
   - Asthma - Definition, Classifications, Causes, Symptoms, and Risk factors; Complications, Difference between COPD and Asthma; Introduction to Management through different streams of medicines.

- Allergic Rhinitis- Definition, Classifications, Causes, Symptoms, and Risk factors; Complications, Difference between COPD and Asthma; Introduction to Management through different streams of medicines.

Unit III: Management of Lifestyle Disorders through Yoga (10 Hours)

1. Introduction to Yoga therapy and Yoga concept
2. Pathophysiology of above-mentioned Lifestyle disorder
3. Yoga Management- Introduction, Precautions, Limitations, Yoga Ethics, know when to refer to Doctors.
4. Mechanism of Yoga in management of Lifestyle disorders.

Unit IV: Yoga for Lifestyle Disorders (25 Hours)

1. Yoga module for Obesity- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
2. Yoga module for Atherosclerosis- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
3. Yoga module for Primary Hypertension- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
4. Yoga module for COPD- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
5. Yoga module for Asthma- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
6. Yoga module for Allergic Rhinitis- Unified Yoga technique: Kriyas,Asana,Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.

Reference books:

1. Macleod’s Clinical Diagnosis.
2. Oxfords’s Clinical Diagnosis.
3. Asana, Pranayama, Mudra, Bandha by Swami Satyananda Saraswati.
4. Yoga for common ailments and IAYT for different diseases by Dr R Nagarathna & Dr H R Nagendra, Swami Vivekananda Yoga Prakashana.

Elective Paper 1
(Anyone)

Business Management (Theory: 48 Hours)

Course Outcome: End of the course, students should be able to understand

1. The various skills, knowledge required for Entrepreneurship activities.
2. The Principles of management.
3. The Different marketing strategy.
4. The Financial management.
5. The Budget planning.

Unit I: Management Principles & Practice (7 Hours)

1. Introduction to Management &Management function & tools: Management levels & skills, Functions & Principles of management, Challenges to manager.
2. Entrepreneurship – Start-ups and innovations, Creating business ideas; Entrepreneur Development Programmes workshop (EDPs)* [Along with MBA Students].
3. Planning & Forecasting- Types, Steps, Process of Forecasting.
4. Organizing: Nature of organizing - formal and informal organizations- Structure and departmentation - line and staff, functional.
5. Coordinating: Need for coordination principles, Techniques of coordination.
6. Controlling: Process of control for diverse organizations; Setting standard for performance.

Unit II: Managerial Communication (6 Hours)

1. Communication skills- definition, process, methods & importance.
2. Effective communication (7Cs).
3. Theories, models of communication,
4. Barriers to communication.
5. Types of communication- verbal and nonverbal communication.

Unit III: Marketing Management (7 Hours)

1. Introduction- Marketing and Marketing Management, importance, valueand scope of marketing.
2. Core marketing concepts – Needs, Wants, and Demands, Target markets, Positioning, Segmentation, Marketing orientations, marketing mix.
3. Brand - Meaning, importance, and building and managing the brands
4. Advertisement– Setting advertising objectives, setting the advertising budget, evaluating advertising effectiveness and the return on advertising investment; Public relation- Tools & importance; Introduction to Services marketing & Service quality.

Unit IV: Human Resource Management (6 Hours)

1. Nature, Scope, objectives, Importance, Strategic HRM,
2. Functions of HRM,
3. Principles of HRM,
4. Differences between HRM and Personnel Management,
5. Trends in Workforce, managing diversity, challenges in managing a diverse workforce.

Unit V: Total Quality Management (6 Hours)

1. Quality – Definition of Quality; Basic concepts of Total Quality Management
2. Purchasing activities.
3. Inventory control: meaning, scope & definition, Aims and Objectives of Inventory Control, Classification of Inventory, Functions of Inventory Control and Criteria of Inventory Control, Inventory control techniques, stock verification& Logistic Management-Definition, goals, objectives, principles & function.
4. Accreditation for Yoga Institutes.

Unit VI: Financial Management (8 Hours)

1. Introduction to financial management -Objectives of financial management,
2. Function of financial management, financial planning concept and roles of financial management in organization.
3. Cost accounting - Introduction to cost accounting, objectives, importance of costing, difference between cost and financial accounting, types of cost, types of costing system, preparation of cost sheet and allocation and Apportionment problems.
4. Budget - Concept of Budget, Budgeting and Budgetary Control, Types of Budgets and their preparation and Advantages and Limitations of Budgetary Control.
5. Preparation of Flexible budgets; Introduction to Income tax.

Unit VII: Strategic Management & Management Information Systems (5 Hours)

1. Basic concepts of strategic management, Competitive Analysis & Internal Analysis.
2. Strategy Formulation - Developing Alternative Strategies: Strategic Alternatives, Ansoff's Matrix/ Market grid.
3. Strategic Analysis: Portfolio analysis – BCG Portfolio Matrix, GE Multifactor Portfolio Matrix.
4. Strategy Implementation: Nature of Strategy Implementation, Linkages between Formulation and Implementation. Importance of strategy Implementation, Mc Kinsey's 7-S Model, Major Issues in Strategy Implementation.
5. Strategic leadership – Analysing leadership, Role of strategic leader, leaders' tasks, leadership approaches and Competitive advantage.

Unit VIII: Management Information Systems (3 Hours)

1. Information system – Definition & Fundamentals of information system, Uses of information systems,
2. Role of Information & Communication Technology (ICT) tools in health & Fitness; Digital Marketing,

Reference Books:

1. Principles of Management by Koontz and O'Donnel, New York; Mc. Graw Hill Company.
2. Marketing Management by Philip Kotler,Latest edition.
3. Marketing Management by Chabra T.N, Tata McGraw Hill.
4. Fundamentals of FM by Brigham and Houston.
5. Foundation of the Business Communication' by Dona. J. young-Tata McGraw Hill.
6. Business Communication by Meenakshi, Raman Prakash Singh.
7. Human Resource Management by Aswathappa.K.
8. Total Quality Management by Feigenbaum. A.V
9. Cost and Financial Accounting byKhan and Jain.
10. Management Policy and Strategic Management by R.M.Shrivastava
11. Managing the Digital Firm by Kenneth, Laudon, Jane Laudon MIS.
12. Management Information Systems by Jawadekar, W. S. Tata McGraw Hill.
13. Creativity and Innovation by Couger C.

Note: *Extra credit will be allotted for workshop under extra curriculum activities.

Elective paper 1

Importance of Veda (Theory: 40 Hours)

Course Outcome: End of the course, students should be able to understand

1. The importance of Veda.
2. The concept of Yoga according to veda.

Unit I Introduction to Veda& Rig Veda (10 Hours)
Unit II Sama Veda (10 Hours)
Unit III Yajur Veda (10 Hours)
Unit IV Atharva Veda (10 Hours)

Reference books

1. The Vedas, Bhavan's Publication.
2. The secret of Veda by Sri Aurobindo.

CORE PRACTICAL 3

YOGA PRACTICAL- III (Total:240 Hours)

All Yogic sessions will be started with brief theory of technique of yogic practices, name of the practice, precautionary measures to be taken before, during and after practice of yoga, its benefits, indications, contraindications and its exclusive features. This will enhance the students to learn different techniques of yoga and to master the skills of practicing and teaching skills of yoga.

Unit –I: Prayer:

1. Recital of Pratah-smaran, Shanti Mantras.
2. Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

Unit II: Breathing Practices & Sukshma Vyayama (Loosening exercise)

1. Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique,Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.
2. Sukshma Vyayama: All Joints Rotation: Fingers, Wrist, Elbows, Shoulder rotation, Neck Flexion/ Extension, Neck rotation, Hip rotation, extension and all possible movements, Forward, Backward & Sideward bending, Situps; Standing posture: Alternate toe touch, sideward stretch; Sitting posture: Alternate toe touch, butterfly movement, sideward bend; Supine posture: Alternate straight leg rise, knee bend movements, leg extension and abduction, Lumbar stretch exercise & its variations.

Unit III: Kriyas (Internal cleansing)

1. Neti : Jala Neti, Sutra Naeti
2. Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
3. Trataka& Agnisara kriya
4. Nauli.

Unit IV: Asanas, Pranayama, Mudras, Bandhas & Shloka chanting:

1. Suryanamaskara(12 Series of asansa), Variations of Suryanamsakara, Chandranamaskara.
2. Standing Series: Padahastāsana , Ardha Chakräsana , Ardhakati Chakräsana, Trikonasana, Parivatra trikonasana, Utkatasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; Sitting Series: Konasana series,Vajräsana, paschimotasnasana Ustrasana, Vakrāsana, Ardha Matsyendräsana; Prone Series: Bhujangasana, Shalabasana, Dhanurasana, Navasana, makarasana; Supine series: Uttitapadasana, setubhandasana,pavanamuktasana.
3. Pranayamawith variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama,Ujjai, Sheetali Pranayama, Shitkari Pranayama, Nadi shodhana & Kumbaka

4. Relaxation technique- Shavasana, QRT, IRT, DRT
5. Mudras& Bandhas- All mudras & bandhas as per theory
6. Hatha Yoga – Asanas as per different Hatha Yoga Texts-Classical 84 asanas.

Unit V:Yoga module for Lifestyle disorder: Specialized techniques.

1. Yoga module for Obesity- Unified Yoga technique: Kriyas, Asana, Pranayama, Meditation,OM Chanting & Specialized Yoga techniques.
2. Yoga module for Atherosclerosis- Unified Yoga technique: Kriyas, Asana, Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
3. Yoga module for Primary Hypertension- Unified Yoga technique: Kriyas, Asana, Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.
4. Yoga module for COPD- Unified Yoga technique: Kriyas, Asana, Pranayama, Meditation,OM Chanting & Specialized Yoga techniques.
5. Yoga module for Asthma- Unified Yoga technique: Kriyas, Asana, Pranayama, Meditation,OM Chanting & Specialized Yoga techniques.
6. Yoga module for Allergic Rhinitis- Unified Yoga technique: Kriyas, Asana, Pranayama,Meditation,OM Chanting & Specialized Yoga techniques.

Reference books:

1. Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
3. Light on Yoga, by B.K.S Iyengar,Harper Collins Publishers.
4. Surya Namaskar by Saraswati, Swami Satyananda, Bihar School of Yoga.

SEMESTER IV **Total: 16 Credits**

Sl.no	TYPE OF PAPER	SUBJECTS	Credits
1	Core Paper 13	Yoga & Psychology	4
2	Project Work 1	Workshop, Research proposal writing, Seminars & Journal Club	1
3	Project work 2	1. Dissertation on Yoga 2. Yoga Posting	11

Core Paper 13

Yoga & Psychology (Theory: 60 Hours)

Course Outcome: End of the course, students should be able to understand

1. The various models of modern psychology.
2. The importance of positive psychology.
3. The concept of community & social behaviour.
4. The correlation of yoga concept with modern psychology.

Unit I: Concept of Modern Psychology: (15 Hours)

1. Introduction and Methods of Modern Psychology: Modern psychology- Definition; Different Schools of thought in psychology- Social, Biological, Structuralism, functionalism, Psychoanalysis & behaviourism.
2. State of Consciousness & Personality: Thinking– Concept; Reasoning; Problem Solving-Definition & Methods; Motivation-Definition, Theories of Motivation, Psychological Motives-Conflict & Frustration; Personality- Definition, Different Psychoanalytic Approach theories; Learning approach To Personality.
3. Learning Memory and Forgetting: Learning- Definition; Classical Conditioning; Basic Principles; Operant Conditioning; Reinforcement; Basic Principles-Learned Helpless, Observation Learning, Insight Learning; Memory: Definition; Models-Sensory Memory, Short term memory, Long Term Memory; Forgetting: Definition, Causes; Decay Hypothesis; Inference; Retrieval Failure; Disorder of Memory-Dementia &Amnesia; Memory and the brain. Methods of Improving Memory.

Unit II: Concept of Positive Psychology: (15 Hours)

1. Postive psychology- Introduction, Definition, goals & assumptions; Happiness: The Meaning and Measure of Happiness: self–realization, comparing hedonic and Eudaimonic views of happiness. Positive Emotions- manage positive emotions, Positive Traits, personality, positive view, Self-efficacy.
2. Personal Goals for Well–Being; Self –regulation and self –control; contribution of goal for well–being & goal failure.

3. Relationship: How to improve closeness, compassion, love, empathy, selflessness, forgiveness and gratitude.

Unit III: Concept of Social &community psychology (15 Hours)

1. Social psychology: definition; nature-individual behaviour; causes of social behaviour; social psychology in the new millennium.
2. Attitudes and behaviour: attitudes formation; influence of attitude on behaviour; measurement of attitude; social earning; social identity; persuasion & resistance to persuasion; cognitive dissonance; self-serving; bias-gender stereotypes; gender role behaviour.
3. Group dynamics: definition of group- formation of group-functions of group-social facilitation-social loafing. Group decision making, leadership-style-characteristics.
4. Prejudice: Definition; origin, sources of prejudice; psychosocial-cognitive techniques of countering the effects of prejudice; interpersonal attraction; interdependent relationship; loneliness.
5. Community psychology: Theory of community psychology; definition and context with reference to social action & mental health. Individual wellness, feel of community, psychological feel of community & social justice

Unit IV: Yogic Psychology (5 Hours)

1. Bhagavad gita: Application of principles of Bhagavat gita in individual life about-Detachment, Bhakti, and selfless action.
2. State of Consciousness in Yogic scriptures and their applicability Swapna-State of consciousness; Jagrita – State of Wakefull consciousness Sushupti - Deep sleep; Turiya –Pure consciousness; Chandokya Upanishad.
3. Yoga for Positive wellbeing: Yoga books- Inner awareness, Bhajans, Group Yoga, Yoga Nidra, Meditation techniques, Yogic counselling.

Unit V: Yogic View of Mental Health (10 Hours)

1. Mental health explained in Yogic texts-PYS, B.G, Taiteriya Upanishad
2. Scientific evidence on mental health and yoga.
3. Seminars & Journal Club on Role of Yoga on mental health.

Reference:

1. Psychology by Baron.A.R, Pearson Education.
2. Psychology Essentials by Santrock J.W, Tata McGraw Hill publication.
3. Social psychology by Myers D.G, Tata MC-Graw Hill publishing.
4. Social psychology by Baron. B.A & Byrne,D.
5. Introduction to Psychology. Tata McGraw hill.
6. Hatha Yoga Pradeepika by Swami Muktibodhananda.
7. Prana, Pranayama & Pranavidya by Swami Niranjanananda.
8. The Holy Gita, Swami Chinmayananda, Chinmaya Mission
9. Yoga Health by Dr H R Nagendra & Dr R Nagarathna.

Project Work- 1 (16 Hours)

Workshop, Research proposal writing, Seminars & Journal Club*

The Seminar &Journal club will bring light on recent research advances in Yoga literature and help PG graduates to improve their skills in writing abstracts, presentations, and thinking critically. Students will be assigned a Yoga research topic to them and will be asked to write a research proposal & abstract and present as mock seminar &respond to query from faculties &fellow students. Additionally, students are encouraged to register on online for SWAYAM, NPTEL and other online educational resources to gain knowledge.

Project work 2 (419 Hours)

Dissertation on Yoga &Yoga Posting

1. **Dissertation on Yoga:**
Students will be assigned a new topic to them and will be asked to write an abstract on research proposal &present to the faculty. After finalising the "Title" of the dissertation, necessary approval must be taken from the Department of Yoga. Dissertation work must be completed as per JSS AHER rules before the stipulated time and must submit the dissertation copies duly signed by faculty & HOD to examination section. Students must comply to all rules & regulation of JSS AHER.
2. **Yoga Posting:**
Students will be posted to different schools & colleges for conducting Yoga sessions (Subject to availability)
3. **General Yoga Practical:** Students must attend compulsory daily Yoga sessions.

Regulations & Syllabus

DEPARTMENT OF YOGA
CERTIFICATE PROGRAMME

BRIDGE COURSE FOR M.SC. YOGA

YOGA TEACHER COURSE (YTC) - LEVEL 2

2020

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY) MYSURU

JSS Academy of Higher Education & Research
(Deemed to be University)
Accredited "A+" Grade by NAAC
Sri Shivarathreeshwara Nagar, Mysuru – 570 015

REGULATIONS

Eligibility:

- Only for M.Sc. Yoga Candidates from other than B.Sc (Yoga) degreeOther degree* - B.Sc. in Science (Any Stream) / BPT/ Medicine/ Dental/ BAMS/ BHMS/ BUMS.
- b. *Candidates other than B.Sc. (Yoga) degree & BNYS degree should enroll for Compulsory Bridge Course- Yoga Teachers Course (Level 2) (Certificate Programme) + Language (Sanskrit) course.

Duration: 3 months

Total Hours: 120

Structure: Credit based – 10 credits

Attendance:

- Minimum 75% of the full attendance for the course shall be permitted to take the examination.
- Department Examination: Theory Examination: Total marks- 150; Duration- 4 Hours
- Paper 1: Language- Sanskrit- Maximum marks-50; Duration-1 Hour
- Paper 2: Principles of Yoga - Maximum marks-100; Duration-3 Hours

Certificate Distribution:

Certificate will be distributed by the Department of Yoga for successful candidates.

Syllabus

Yoga Teacher Course(YTC) Level 2

Paper 1: Language : Sanskrit - Credit: 2 (Total : 24 Hours)

Assessment marks – Total 50

1. Unit I: Introduction and History of sanskrit, Maheshwara sutras, Sanskrit alphabets (Varnamaala) .
2. Unit II: Swaras, vyanjanas, Numbers in Sanskrit (1 to 100). Karakas, Karaka vibhakti, pratyaya, Introduction to gender, tense.
3. Unit III: Lat, Lot, Lrut, Lung lakaaras and their vibhaktis, DhatusConjunctions (Sandhis) and their usage. Compound words (Samasas) and their usage.
4. Unit IV: Sentence formation and conversation in Sanskrit.

Reference:

1. Dhaturoopavali : Pub. Gurukul Kangari University, Haridwar
2. Dwivedi, Kapil Dev : RachananuvadKaumudi (Vol. I, II & III)
3. Kalidasa : Raghuvanshamkavayam, M.L.B.D. Pub., New Delhi
4. ShabdaRupavali : Pub. Gurukul Kangari University, Haridwar

Paper 2: Principles of Yoga - Credits-8 (Total : 96 Hours)
Assessment marks – Total 100
Unit I: History & Origin of Yoga:

1. Introduction to Yoga,
2. Evolution of Yoga- Hindu mythological concept about yoga origin, Pre-vedic, Vedic period, and in modern view about yoga.
3. Definitions of Yoga, Objectives of Yoga, Importance of yoga and Misconceptions about Yoga.

Unit II: History of different Philosophy

1. Definitions and salient features of Indian philosophy, Classification of IndianPhilosophy, Vedanta philosophy; Co-Relationship between Indian Philosophy and Yoga.
2. IntroductiontoBuddhism:InroductiontoBuddhism,Skandha-vada,ConceptofFour noble Truths, Noble-eight-fold-path. Introduction to Jainism, Chinese philosophy (yin&Yang),IntroductiontoSufism:MeaningandCharacteristicfeaturesofSufism.

Unit III: Introduction & Inputs of Eminent Yogis

1. Wisdom of yoga by Ramakrishna and Swami Vivekananda, Maharishi Raman, Shri Aurobindo
2. Contribution towards promotion of yoga by Swami Satyananda Saraswati, Swami Dhirendra Bhramhachari and Yogacharya B.K.S. Iyengar, Maharsi Mahesh, Sri

Yogendraji, Swami Kuvalyananda.

Unit IV: Yoga according to various texts:

1. Yogic perspective by Bhagavad Gita, Yoga Vasishtha, Narada Bhakti Sutras,
2. Yoga in different epic books like Ramayana, Mahabharatha& Yoga in Ayurveda.

Unit V: Introduction to Patanjali & Yoga Sutra

1. Purpose and Definition of yoga according to Patanjali, Introduction to founder-Patanjali.
2. Ishwara pranidhana- Quality & concept.

Unit VI: Introduction & origin of hatha yoga

1. Prerequisites for Hatha Yoga; Purpose of hatha Yoga; State of raja yoga and hatha yoga; Origin, Meaning, Definition, Aim, Objectives and Misconceptions of Hatha Yoga.
2. Sadhana- cause, failure, place of practise, practice of sadhana, perfection of sadhana; Three type of pain or Tapa; & Introduction & contribution of hatha yogis Matsyendranath & gorakhnath; Mahasiddhas – their role in yoga

Unit VII: Introduction to Upanishads

1. Definition: Classification of Upanishads- Major and Minor Upanishads.
2. Four Maahaavaakyas; Introduction to Major and Minor upanishads.

Unit VIII Introduction of Bhagavat Gita & Yoga Education

1. Introduction to Bhagavad gita and Definition of Yoga according to Bhagavat gita.
2. Yoga & Education General introduction to Physical Education and Sports; Difference between yoga and Exercise; Yoga for sports individual; Application of Yoga for School children, Improving Cognitive functions for School children.