

JSS Academy of Higher Education & Research

(Deemed to be University)

Accredited "A+" Grade by NAAC

Sri Shivarathreeshwara Nagar, Mysuru – 570 015

Faculty of Yoga

Regulations & Syllabus

BSc Yoga
2020

BSc

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Preamble

The Department of Yoga under JSS 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. This pattern provides choice for students to select from the prescribed courses (core, elective, allied & soft skills). 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 yoga department is to promote excellence amongst our undergraduate and postgraduate staff and students through responsive teaching, research and supervision, scholarship and instructional pastoral support.

The main objective of the courses offered at Yoga department is interdisciplinary in nature that enables overall 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.

UNDERGRADUATE PROGRAMME REGULATIONS

1. Title and Commencement

These regulations shall be called as "The Regulations for the BSc 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 10+2 examination conducted by the respective state/ central government authorities recognized as equivalent to 10+2 examination with English as one of the subjects and Physics, Chemistry, Mathematics (P.C.M) and Biology (P.C.B / P.C.M.B.) OR 10+2 (Arts or Commerce) examination passed with certificate of Diploma in Science.

3. Duration of the program

The course of study for BSc Yoga shall be minimum period of six semesters (three academic years) and maximum period of 12 semesters (6 academic years) for completion of a BSc 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 BSc Yoga degree by JSS AHER, Mysore is 140. 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 VII. 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 BSc Yoga shall include Semester wise Theory & Practical as given in Table – I to VI. 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 VI.

Table – I: Course of study for Semester I

| Sl. No. | Study Components | Paper | No. of Hours/ week | Credit points |
|----------------|-------------------------|---|---------------------------|----------------------|
| 1.1 | Language 1 | Sanskrit* | 2 | 2 |
| 1.2 | Language 2 | English* | 3 | 3 |
| 1.3 | Core 1 | Biology of Human Body (Basics of Anatomy & Physiology)-Part I | 4 | 4 |
| 1.4 | Core 2 | Principles of Yoga -Part 1 | 4 | 4 |
| 1.5 | Skill Based 1 | Basics of Computers* | 3 | 3 |
| 1.6 | Core Practical 1 | Yoga Practical- I | 10 | 5 |
| | Total | | 28 Hours | 21 |

* Non-University Examinations (NUE)

Table – II: Course of study for Semester II

| Sl. No. | Study Components | Paper | No. of Hours/ week | Credit points |
|----------------|-------------------------|---|---------------------------|----------------------|
| 2.1 | Core 3 | Principles of Yoga - Part 2 | 4 | 4 |
| 2.2 | Core 4 | Patanjali Yoga Sutras- Part 1 | 4 | 4 |
| 2.3 | Core 5 | Biology of Human Body– (Basics of Anatomy & Physiology) – Part II | 4 | 4 |
| 2.4 | Allied Paper 1 | Basics of Biostatistics* | 3 | 3 |
| 2.5 | Allied Practical 1 | Basics of Biostatistics Practical* | 2 | 1 |
| 2.6 | Compulsory paper | Environmental Studies* | 2 | 2 |
| 2.7 | Core Practical 2 | Yoga Practical- II | 12 | 6 |
| | Total | | 30 Hours | 24 |

* Non-University Examinations (NUE)

Table – III: Course of study for Semester III

| Sl. No. | Study Components | Paper | No. of Hours/ week | Total Credit points |
|----------------|-------------------------|--|---------------------------|----------------------------|
| 3.1 | Core 6 | Introduction to Upanishads & Relevance to Yoga | 4 | 4 |
| 3.2 | Core 7 | Hatha Yoga - Part 1 | 4 | 4 |
| 3.3 | Core 8 | Patanjali Yoga Sutras - Part 2 | 4 | 4 |
| 3.4 | Allied Paper 2 | Basics of Biochemistry | 3 | 3 |
| 3.5 | Allied Practical 2 | Basics of Biochemistry Practical | 2 | 1 |
| 3.6 | Allied Paper 3 | Personality Development by Bhagavad Gita | 3 | 3 |
| 3.7 | Core Practical 3 | Yoga Practical- III | 12 | 6 |
| | Total | | 32 Hours | 25 |

Table – IV: Course of study for Semester IV

| Sl. No. | Study Components | Paper | No. of Hours/ week | Total Credit points |
|----------------|-------------------------|--|---------------------------|----------------------------|
| 4.1 | Core 9 | Hatha Yoga -Part 2 | 4 | 4 |
| 4.2 | Core 10 | Yogic Psychology | 4 | 4 |
| 4.3 | Allied Paper 4 | Introduction to Physiotherapy & Exercise Therapy | 3 | 3 |
| 4.4 | Allied paper 5 | Yoga and Mental Health | 3 | 3 |
| 4.5 | Allied paper 6 | Rehabilitation Psychology | 3 | 3 |
| 4.6 | Core Practical 4 | Yoga Practical - IV | 12 | 6 |
| | Total | | 29 Hours | 23 |

Table – V: Course of study for Semester V

| Sl. No. | Study Components | Paper | No. of Hours/ week | Total Credit points |
|----------------|-------------------------|---------------------------------|---------------------------|----------------------------|
| 5.1 | Core 11 | Yoga and Consciousness | 4 | 4 |
| 5.2 | Core 12 | Application of Yoga for Society | 4 | 4 |
| 5.3 | Skilled based 2 | Environmental Psychology | 3 | 3 |
| 5.4 | Allied paper 7 | Yoga & Oncology | 3 | 3 |
| 5.5 | Allied paper 8 | Modern Psychology | 3 | 3 |
| 5.6 | Core Practical 5 | Yoga Practical- V | 12 | 6 |
| | Total | | 29 Hours | 23 |

Table – VI: Course of study for Semester VI

| Sl. No. | Study Components | Paper | No. of Hours/ week | Total Credit points |
|----------------|----------------------------------|---|---------------------------|----------------------------|
| 6.1 | Core 13 | Research Methodology | 4 | 4 |
| 6.2 | Core 14 | Physiology of Yoga | 4 | 4 |
| 6.3 | Core 15 | Nutrition & Dietetics and Concept of Yogic diet | 4 | 4 |
| 6.4 | Allied Paper 9 | Nutrition and Sports & Fitness | 3 | 3 |
| 6.5 | Elective Paper 1 (Choose Anyone) | Importance of Veda OR Introduction to AYUSH | 3 | 3 |
| 6.6 | Core Practical 6 | Yoga Practical- VI | 12 | 6 |
| | Total | | 30 Hours | 24 |

Table – VII: Semester wise credits distribution

| Sl. No. | Semester | Credit Points |
|----------------|---|----------------------|
| 1 | First | 21 |
| 2 | Second | 24 |
| 3 | Third | 25 |
| 4 | Fourth | 23 |
| 5 | Fifth | 23 |
| 6 | Sixth | 24 |
| 7 | Extracurricular/ Co-curricular activities: Presenting at National/International Conferences, Yoga competition participation etc. | 02* |
| | Total | 140 |

* 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 Examinations. The criteria to acquire this credit point shall be defined by the Dean & HOD from time to time.

13. Program Committee

13.1 The BSc 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 BSc 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:

- i. Periodically reviewing the progress of the classes.
- ii. Discussing the matters concerning curriculum, syllabus and the conduct of classes.
- iii. 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.
- iv. Communicating its recommendation to the Head of the department on academic matters.
- v. 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 -VIII.

14.1 End semester examinations

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

Tables VIII: 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 | Language 1 | Sanskrit* | 05 | 15 | 1 | 20 | 30 | 1.5 | 50 |
| 1.2 | Language 2 | English* | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 1.3 | Core 1 | Biology of Human Body (Basics of Anatomy & Physiology) -Part I | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 1.4 | Core 2 | Principles of Yoga -Part 1 | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 1.5 | Skill based 1 | Basics of Computer* | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 1.6 | Core Practical 1 | Yoga Practical- I | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| | | Total | | | | | | | 550 |

* The subject experts at the Department level shall conduct examinations

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 3 | Principles of Yoga - Part 2 | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 2.2 | Core 4 | Patanjali Yoga Sutras- Part 1 | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 2.3 | Core 5 | Biology of Human Body (Basics of Anatomy & Physiology) – Part II | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 2.4 | Allied Paper 1 | Basics of Biostatistics* | 10 | 15 | 1 | 25 | 50 | 1.5 | 75 | |
| 2.5 | Allied Practical 1 | Basics of Biostatistics- Practical* | | 05 | 0.5 | 05 | 20 | 1 | 25 | |
| 2.6 | Compulsory Paper | Environmental Studies* | 05 | 15 | 1 | 20 | 30 | 3 | 50 | |
| 2.7 | Core Practical 2 | Yoga Practical- II | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| | | Total | | | | | | | 550 | |

* The subject experts at the Department level shall conduct examinations

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 6 | Introduction to Upanishads & Relevance to Yoga | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 3.2 | Core 7 | Hatha Yoga- Part 1 | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 3.3 | Core 8 | Patanjali Yoga Sutras-Part 2 | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 3.4 | Allied Paper 2 | Personality Development by Bhagavad Gita | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 3.5 | Allied Paper 3 | Basics of Biochemistry | 10 | 15 | 1 | 25 | 50 | 1.5 | 75 | |
| 3.6 | Allied Practical 3 | Basics of Biochemistry Practical | | 05 | 1 | 05 | 20 | 1 | 25 | |
| 3.7 | Core Practical 3 | Yoga Practical- III | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| | | Total | | | | | | | 600 | |

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 9 | Hatha Yoga - Part 2 | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 4.2 | Core 10 | Yogic Psychology | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 4.3 | Allied Paper 4 | Introduction to Physiotherapy & Exercise Therapy | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 4.4 | Allied Paper 5 | Yoga and Mental Health | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 4.5 | Allied Paper 6 | Rehabilitation Psychology | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 4.6 | Core Practical 4 | Yoga Practical- IV | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| | | Total | | | | | | | 600 |

Semester 5

| Part | Study Components | Paper | Internal Assessment | | | | End Semester Exams | | | Total Marks |
|------|------------------|---------------------------------|---------------------|-----------------|---------------|-------|--------------------|---------------|-----|-------------|
| | | | Continuous Mode | Sessional Exams | | Total | Marks | Duration (Hr) | | |
| | | | | Marks | Duration (Hr) | | | | | |
| 5.1 | Core 11 | Yoga and Consciousness | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 5.2 | Core 12 | Application of Yoga for Society | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 5.3 | Skilled based 2 | Environmental Psychology | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 5.4 | Allied paper 7 | Yoga & Oncology | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 5.5 | Allied paper 8 | Modern Psychology | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| 5.6 | Core Practical 5 | Yoga Practical- V | 10 | 15 | 1 | 25 | 75 | 3 | 100 | |
| | | Total | | | | | | | 600 | |

Semester 6

| Part | Study Components | Paper | Internal Assessment | | | | End Semester Exams | | Total Marks |
|------|----------------------------------|---|---------------------|-----------------|---------------|-------|--------------------|---------------|-------------|
| | | | Continuous Mode | Sessional Exams | | Total | Marks | Duration (Hr) | |
| | | | | Marks | Duration (Hr) | | | | |
| 6.1 | Core 13 | Research Methodology | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 6.2 | Core 14 | Physiology of Yoga | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 6.3 | Core 15 | Nutrition & Dietetics and Concept of Yogic diet | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 6.4 | Allied paper 9 | Nutrition and Sports & Fitness | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 6.5 | Elective paper 1 (Choose Anyone) | Importance of Veda OR Introduction to AYUSH | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| 6.6 | Core Practical 6 | Yoga Practical- VI | 10 | 15 | 1 | 25 | 75 | 3 | 100 |
| | | Total | | | | | | | 600 |
| | | Grand Total | | | | | | | 3500 |

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 (one). The marks allocated for Continuous mode of Internal Assessment shall be awarded as per the scheme given below.

Table VIII:

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

| 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 |

(b) Details of Sessional Assessment / Internal Assessment for 20 Marks

| Examinations | Assessment | Marks |
|---------------------|--|--------------|
| Test | Average of best two test performances | 10 |
| Assignment | Average of the two submitted | 04 |
| Seminar | Average of two Presentations on given topics | 04 |
| Attendance | Refer Table -IX | 02 |

Table- IX: 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 –VIII.

Sessional exam shall be conducted for 30 marks for both theory and Practical and shall be computed for 15 marks except for Biostatistics and Biochemistry practical where the Sessional exam shall be conducted for 20 marks and shall be computed for 5 marks each.

Question paper pattern for Theory Sessional examinations:

| Time: 1 Hours | Maximum Marks:30 |
|--|------------------|
| • Long Essay (Answer any one out of 2 questions) | 1 x 10= 10 |
| • Short Essay (Answer any two out of 3 questions) | 2 x 5 = 10 |
| • Short Answers (Answer all 5 questions) | 5 x 2= 10 |

Question paper pattern for practical sessional examinations:

| Time: 1 Hours | Maximum Marks:30 |
|------------------------|------------------|
| • Kriya Yoga practical | 05 |
| • Yoga Practical | 20 |
| • Viva voce | 05 |

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) |

End semester Question Paper Pattern

| Time: 2 Hours | Maximum Marks:50 |
|---|--------------------|
| PART A: Long Essay Answer any THREE out of four questions All questions carry equal marks | (3 X10 = 30 Marks) |
| PART B: Short Essay Answer any TWO out of three questions All questions carry equal marks | (2 X 5= 10 marks) |

| | |
|--|-------------------|
| PART C: Short Answer Answer ALL questions All questions carry equal mark | (5 X 2= 10 marks) |
|--|-------------------|

End semester Question Paper Pattern

| | |
|---|-------------------------|
| Time: 1 Hour | Maximum Marks:30 |
| PART A: Long Essay Answer any ONE out of Two questions All questions carry equal marks | (1X 10=10 Marks) |
| PART B: Short Essay Answer any TWO out of Three questions All questions carry equal marks | (2 X 5=10 marks) |
| PART C: Short Answer Answer ALL questions choosing All questions carry equal mark | (5 X 2 = 10 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 X. The exact dates of examinations shall be notified from time to time.

Table – X: Tentative schedule of end semester examinations:

| Semester | Exam Schedule |
|---------------------|----------------------|
| I, III, V and VII | November / December |
| II, IV, VI and VIII | 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. 6 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 VI semesters within the stipulated time period as per the norms specified in para 16 (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 – XI.

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

| Percentage of Marks Obtained | Letter Grade | Grade Point | Performance |
|-------------------------------------|---------------------|--------------------|--------------------|
| 90.00 – 100 | O | 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:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4G_4 + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

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:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4 * \text{ZERO} + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

22. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the VIII semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all VIII 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:

$$\text{CGPA} = \frac{C_1S_1 + C_2S_2 + C_3S_3 + C_4S_4 + C_5S_5 + C_6S_6 + C_7S_7 + C_8S_8}{C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8}$$

where C_1, C_2, C_3, \dots is the total number of credits for semester I, II, III, and S_1, S_2, S_3, \dots 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 |
| Pass Class | = CGPA of 5.00 to 5.99 |

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 BSc Yoga program shall not be eligible for award of ranks. Moreover, the candidates should have completed the BSc Yoga program in minimum prescribed number of years, (Three 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 BSc Yoga Program curriculum

| Sl.no | TYPE OF PAPER | SUBJECTS |
|---------------------|--------------------------|--|
| SEMESTER I | | |
| 1.1 | Language 1 | Sanskrit* |
| 1.2 | Language 2 | English* |
| 1.3 | Core 1 | Biology of Human Body– Basics of Anatomy & Physiology (Part I) |
| 1.4 | Core 2 | Principles of Yoga -Part 1 |
| 1.5 | Skill based 1 | Basics of Computer* |
| 1.6 | Core Practical 1 | Yoga Practical- I |
| SEMESTER II | | |
| 2.1 | Core 3 | Principles of Yoga - Part 2 |
| 2.2 | Core 4 | Patanjali Yoga Sutras - Part 1 |
| 2.3 | Core 5 | Biology of Human Body– Basics of Anatomy&Physiology (Part II) |
| 2.4 | Allied paper 1 | Basics of Biostatistics* |
| 2.5 | Allied paper Practical 1 | Basics of Biostatistics Practical* |
| 2.6 | Compulsory paper | Environmental Studies* |
| 2.7 | Core Practical 2 | Yoga Practical II |
| SEMESTER III | | |
| 3.1 | Core 6 | Introduction to Upanishads& Relevance to Yoga |
| 3.2 | Core 7 | Hatha Yoga - Part 1 |
| 3.3 | Core 8 | Patanjali Yoga Sutras -Part 2 |
| 3.4 | Allied Paper 2 | Personality Development by Bhagavad Gita |
| 3.5 | Allied paper 3 | Basics of Biochemistry |
| 3.6 | Allied Practical 3 | Basics of Biochemistry Practical |
| 3.7 | Core Practical 3 | Yoga Practical- III |
| SEMESTER IV | | |
| 4.1 | Core 9 | Hatha Yoga -Part 2 |
| 4.2 | Core 10 | Yogic Psychology |

| | | |
|--------------------|-------------------------------------|---|
| 4.3 | Allied Paper 4 | Introduction to Physiotherapy & Exercise Therapy |
| 4.4 | Allied paper 5 | Yoga and Mental Health |
| 4.5 | Allied paper 6 | Rehabilitation Psychology |
| 4.6 | Core Practical 4 | Yoga Practical- IV |
| SEMESTER V | | |
| 5.1 | Core 11 | Yoga and Consciousness |
| 5.2 | Core 12 | Application of Yoga for Society |
| 5.3 | Skilled based 2 | Environmental Psychology |
| 5.4 | Allied paper 7 | Yoga & Oncology |
| 5.5 | Allied paper 8 | Modern Psychology |
| 5.6 | Core Practical 5 | Yoga Practical- V |
| SEMESTER VI | | |
| 6.1 | Core 13 | Research Methodology |
| 6.2 | Core 14 | Physiology of Yoga |
| 6.3 | Core 15 | Nutrition & Dietetics and Concept of Yogic diet |
| 6.4 | Allied paper 9 | Nutrition and Sports & Fitness |
| 6.5 | Elective paper 1 (Choose Anyone) | Importance of Veda OR Introduction to AYUSH |
| 6.6 | Core Practical 6 | Yoga Practical- VI |

* Non-University Examinations (NUE)

SEMESTER I

| SEMESTER I | | |
|------------|------------------|--|
| 1.1 | Language 1 | Sanskrit* |
| 1.2 | Language 2 | English* |
| 1.3 | Core 1 | Biology of Human Body– Basics of Anatomy & Physiology (Part I) |
| 1.4 | Core 2 | Principles of Yoga -Part 1 |
| 1.5 | Skill based 1 | Basics of Computer* |
| 1.6 | Core Practical 1 | Yoga Practical- I |

Language 1: Sanskrit

Credit: 2

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

Reference:

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

Language 2: ENGLISH - Credit 3

Objectives:

- These courses are designed to develop the communication and vocabulary skills in the students
- Help students to improve or standardise their existing English

Outcomes: Upon completion of the course, the students have sufficient knowledge for professional communication to excel in the chosen profession.

Unit I. Passages 1 to 5.

Unit II. 2: Correct Use of Nouns and Correct Use of Pronouns

Unit III. Correct Use of Adjectives and Correct use of the Verb

Unit IV. Roots (A to F)

Unit V. Roots (G to N)

PART II. ENGLISH I

Unit I. Passages 1 to 5

Unit II. Poems: "When in Disgrace" by Shakespeare; "Daffodils" by William Wordsworth; "Obituary" by A K Ramanujan

Unit III. Prose: "The Ultimate Safari" by Nadine Gordimer and "The Gift of the Magi" by O 'Henry

Unit IV. Poems: "Because I Could Not Stop for Death" by Emily Dickenson; "After Apple Picking" by Robert Frost and "Sonnet – The Lotus" by Toru Dutt.

Unit V. Prose: "The Face on the Wall" by E V Lucas and "Kabuliwala" by Rabindranath Tagore.

Unit VI. Spoken English

CORE PAPER I

Biology of Human Body- Basics of Anatomy & Physiology- Part 1 Credits: 4

Objectives: This course aims to impart the basic knowledge of Human anatomy and physiology, along with their applications and significance.

Outcome:

1. Students will have better understanding of basics of Anatomy and physiology of human body.
2. To communicate the knowledge of different systems & its function of human body.
3. To know how different group of muscles are involved in all yogic practices.
4. Student will have the knowledge of muscles involved in various postures of yoga & physiology behind the practice.

UNIT I: General Anatomy

- 1.1 Nomenclature & terminology of human anatomy
- 1.2 Surface anatomy.
- 1.3 Classification of Bones and Joints

UNIT II: Introduction to Human Physiology:

- 1.1 Introduction to cell structure, cell organelles, cell division and tissues. Structure and function of epithelial; Connective tissue; Muscles & Nervous tissues.
- 1.2 Introduction to skeletal system and muscles
- 1.3 Introduction to Human Physiology, Cell Functions, Cell division and their functions
- 1.4 Concept of Homeostasis & Feedback Mechanisms for maintaining Homeostasis.

UNIT III: Lower Limb, Upper Limb & Musculo skeleton system

- 1.1 Joints of upper and lower extremities

- 1.2 Muscles, plexus of upper and lower extremities
- 1.3 Arterial supply, venous drainage, nerve supply and lymphatic drainage to upper and lower extremities.
- 1.4 The Muscular System: Concept of Muscle Tone and types of Muscle Contractions; functions of The Skeletal Muscles, Smooth Muscles and Cardiac Muscles and mechanism of muscle contraction.

UNIT IV: Thorax & Respiratory system:

- 4.1 Thorax – Muscles, thoracic cavity, wall & its physiology.
- 4.2 Respiratory tract -Nose, nasal cavity, pharynx, Trachea, Larynx, bronchiole & lungs.
- 4.3 Physiology of respiratory system-Mechanism of breathing; Transport of respiratory gases, ventilatory volumes, control of ventilation, functions of lungs.

Reference Books:

1. Principles of Anatomy and Physiology by Gerard J. Tortora, Bryan H. Derrickson
2. Anatomy and Physiology for Nurses by Evelyn, C. Pearce.
3. BD Chaurasia's Handbook of General Anatomy.
4. Human Anatomy by B D Chaurasia's Volume 1, 2.

CORE PAPER II: Principles of Yoga -Part 1- Credits: 4

Objectives: This course aims to convey basic knowledge of Yoga.

Outcomes:

1. Students will be able to understand the foundations of yoga.
2. Helps to understand different philosophies.
3. Students will know the importance of yoga on health.

Unit I: History & Origin of Yoga:

- 1.1 Introduction to Yoga,
- 1.2 Evolution of Yoga- Hindu mythological concept about yoga origin, Pre-vedic, Vedic period, and in modern view about yoga.

Unit II: History of different Philosophy

- 1.1 Definitions and salient features of Indian philosophy, Classification of Indian Philosophy, Advaita Vedanta; Vedanta philosophy; Co-Relationship between Indian Philosophy and Yoga.
- 1.2 Introduction to Buddhism: Introduction to Buddhism, Skandha-vada, Concept of Four noble Truths, Noble-eight-fold-path. Introduction to Jainism, Chinese philosophy (yin & Yang), Introduction to Sufism: Meaning and Characteristic features of Sufism.

Unit III: Introduction & Inputs of Eminent Yogis

- 3.1 Wisdom of yoga by Ramakrishna and Swami Vivekananda, Maharishi Raman, Shri Aurobindo

3.2 Contribution towards promotion of yoga by Swami Satyananda Saraswati, Swami Dharendra Bhramhachari and Yogacharya B.K.S. Iyengar, Maharsi Mahesh, Sri Yogendraji, Swami Kuvalyananda.

Unit: IV General Perspective of Yoga

4.1 Definitions of Yoga, Objectives of Yoga, Importance of yoga and Misconceptions about Yoga,

4.2 Principles of Yoga, Brief Introduction of schools of Yoga.

REFERENCE:

1. Lal Basant Kumar: Contemporary Indian Philosophy, Motilal Banarsidas Publishers Pvt. Ltd, Delhi, 2013
2. Dasgupta S. N: History of Indian Philosophy, Motilal Banarsidas, Delhi, 2012
3. Singh S. P: History of Yoga, PHISPC, Centre for Studies in Civilization Ist, 2010
4. Singh S. P & Yogi Mukesh: Foundation of Yoga, Standard Publication, New Delhi, 2010
5. G.C pande, Histroy of science, philosophy, and culture of Indian Civilization Vol. VII part 10 Centre for Studies in Civilisations.
6. Introduction to Buddhism by Dalai lama, Penguin publication.
7. Sufism the heart of Islam by Harper publication.
8. Sufism beyond religion by R.K Gupta

SKILL BASED PAPER I BASICS OF COMPUTERS

Credits: 3

Objectives: This is a skill-based paper that introduces the students to the basics of computer operations. The student is imparted with knowledge on both hardware and software.

Outcomes: The student has a better understanding on the use of computers for various applications

Unit-I: Fundamentals of Computer, MS- Office, and Operating System

Unit-II: Basics of HTML, HTML 5, J- Query, Database Management System

Unit-III: Basic Networking, VB- Visual Basics, Data Structure using C++

Unit-IV: Software Engineering, Asp.net, Computer Graphics.

Unit-V: Training on SPSS Software

Reference:

1. Rajib Mall, Fundamentals of Software Engineering (2015), Prentice Hall of India

CORE PRACTICAL

YOGA PRACTICAL- I Credits: 5

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:

- 1.1 Recital of Pratah-smaran , Shanti Mantras,
- 1.2 Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

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

- 1.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique, Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.
- 1.2 **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)

- 3.1 Neti : Jala Neti, Sutra Naeti
- 3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati

Unit IV: Asanas & Pranayama

- 4.3 Suryanamaskara (12 Series of asana)
- 4.4 Standing Series: Padahastāsana , Ardha Chakrāsana , Ardhakati Chakrāsana, Trikonasana, Kati chakrasana, Vrikshasana, Garudasana, Tadasana; Sitting Series: Vajrāsana, paschimotanasana Ustrasana, Vakrāsana, Ardha Matsyendrāsana; Prone Series: Bhujangasana, Shalabasana ;Supine series: Uttitapadasana, setubhandasana, pavanamuktasana.
- 4.5 Pranayama: Suryabedana, Chandrabedana, Anuloma Viloma.

Reference:

- 1. Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
- 2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati Bihar School of Yoga.
- 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

| SEMESTER II | | |
|-------------|--------------------------|---|
| 2.1 | Core 3 | Principles of Yoga - Part 2 |
| 2.2 | Core 4 | Patanjali Yoga Sutras- Part 1 |
| 2.3 | Core 5 | Biology of Human Body– Basics of Anatomy&Physiology (Part II) |
| 2.4 | Allied paper 1 | Basics of Biostatistics* |
| 2.5 | Allied paper Practical 1 | Basics of Biostatistics Practical* |
| 2.6 | Compulsory paper | Environmental Studies* |
| 2.7 | Core Practical 2 | Yoga Practical II |

CORE PAPER I

Credit: 4

Principles of Yoga: Part 2

Unit I: Yoga according to various texts:

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

Unit II: Schools of Yoga & its Relations.

- 2.1 Introduction to Schools of Yoga- Yoga philosophy; Shad darshanasa.
- 2.2 Shad darshanas- In details of **Sankhya**- Prakriti, Purusha, Mahat;, **Yoga**- Ashtanga Yoga, Chitta Vrittis, Chitta Bhumis, Chitta Vikshepa, Chitta prasadena, **Nyaya**- Pramana Shastra – Pratyaksha, Anumana, Upamana Shabda, **Vaisheshika**- Padartha, Gunas, Karma, special feature, **Mimamsa** & **Vedanta**- Uttara and Purva Mimamsa.

Unit III: Paths of Yoga

- 3.3 Paths of Yoga -Types, Meaning, concept & stages.
- 3.4 Karma yoga, Jnana yoga, Bhakti yoga & Raja yoga.

Unit IV: Theory and Methodology of yoga practices

- 4.1 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.
- 4.2 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 writing.

References:

1. Asana by Swami Kuvalyananda Kaivalyadhama, Lonavla.
2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati Bihar School of Yoga.
3. Light on Yoga, by B.K.S Iyengar, Harper Collins Publishers.
4. Surya Namaskar by Saraswati, Swami Satyananda, Bihar School of Yoga.
5. Teaching methods for Yogic practices by Dr. Gharote M L, Kaivalyadhama, Lonavala.
6. 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.

CORE PAPER II
Credit: 4
Patanjali Yoga Sutras Part 1

Unit I: Introduction to Patanjali & Yoga Sutra

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

Unit II: Samadhi Pada

- 2.1 Introduction to Samadhi pada, Ishwara pranidhana according to Samadhi pada.
- 2.2 Types of Samadhi according to patanjali- Samprajnata Samadhi & Asamprajnata Samadhi in detail.

Unit III: Sadhana pada

- 3.1 Disciplines of yoga - Pancha Klesha's; Kriya Yoga according to patanjali yoga sutra
- 3.2 In detail of Astanga Yoga- Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana & Samadhi

References:

1. Light on Yoga sutra of Patanjali by B.K.S Iyengar -Harper Collins publisher.

CORE PAPER III
Credit: 4
Biology of Human body: Basics of Anatomy & Physiology – Part 2

Objectives: This course aims to impart the basic knowledge of Human anatomy and physiology, along with their applications and significance.

Outcome:

1. Students will have better understanding of basics of Anatomy and physiology of human body.
2. To communicate the knowledge of different systems & its function of human body.
3. To know how different group of muscles are involved in all yogic practices.
4. Student will have the knowledge of muscles involved in various postures of yoga & physiology behind the practice.

Unit I: Gastro-Intestinal system, Endocrine system & reproductive system.

- 1.1 Digestive organs and their applied & surface anatomy
- 1.2 Excretory organs and their applied & surface anatomy
- 1.3 Reproductive organs and their applied and surface anatomy

Unit II Head & Neck

- 2.1 Anatomy of Head, Face, nose, ear, eyes & physiology of sense organ
- 2.2 Anatomy of Neck- Muscles, Joints, Vertebrae, Blood supply, venous supply & Nerve supply
- 2.3 Physiology of Sense organs

Unit III Heart & Cardiovascular system

- 1.1 Anatomy of heart – Chambers, Valves, Blood supply, Nervous supply
- 1.2 Physiology of heart

Unit IV Central Nervous system , Lymphatics & Immune system

- 4.1 Anatomy of brain- Parts of brain, Blood supply, Function of brain
- 4.2 Nervous system – Central nervous system & Peripheral nervous system and its function., Autonomic nervous system; Lymphatics & Immune system in detail

Reference Books:

1. Principles of Anatomy and Physiology by Gerard J. Tortora, Bryan H. Derrickson
2. Anatomy and Physiology for Nurses by Evelyn, C. Pearce.
3. BD Chaurasia's Handbook of General Anatomy.
4. Human Anatomy by B D Chaurasia's

Allied Paper I- BASICS OF BIOSTATISTICS- Credits: 3

Objectives: This course imparts the knowledge of basic statistical methods to solve problems. Students are taught to operate various statistical software packages

Outcomes: The students can appreciate the importance of statistics in research and prepare them for a career in research.

Unit I: Introduction to Statistics: Definition and Application of Statistics,

Qualitative Data, Quantitative Data, Frequency Distribution, Cumulative Frequency, Diagrammatical Representation of Statistical Data (Bar, Pie), Graphical Representation of Frequency Distribution (Histogram, Frequency Polygon, Cumulative Frequency Curves).

Unit II: Descriptive Statistics: Measure of Central Tendency: Mean, Median, Mode, Geometric Mean (Merits and Demerits), Measure of Dispersion: Range, Standard Deviation, Variance, (Merits and Demerits), Co-Efficient of Variation.

Unit III: Probability: Trial, event, sure event, random event, Sample space, Definition of probability, mutually exclusive events, Independent event, Laws of Probability - simple problems, Normal probability curve.

Unit IV: Hypothesis Testing: Hypothesis, Types of Hypothesis, Level of Significance, Type I and Type II Error, Standard Error, Degrees of Freedom, Chi Square Test, Student's t Test: One Sample t Test, Paired t Test.

Unit V: Correlation and Regression: Correlation: Definition, Types of Correlation, Karl Pearson's Coefficient of Correlation, Simple Linear Regression, One Way ANOVA.

Reference Books:

1. Fundamentals of Mathematical Statistics (2015) S.C. Gupta and V. K. Kapoor
2. Fundamentals of Statistics (2011): S.C. Gupta.
3. Fundamentals of Biostatistic by Veer Bala rastogi

COMPULSORY PAPERENVIRONMENTAL STUDIES- Credits:2

Objective: The main objective of this paper is to create awareness among the students about the environment

Outcome: The students will have a better appreciation for the environment and become responsible citizens

Unit I: The Multidisciplinary nature of environmental studies: Natural Resources. Renewable and non-renewable resources: Natural resources and associated problems. a) Forest resources; b) Water resources; c) Mineral resources; d) Food resources; e) Energy resources; f) Land resources: Role of an individual in conservation of natural resources.

Unit II: Ecosystems: Concept of an ecosystem. Structure and function of an ecosystem. Introduction, types, characteristic features, structure and function of the ecosystems: Forest ecosystem; Grassland ecosystem; Desert ecosystem; Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit III: Environmental Pollution: Air pollution; Water pollution; Soil pollution

Reference Books:

1. Y.K. Sing: Environmental Science, New Age International Pvt, Publishers, Bangalore. 2011
2. Agarwal, K.C. 2011 Environmental Biology, Nidi Publ. Ltd. Bikaner.
3. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad. India,
4. Brunner R.C., 2015, Hazardous Waste Incineration, McGraw Hill Inc. 2015
5. Clark R.S., Marine Pollution, Clanderson Press Oxford 2015
6. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2011, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 2015
7. De A.K., Environmental Chemistry, Wiley Eastern Ltd. 2011
8. Down of Earth, Centre for Science and Environment 2011

CORE PRACTICAL: YOGA PRACTICAL- II - Credits: 6

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:

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

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

2.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique, Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.

2.2 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)

- 3.1 Neti : Jala Neti, Sutra Naeti
- 3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
- 3.3 Trataka & Agnisara kriya

Unit IV: Asanas & Pranayama

4.1 Suryanamaskara (12 Series of asana), Variations of Suryanamsakara.

4.2 Standing Series: Padahastāsana, Ardha Chakrāsana, Ardhakati Chakrāsana, Trikonasana, Kati chakrasana, Vrikshasana, Garudasana, Tadasana; **Sitting Series:** Vajrāsana, paschimotāsana Ustrasana, Vakrāsana, Ardha Matsyendrāsana; **Prone Series:** Bhujangasana, Shalabasana; **Supine series:** Uttitapadasana, setubhandasana, pavanamuktasana,

4.3 Hatha Yoga Pradeepika Asanas; Important asanas of hatha yoga pradipika..

4.4 Pranayama with variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama, Nadi shodhana & Kumbaka

4.5 Teaching Methodology Practical: Communication skill, Precaution, Instruction, Demonstration, Correction of Yogic practices.

Reference:

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

| SEMESTER III | | |
|--------------|--------------------|--|
| 3.1 | Core 6 | Introduction to Upanishads & Relevance to Yoga |
| 3.2 | Core 7 | Hatha Yoga -Part 1 |
| 3.3 | Core 8 | Patanjali Yoga Sutras part 2 |
| 3.4 | Allied Paper 2 | Personality Development by Bhagavad Gita |
| 3.5 | Allied paper 3 | Basics of Biochemistry |
| 3.6 | Allied Practical 3 | Basics of Biochemistry Practical |
| 3.7 | Core Practical 3 | Yoga Practical- III |

Core Paper -I Introduction to Upanishads & Relevance to Yoga Credit: 3

Unit I: Introduction to Upanishads

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

Unit II: Isha and Kenopanishad

- 1.1 In detail of Isha Upanishad & its importance.
- 1.2 In detail of Keno Upanishad & its importance.

Unit III: Katho and Prashnapanishad

- 1.1 In detail of Katho Upanishad & its importance.
- 1.2 In detail of Prashno Upanishad & its importance.

Unit IV: Mundaka, Mandukya, Taitirya, Aitreya, Chandokya & Brihadaranyaka

- 4.1 In detail of Mundaka, Mandukya, Taitirya Upanishad & its importance.
- 4.2 In detail of Aitreya, Chandokya & Brihadaranyaka Upanishad & its importance.

Reference books:

1. The principle Upanishads –By S. Radhakrishnan
2. The message of the Upanishads – by Swami Ranganathananda, 1985 Bharatiya Vidya Bhavan (Bombay)

Core Paper-II Hatha Yoga Part 1

Unit I: Introduction & origin of hatha yoga

- 1.1 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.
- 1.2 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 II: Essential Texts of Hatha Yoga

- 2.1 Gheranda Samhita (G.S.) & Hatha Rathnavali (H.R.) & Shiva Samhita (S.S.)
- 2.2 Siddhasiddhantapaddhati (S.S.P) & Hatha Pradeepika (H.P.)

Unit III: Hatha Yoga Pradipika – Asanas

- 3.1 Asana described by hatha yogis: Hatha yoga pradepika asana practice –Swastikasana, Gomukasana, Koormasana, Uttanakoormasana, Dhanurasana, Mathyesndrasana, Paschimothanasana, & its benefits.
- 3.2 Four major asana & its benefits; Sequence of hatha yoga practice; Yama and Niyama and its relevance in Hatha Yoga Sadhana

Unit IV: Mithahara

- 4.4 Food prohibited in Hatha yoga; Health food according to Hatha yoga
- 4.5 Perfection from hatha yoga practice; Signs and perfection in hatha yoga; Concept of Shiva and Shakti

References

- Hatha Yoga Pradeepika, Bihar school of yoga publications, Munger by Swami Muktibodhananda Saraswati.;, 2000 2.
- HathaYoga Pradeepika of Svatmarama, by Sahay G.S MDNIY Publication, 2013.

Core Paper-III
Patanjali Yoga Sutra Part 2 Credit -4

Unit- I Vibhuti pada

- 1.1 Introduction to Vibhuti Pada
- 1.2 Achieving Samyama- By Dharana, Dhyana, Samadhi

Unit-II Kaivalya Pada

- 2.1 Process of Liberation through siddhis
- 2.2 Samadhi

Unit III: Concept of Mind according to Patanjali

- 3.1 In detail of Mind, Ego & Intellectual level explained in patanjali yoga sutras (Citta, Manas, Buddhi & Ahankara)
- 3.2 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 & consciousness -Citta-Vritti Nirodhopaya from yoga sutras.

References:

- 1. Light on Yoga sutra of Patanjali by B.K.S Iyengar -Harper Collins publisher.

Allied paper 2
Personality Development by Bhagavad Gita Credit -3

Unit I Introduction of Bhagavat Gita

- 1.1 Introduction to Bhagavad gita and Definition of Yoga according to Bhagavat gita.
- 1.2 Importance of Bhagavat gita- Mind, Bhakti, Sthithaprajna, Dhyana, nature of Athma, Jivathma, Paramathma.

Unit II Different types of Yoga as per Bhagavad gita

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

Unit III Application of Bhagavad gita in Human life

- 3.1 Yogic diet according to Bhagavat gita; Purushas and evil quality (15th & 16th Chapters)
- 3.2 Triguna theory in context to Bhagavat gita (14th, 17th & 18th Chapters); Application of principles of Bhagavat gita in individual life about- Detachment, Bhakti and selfless action.

Unit IV Chapters of Bhagavad gita with reference to yoga

4.1 Chapters II, III, IV, V,

4.2 VI, XII, XVII with reference to Yoga and food

Reference:

- The Holy Gita, Swami Chinmayananda, Chinmaya Mission

Allied Paper 3-Principles of Biochemistry – Credits: 3

Objectives: The course aims to provide exposure to the students regarding the importance of biological macromolecules and their role in reactivity of biomolecules

Outcomes: At the end of the course, the students have a thorough understanding on the role of biomolecules and their functions. Being an allied paper, it ensures to create enough relevance with role of biomolecules in life to all disciplines like biotechnology, microbiology, food, nutrition and dietetics; as well as environmental sciences.

Unit I: Introduction of Cells, Water, Thermodynamics, Bonds, Photosynthesis and Respiration.

Unit II: Carbohydrates-Classification, Metabolism: Glycolysis, Gluconeogenesis, Krebs Cycle, Pentose Phosphate Pathway, Glyoxylate cycle. Electron Transport Chain, ATP Synthesis.

Unit III: Classification of Amino Acids. Peptide bond, Peptides, Protein structure, Enzymes action and classification. Nitrogen cycle. Amino acid metabolism and degradation.

Unit IV: Classification of lipids, Fatty acid oxidation and synthesis, Lipid bilayer, Lipid transport. Ketone bodies.

Unit V: Nucleic acids: Types of DNA and RNA, Central dogma of Molecular Biology, Replication, Transcription and Translation.

Reference Books:

1. Nelson, D. L. & Cox, M. M. Lehninger, 2013, Principles of Biochemistry. Freeman - 6th edition,
2. U Satyanarayana, 2013, Biochemistry. Elsevier. 5th Edition.
3. Berg, J. M., Tymoczko, J. L. and Stryer, L. 2011, Biochemistry. Freeman 7th edition.
4. Voet, D., Voet, J. G., & Pratt, C. W. 2011. Fundamentals of Biochemistry (pp. 408-409). New York: Wiley – 4th edition.
5. Conn, E., & Stumpf, P. 2016. Outlines of Biochemistry. John Wiley & Sons – 5th edition.

6. West, E. S., Todd, W. R., Mascon, H. S., & Van Bruggen, J. T. 2014. Textbook of Biochemistry. Oxford and IBH Publishing - 4th Edition
7. Lodish, H., Berk, A., Zipursky, S. L., Matsudaira, P., Baltimore, D. and James Darnell, J. 2013. Molecular Cell Biology, Freeman - 7th edition.

CORE PRACTICAL: YOGA PRACTICAL- III - Credits: 6

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:

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

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

- 2.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique, Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.
- 2.2 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)

- 3.1 Neti : Jala Neti, Sutra Naeti
- 3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
- 3.3 Trataka & Agnisara kriya

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

- 4.3 **Suryanamaskara** (12 Series of asana), Variations of Suryanamsakara.
- 4.4 **Standing Series**: Padahastāsana, Ardha Chakrāsana, Ardhakati Chakrāsana, Trikonasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; **Sitting Series**: Vajrāsana, paschimotāsana Ustrasana, Vakrāsana, Ardha Matsyendrāsana; **Prone Series**: Bhujangasana, Shalabasana; **Supine series**: Uttitapadasana, setubhandasana, pavanamuktasana,
- 4.5 **Hatha Yoga pradeepika asanas**; Important asanas of hatha yoga pradiipika..
- 4.6 **Pranayama** with variations: Suryabedana, Chandrabedana, Anuloma

Viloma, Bhramari pranayama, Nadi shodhana & Kumbhaka

4.7 Teaching methodology practical: Communication skill, Precaution, Instruction, Demonstration, Correction of Yogic practices.

4.8 Mudras & Bandhas- All mudras & bandhas as per theory

4.9 Patanjali yoga sutras- Samadhi pada & Sadhana pada shlokas

Reference

- 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.

SEMESTER-IV

| SEMESTER IV | | |
|-------------|------------------|--|
| 4.1 | Core 9 | Hatha Yoga -Part 2 |
| 4.2 | Core 10 | Yogic Psychology |
| 4.3 | Allied Paper 4 | Introduction to Physiotherapy & Exercise Therapy |
| 4.4 | Allied paper 5 | Yoga and Mental Health |
| 4.5 | Allied paper 6 | Rehabilitation Psychology |
| 4.6 | Core Practical 4 | Yoga Practical- IV |

Core paper I Hatha Yoga- Part-2: Credit: 4

Unit I: Shatkarma and Pranayama

- 1.1 Six Purification techniques- Dhauti & its importance; Basti & its curative effect; Neti & its benefits; Trataka & curative effectiveness of trataka; Nauli & its benefits; Kapalabhati & its importance; Freedom from excess doshas through shatkarmas.
- 1.2 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 pranayamas; Time & duration of pranayama practice; Kumbhaka & its types; Kevala kumbhaka & perfection of hatha yoga & raja yoga through kumbhaka; Pranayama according to hatha yoga- Suryabhedhana, Ujjayi, Seetakari, Bhastrika, Bhramari, Moorchha, Plavini pranayama.

Unit II Mudras & Bandhas

- 2.1 Kundalini – key to liberation; Names of Kundalini shakti; Benefits of kundalini moving; Ida, Pingala & sushumna; Moving of kundalini; Methods to purify nadis.
- 2.2 Ten mudras; Eight siddhis obtained by mudra; Maha mudra & its power; Curative effect of maha mudra; Maha Bandha –unites three nadis; Maha vedha

mudra- Benifits & regulation; Kechari Mudra- Benifits, technique; Uddiyana bandha- Benifits; Moola Bandha- benifits & physical effect; Jalandhara bandha- Benifits; Benifits of three bandhas; Vipareeta karani mudra, Vajroli mudra, Sahajoli mudra, Amaroli mudra, Shambavi- Its importance and benifits; Ten mudras told by Adinath.

Unit III Samadhi

- 3.1 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
- 3.2 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; hatha yoga according to gerhada samitha(Prathyahara).

Unit IV: Application of Hatha Yoga

- 4.3 Important asanas & pranayama according to Hath rathavali(32 asana) & Gheranda samitha;(84 asana); Four important asanas.
- 4.4 Practice of Hatha yoga to attain Samadhi.

References:

1. Hatha Yoga Pradeepika, Bihar school of yoga publications, Munger by Swami Muktibodhananda Saraswati.;, 2000 2.
2. HathaYoga Pradeepika of Svatmarama, by Sahay G.S MDNIY Publication, 2013.
3. Science of Pranayama by Swami Sivananda A divine life society publication.

Allied paper4: Introduction to Physiotherapy & Exercise therapy – Credits:3

Objective: To enable students to understand the basics of physiotherapy and its similarities with yoga.

Outcome: Students will be able to understand theory & learn technique of exercise therapy, difference between yoga and physiotherapy.

Unit I Introduction to physiotherapy

- 1.1 History of Physiotherapy; Physiotherapy role in health; Biomechanics: (Kinematics and Kinetics)- Motion- Types, Location, Direction & Magnitude; Equilibrium; Force; -Definition of Forces- Force of Gravity, Reaction forces, Force component; Pulley
- 1.2 Structure of Joints & Its functions-Design, motion, material, function, connective tissue of joints; Function, Structure, stability & function of ; Biomechanics of the vertebral column, Thorax and Chest wall

Unit II Exercise therapy

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

Unit III Muscle performance

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

Unit IV Aerobic Exercise; Suspension Therapy, Stretching & Yoga comparison

- 4.1 Aerobic Exercise- Definition, Physiological response to aerobic exercise, Types & phases of exercise ; Suspension Therapy - Definition, principles, Types, Benefits of suspension therapy ,equipments used, Indications & contraindications of suspension therapy; Stretching- Definition, technique, precaution, Response of Tissue response towards stretching, effects of stretching, Inhibition and relaxation procedures & contraindications
- 4.2 Yoga – Effect of Suryanamsakara, Head down postures, Rope technique yoga.

Reference books:

1. Principles of exercise therapy by M.Dena Gardiner.
2. Therapeutic exercise by Barbara Bandy
3. Therapeutic exercise by Carolyn Kisner.
4. Asnana, Pranayama, Banda & Mudra.

Core paper-III
Yogic Psychology: Credit: 4

Unit-I Introduction to Psychology

- 1.1 History of Psychology.
- 1.2 Different Schools of thought in psychology- Social, Biological, Structuralism, functionalism, Psychoanalysis & behaviourism

Unit II Study of Human behaviour and counselling:

- 2.1 Branches of psychology- Applied psychology.
- 2.2 Methods of psychology- Introspection, observation, inventory and experimental method; Personality development- type & characteristics of personality, behaviour, psychoanalytic and humanistic approach.

Unit-III State of Consciousness in Yogic scriptures and their applicability

- 3.1 Swapna-State of consciousness; Jagriti – State of Wakeful consciousness
- 3.2 Sushupti - Deep sleep; Turiya –Pure consciousness ; Chandogya Upanishad ; Applicability – Yoga Nidra.

Unit-IV Human System according to yoga

- 4.1 Panchakosha theory; Panch maha buttas, Pancha tanmatras; Sankya yoga philosophy- Purusha & Prakriti.
- 4.2 Chakra theory – Sthula sarira & Sukshma sarira, Types of chakras; Tattvas- 96 quality of human body.

Reference:

1. Understanding Psychology. New Delhi: Tata McGraw hill. By Feldman.R.H (1996).
2. Introduction to Psychology. New Delhi: Tata McGraw hill. By 2. Morgan et al (2003).
3. Hatha Yoga Pradeepika by Swami Muktibodhananda.
4. Prana, Pranayama & Pranavidya by Swami Niranjanananda.
5. The Six Systems of Hindu Philosophy by Swami Harshananda (Ramakrishna Matt).
6. Yoga Health (Swami Vivekananda Yoga Prakashana) by Dr H R Nagendra & Dr R Nagarathna

Allied Paper 5: Yoga and Mental Health - Credits-3

Unit I Introduction to Mental health

- 1.1 Definition of mental health; Introduction on Positive Psychology; Mindfulness, Self-efficacy, Optimism, Hope, Resilience, Wisdom, Flow.
- 1.2 Happiness and Well being; Positive Emotions, Emotional Intelligence.

Unit II Psychiatric disorder

- 2.1 Anxiety disorder, Dementia, delirium, Schizophrenia Amnestic Disorders; Substance-Related Disorders; Schizophrenia and Other Psychotic Disorders; Personality Disorders, Mood disorder- Depression, Bipolar disorder.
- 2.2 Physiology of Stress, Types of stress, Factors responsible for stress.

Unit III Mental Health in context to Yoga

- 3.1 Mental health explained in Panchakosha theory; Bhagavad gita & Patanjali yoga sutra.
- 3.2 Role of different meditation technique in psychiatric disorder; Scientific evidence of Yoga on Psychiatric disorders, Latest research on mental health and yoga.

Unit IV Yoga therapy for Psychiatric disorder

- 4.1 Management of Anxiety, Depression, Schizophrenia, Dementia, by yoga-Specific Sukshma Vyayama, asana, pranayama, & meditation technique.
- 4.2 Management of Psychiatric disorder in children through yoga; Special Techniques for psychiatric disorder.

Reference:

1. MEDLINE database
2. Baumgardner, S.R. Crothers M.K. (2010). Positive psychology. Upper Saddle River, N.J.: Prentice
3. Hall. Carr, A. (2014). Positive Psychology: The science of happiness and human strength.UK:
4. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati

Allied Paper 6: Rehabilitation Psychology-Credit 3

Objective:

1. To enable the students to understand the historical root, Nature and scope of Rehabilitation.
2. Describe the Treatment and Services provided for problem drinkers, drug abusers and victim of violence/AIDS

Unit – I Psychological Aspects of Rehabilitation

The concept of rehabilitation-the person and environment-objective-scope-orientation rehabilitation: history.

Unit – II Essential of Rehabilitation

Rehabilitation and Chronic Illness-Rehabilitation Medicine: Introduction
Rehabilitation Staff Team-Occupational Therapy-Complementary- And Alternative
Medicine-Legal Aspects Of Disability: PWD Act, Mental Health Act-RCI Act-National
Trust ACT.

Unit – III Rehabilitation of offenders & Mentally Abnormal offenders.

Introduction-Legal, Process-Compulsory Hospital Admission-Voluntary
organizational services.

Unit – IV Rehabilitation of Mentally Handicapped

Nature of mentally handicapped-Assessment-behavioural Methods in teaching
mentally handicapped.

Unit – V Rehabilitation of Problem Drinkers, Drug Abusers.

Conceptual background- services for problem drinkers and drug abusers:
detoxification services-treatment methods-rehabilitation in Victims and violence's
and AIDS.

References:

1. Fraser N Wats and Bennar, D.H(2013): theory and practice of psychiatric rehabilitation, New York: John Wiley & Sons.
2. Bhatia M.S (2004): Essential of psychiatry. New Delhi:CBS.
3. Shelly E Taylor (2003): Health Psychology. NewDelhi: TataMcGraw Hill.

CORE PRACTICAL: YOGA PRACTICAL- IV - Credits: 6

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:

1.1 Recital of Pratah-smaran, Shanti Mantras.

1.2 Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

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

2.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique, Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.

2.2 **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, sit-ups ; *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)

3.1 Neti : Jala Neti, Sutra Naeti

3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati

3.3 Trataka & Agnisara kriya

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

4.1 **Suryanamaskara** (12 Series of asana), Variations of Suryanamsakara.

4.2 **Standing Series:** Padahastāsana, Ardha Chakrāsana, Ardhakati Chakrāsana, Trikonasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; **Sitting Series:** Vajrāsana, paschimotanasana Ustrasana, Vakrāsana, Ardha Matsyendrāsana; **Prone Series:** Bhujangasana, Shalabasana; **Supine series:** Uttitapadasana, setubhandasana, pavanamuktasana,

4.3 **Hatha Yoga pradeepika asanas;** Important asanas of hatha yoga pradipika..

4.4 **Pranayama** with variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama, Ujjai, Sheetali Pranayama, Shitkari Pranayama, Nadi shodhana & Kumbaka

4.5 **Teaching methodology practical:** Communication skill, Precaution, Instruction, Demonstration, Correction of Yogic practices.

4.6 Mudras & Bandhas- All mudras & bandhas as per theory

4.7 Bhagavat gita & Patanjali yoga sutras- Vibhuti & Kaivalya pada shlokas

Reference:

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-V

| SEMESTER V | | |
|-------------------|------------------|---------------------------------|
| 5.1 | Core 11 | Yoga and Consciousness |
| 5.2 | Core 12 | Application of Yoga for Society |
| 5.3 | Skilled based 2 | Environmental Psychology |
| 5.4 | Allied paper 7 | Yoga & Oncology |
| 5.5 | Allied paper 8 | Modern Psychology |
| 5.6 | Core Practical 5 | Yoga Practical- V |

Core Paper-I
Yoga and Consciousness Credit -4

Unit I Introduction to consciousness:

- 1.1 Introduction to Indian philosophy-Asthika and nasthika & western Philosophy- Socratic Philosophy; Neural correlates of Consciousness.
- 1.2 Definition of Consciousness; Types of consciousness; Streams of consciousness; Awareness- Self-awareness; Dreaming and Altered awareness; View of Mind & Body

Unit II Human consciousness explained in yogic texts:

- 2.1 Consciousness in Upanishad; Consciousness in Buddhism; Consciousness in Advaita Vedanta; Consciousness in Jain Darshan
- 2.2 Consciousness and Soul; Consciousness according to Vedanta; Consciousness according to Advaita, Dvaita and Visista advaita schools, Consciousness according to Nyaya, Vaishesika and Sankya Schools; Role of yoga (3 states of mind) in human consciousness; Spirituality in human consciousness.

Unit III States of consciousness:

- 3.1 State of Consciousness - Conscious, Subconscious and Unconscious; Consciousness according to western psychology, Levels of Consciousness.
- 3.2 Physiology of sleep; Human behaviour and consciousness.

Unit IV Scientific studies on yoga and consciousness

- 4.1 Research Methodology with special reference to Consciousness & Yoga.
- 4.2 Studies of Mediation- Neurophysiological effect by meditation and Correlates- EEG (Electroencephalogram) Neuroimaging Studies of Meditation; Psychological effects of Meditation; studies on cognitive function and others.

References:

- 1. MEDLINE data base
- 2. Yoga textbooks- Bhagavat gita, Veda, Hatha Yoga, Upanishad books
- 3. Baron.A.R(2013). Psychology. (7TH Ed,) New Delhi: Pearson Education.
- 4. Santrock, J.W., (2005) Psychology Essentials. New Delhi: Tata McGraw Hill publication.
- 5. A Study in Consciousness by Annie Besant.

Core paper-II Application of Yoga for society- Credit: 4

Unit – I Introduction to Practice

- 1.1 Teaching technique to different age groups-for Childrens, geriatric, women, disabled, special childrens, psychological ailment group.
- 1.2 Introduction to yoga therapy and yoga concept: Concept of health & disease according to WHO; Its Health Dimensions; Concept of Health in Yoga; Concept of disease according to yoga -Taittiriya Upanishad, Yoga Vasistha(Concept of Adhi and Vyadhi); Hatha yoga; Patanjali- Concepts of Trigunas, Pancha-mahabhutas, Pancha-prana.; Introduction to Yoga therapy

Unit-II Rules and Regulation of Yoga practice

- 2.1 Limitations of Yoga guru; Pre requites for yoga practice.
- 2.2 Rules to be followed before, during & after yoga practice, Indication & contraindication of food intake during yoga practice, First aid in yoga class during emergency.

Unit III Yoga & Education

- 3.1 Human relationship – Yogic perspective -Maitri, Karuna, Mudita and Upeksha; Concept \ of Vasudaiva Kutumbakam; Concept of Samman (Respect), difference between respect and differentiation.
- 3.2 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.

Unit IV Advance technique & meditation

- 4.1 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; Kriyas- Nauli : Madhyam Nauli, Vama Nauli, Dakshina Nauli and Nauli Kriya.

4.2 Advance Meditation – OM meditation; Vipassana meditation, Transcendental meditation, Cyclic meditation, Tai Chi-based meditation, Zen meditation, Qi-gong meditation

References:

1. Swami Satyananda Saraswati: Yoga Education for Children, Bihar Schools of Yoga,
2. Basavaraddi I V: Yoga: Teachers manual for school children, MDNIY New Delhi, 2010
3. Basavaraddi I V: Yoga in School Health, MDNIY New Delhi, 2009
4. Iyenger B K S: Astadala Yogamala 1 to 7 volumes, Allied Publishers Pvt. Ltd, 2009
5. Basavaraddi I V: Yogic Management of Geriatric Disorders, MDNIY, New Delhi, 2009
6. Swami Satyananda Saraswati: Asana, Pranayama, Mudra, Bandha Swami Muktibodhananda Saraswati: Hatha Yoga Pradeepika.

Skilled Paper 2: ENVIRONMENTAL PSYCHOLOGY- Credits 3

Objective: To understand the Environmental Psychology deals with behaviour in relation to the physical environment. And understand the environmental values, meanings and preferences.

Unit I: Introduction: Environmental psychology - Meaning of Environmental Psychology, Characteristics of Environmental Psychology, Importance Environmental Psychology - Nature and A brief overview of the theories of Environment - for the study Behavioural relationship

Unit II: Environmental stresses: Environmental Stresses: Human-environment interaction, various aspects of environmental stress. Noise - Important noise variables, sources of noise, and physiological effects of Noise on performance. Noise and social behaviour.

Unit III : Environmental Effects:: The urban environment and social Behaviour - Environmental Stress: Temperature and weather as environmental stressors -Temperature and aggression - Air pollution -Personal space – Territorial Behaviour – Territorial dominance, Crowding - The effects of too many people and too little space.

Unit IV: Changing Behaviour: Changing Behaviour to save the Environment, Environmental education: Approaches to current environmental problems –

Environmental Management: A Perspective from Environmental Psychology.

Unit V: Environmental Acts: Vandalism, curbing environmentally destructive acts: An assessment of the present and the future Visits to centres/organizations related to environmental issues like pollution, energy conservation should be arranged.

References:

- Fisher, J.D., Bell, P A. and Ban, A. (2000): Environmental Psychology, 2nd edition, New York: bolt, Rinehart and Winston.
- 2. Pajeons, J D. (2007): Environment and Behaviour, Massachusetts, Addi and Westey Publishing Co.
- Bell, PA., Fisher, J.D. & Loomis, RJ. (2001): Environmental Psychology, Philadelphia: W.E.Saunders Co.

Allied paper 7: Yoga and Oncology-Credit 3

Unit I Introduction to Oncology

- 1.1 Definition, Introduction, Types of cancer,
- 1.2 Signs & Symptoms of cancer; Side effect of chemotherapy and radiation

Unit II Immune system

- 2.1 Introduction, Classification of Immune System.
- 2.2 Physiological regulation in body by Immune system

Unit III Yoga as Add-On therapy for cancer

- 3.1 Effect of yoga in modulating immunity; Benefits of yoga in cancer care; Limitations of Yoga therapy in cancer care, Pain management through yoga.
- 3.2 Role of yoga in stress & fear, Yoga and positive wellbeing, Side effects of chemotherapy, radiation therapy and management through yoga, Yogic counselling- Spirituality & lifestyle changes.

Unit IV Special techniques for Oncology

- 4.1 Scientific evidence for Yoga & Oncology
- 4.2 Role of meditation, relaxation technique, OM chanting, Mantras in cancer management.

Reference:

- 1. Medline Data base- Review articles & research publication
- 2. Asana, Pranayama, Bandha, Mudra by Swami Satyananda Saraswati
- 3. Textbook of Medical Physiology by Guyton & Hall

Allied paper 8: Modern Psychology - Credits-3

OBJECTIVES: Students to understand the various schools and models in psychology, and the Concept of Sensation, perception, and their principles.

OUTCOME: After Completion of the syllabus students will be able to Describe the scientific bases of Psychology.

UNIT – I Introduction and Methods

Modern psychology- Definition- Schools: Structuralism-Functionalism-Psychology-Behaviorism-Humanistic and Psychology-Major Sub field of psychology-Methods: Introspection-Observation-Survey-Experimentation-Case Study-Correlation Research-Heridity and Behavior; Sensation and perception-Sensation-Meaning-Threshold-Adaptation-Vision-Hearing-Touch and Skin senses- Smell and Taste. Perception-Meaning – Organizing Principles- Constancies-Illusion-Pattern Perception-Distance Perception-Extra Sensory Perception.

UNIT – II State of Consciousness & Personality

Biology Rhythms-Waking States of Consciousness- Sleep-Functions of Sleep-Dreams. Altered State of Consciousness: Hypnosis, Meditation.; Cognition and motivation- Thinking: Concept- Reasoning- Problem Solving, Motivation: Meaning-Theories of Motivation, Frustration; Emotion, Personality theories.

UNIT – III Learning Memory and Forgetting

Definition-Classical Conditioning-Basic Principles-Operant Conditioning-Reinforcement-

Basic Principles-Learned Helpless-Observation Learning-Insight Learning.; Memory: Meaning-Models-Sensory Memory-Short term memory-Long Term Memory. Forgetting-Causes: Decay Hypothesis-Inference-Retrieval Failure-Amnesia-Memory and the brain. Improving Memory.

Unit IV Intelligence, Creativity, Memory and Forgetting

Intelligence: Meaning-Theories-Concept Of IQ-Extremes of Intelligence-The Role Of Heridity and Environment- Emotional Intelligence-Components, Creativity: Meaning-Nature-Steps in Creative Thinking-Characteristics of Creative People; Memory: Meaning – Model –Sensory Memory-Short Term Memory-Long Term Memory. Forgetting: Meaning-Causes: Decay Hypothesis-Interference-Retrieval Failure-Repression-Amnesia-Memory and The Brain-Improving Memory.

REFERENCES

1. Baron.A.R(2013). Psychology. (7TH Ed,)New Delhi: Pearson Education.
2. Santrock, J.W., (2005) Psychology Essentials. New Delhi: Tata McGraw Hill publication.

CORE PRACTICAL: YOGA PRACTICAL- V - Credits: 6

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:

1.1 Recital of Pratah-smaran, Shanti Mantras.

1.2 Recital of Pranava (OM), Soham, Bhajans & Patriotic Song

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

2.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique,

Hands stretch breathing (three forms), Hand In & out breathing Ankle stretch breathing, Rabbit breathing & Tiger breathing.

2.2 **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, sit-ups ; *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)

3.1 Neti : Jala Neti, Sutra Naeti

3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati

3.3 Trataka & Agnisara kriya

3.4 Nauli.

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

4.1 **Suryanamaskara** (12 Series of asana), Variations of Suryanamsakara.

4.2 **Standing Series:** Padahastāsana , Ardha Chakrāsana , Ardhakati Chakrāsana, Trikonasana, Kati chakrasana, Vrikshansana, Garudasana, Tadasana; **Sitting Series:** Vajrāsana, paschimotāsana Ustrasana, Vakrāsana, Ardha Matsyendrāsana; **Prone Series:** Bhujangasana, Shalabasana, Dhanurasana, Navasana, makarasana; **Supine series:** Uttitapadasana, setubhandasana, pavanamuktasana,

4.3 **Hatha Yoga pradeepika asanas;** Important asanas of hatha yoga pradiipika..

4.4 **Pranayama** with variations: Suryabedana, Chandrabedana, Anuloma Viloma, Bhramari pranayama, Ujjai, Sheetali Pranayama, Shitkari Pranayama, Nadi shodhana & Kumbaka

4.5 Advance asanas**4.6 Relaxation technique- Shavasana, QRT, IRT, DRT****4.7 Teaching methodology practical:** Communication skill, Precaution, Instruction, Demonstration, Correction of Yogic practices.**4.8 Mudras & Bandhas-** All mudras & bandhas as per theory**4.9 Bhagavat gita & Patanjali yoga sutras-** Vibhuti & Kaivalya pada shlokas**Reference:**

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 VI

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|--------------------|-------------------------------------|---|
| 6.1 | Core 13 | Research Methodology |
| 6.2 | Core 14 | Physiology of Yoga |
| 6.3 | Core 15 | Nutrition & Dietetics and Concept of Yogic diet |
| 6.4 | Allied paper 9 | Nutrition and Sports & Fitness |
| 6.5 | Elective paper 1 (Choose Anyone) | Importance of Veda OR Introduction to AYUSH |
| 6.6 | Core Practical 6 | Yoga Practical- VI |

Core Paper I: Research Methodology- Credit 4**Unit I Introduction to Research**

- 1.1 Definition of research; Importance of research
- 1.2 Types of research

Unit II Ethics & Research

- 2.1 Ethics of research; informed consent form, anonymity; confidentiality; plagiarism
- 2.2 Literature review; Research question; Data base search, Sampling; Scale of measurement- Types of variables, nominal, ordinal

Unit III Research Design:

- 3.1 Study methodology- Randomized control; Cross-Section, Cohort studies; Factors responsible to select the design, Cost of research; Subjects & control group; confounding factors

Unit IV Data Statistics & Analyzing using SPSS

- 4.1 Normal distribution- skewness and kurtosis; Central tendency- Mean, Median & Mode; frequency distribution; variance and standard deviation, Graphic Presentations-Pie chart, Bar graph and others
- 4.2 Statistics- Independent t-Test; Paired sample test; Use of SPSS software; Research reporting.

References:

- 1. Research Methodology: Methods and Techniques by C R Kothari New Age.
- 2. Practical Research Methods by Dawson, Catherine, 2002, New Delhi, UBS Publishers' Distributors

Core Paper II: Physiology of Yoga- Credit 4

Unit- I Physiology of Asana

- 1.1 Scientific evidence of Asana- Article published in index journals,
- 1.2 Muscle physiology, Neuro-muscular control

Unit II Neurophysiology of Pranayama

- 2.1 Scientific evidence of different Pranayama- Article published in index journals
- 2.2 Mechanism of pranayama; Lung function; Study of brain function

Unit III Neurophysiology of Meditation

- 3.1 Scientific evidence of different meditation technique
- 3.2 Cognitive function, Mindfulness technique

Unit IV Scientific evidence of Yoga

- 4.1 Presenting different article published in peer reviewed index journal on yoga in seminars, Journal club
- 4.2 Pilot study of yoga

References:

- 1. MEDLINE data base- PubMed and others.
- 2. Principles of Anatomy and Physiology by Gerard J. Tortora, Bryan H. Derrickson

Core Paper III: Nutrition & Dietetics and Concept of Yogic Diet- Credit 3

Course Objectives: The course illustrates about the role of food and nutrition on health. It imparts knowledge about functions of carbohydrates, proteins, and minerals/ vitamins on health.

Outcomes: The course will support students in understanding basic knowledge

about the food quality and health effects. They will also learn about the role of water balance in maintaining the physiological state of the body.

Unit I Introduction to Food and Nutrition

- 1.1 Introduction of Food & Nutrition- Definition of food, nutrition, diet & nutrient. Carbohydrates; Proteins and amino acids; Lipids, Essential nutrients; Vitamins & Minerals; Water, acid-base balance, and Electrolytes; Malnutrition, Under nutrition; Balanced diet plan
- 1.2 Food groups- Vegetables and fruit; Fats & Oil; Nuts; Cereals & Pulses.

Unit II Metabolism of Food

- 2.1 Metabolism of Carbohydrates, Protein & Lipids; Catabolism, Anabolism
- 2.2 Required Daily Allowance; Basal Metabolic rate; Factors for energy requirement.

Unit-III Nutritional Components of Food

- 3.1 Micronutrient and Macro Nutrients
- 3.2 Functions of Food; Food planning.

Unit IV Yogic Diet

- 4.1 Definition of food according to yoga
- 4.2 Diet according to Bhagavat gita; hatha yoga

References:

- 1. Essentials of Foods and Nutrition by Swaminathan
- 2. Dietetics by Sri Lakshmi B
- 3. Hatha Yoga Pradeepika by Swami Muktibodhananda Saraswati

Allied paper 9: Nutrition in Sports and Fitness –Credits-3

Course Objectives: Through this course the students will be able to understand about the role of nutrition in physical fitness, the nutritional screening in sports persons and energy needs, nutritional requirements and fluid needs in sports persons, dietary support during and after exercise and dietary support for sport persons of various age groups

Course Outcomes: Enlightens knowledge on nutrition support during physical fitness and attain knowledge on nutritional screening and nutrients requirements for sport persons of various age groups.

Unit I. Effects of Physical fitness:

Physical fitness: Definition; benefits of physical activity Physiology of exercise: body physiology to exercise, Muscle contraction; adaptation of muscle Effect of physical exercise on cardiovascular and pulmonary system.

Unit II. Aerobic & Anaerobic metabolism during exercises:

Energy sources for muscle use- ATP, phosphocreatine, glucose, fat, and protein. Anaerobic metabolism during power exercises Aerobic metabolism during endurance exercises.

Unit III. Nutritional requirement in athletes: Athletes:

Weight and body composition of athletes. Nutritional assessment and counseling for athletes. *Nutritional requirement:* Effect of differential intakes of macro nutrients (CHO, protein, and fat) on the athletic endeavor. Nutrition needs of male, female, younger and older athletes.

Unit IV. Nutritional needs during power, speed, and endurance exercise

Nutritional needs and plans during power and speed exercise - before, during and after. Nutritional needs and plans during endurance exercise- before, during and after and Nutrition plan during combined power and endurance sports.

Unit V. Hydration:

Ergogenic aids on physical activity; Hydration strategies to optimize physical activity capacity, importance of timing the nutrient and fluid intake. Ergogenic aids: Effect of ergogenic aids and other substances on physical activity; Sports drinks for endurance activities; nutrition supplements available for athletes.

Reference Books:

1. Gordan.M.Wardlaw,Perspectives in Nutrition, fourth edition, Mc. Graw Hillcompanies.2015.
2. Antia. F.P. and Philip Abraham, Clinical dietetics and Nutrition, fourth edition, Oxford University Press. 2012.
3. Srilakshmi. B., Dietetics, seventh edition, New age international (P) Limited.2014.
4. L.Kathleen Mahan, Sylvia Escott-stump, Krause's Food, Nutrition and Diettherapy, ninth edition, W.B. Saunders company. 2015.
5. Don Benordot, Advanced sports nutrition, second edition, Human Kinetics,2012.

Elective paper 1: Importance of Veda - Credits-3

Unit I Introduction to Veda

- 1.1 Importance of Vedas
- 1.2 Types of Veda

Unit II Rig Veda & Sama Veda

Unit III Yajur Veda

Unit IV Atharva veda

Reference books

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

Elective paper 1: Introduction to AYUSH –Credits-3

Objective: To enable students to understand basic of AYUSH principles which is close to yoga principles.

Unit- I: Introduction to Basic Concepts of Ayurveda

- 1.1 Ahara, Vihara and Aunadhi (three pillars of Ayurveda); The four aspects of life; Panchamahabhutas (the five-element theory),
- 1.2 Concept of disease and health according to Ayurveda,

Unit-II: Introduction to Basic Concepts of Naturopathy

- 2.1 History of Naturopathy; Principles of Naturopathy.
- 2.2 Concept of five elements and its applications

Unit- III: Introduction to Basic concepts of Unani, Siddha and Homeopathy

- 3.1 History of Unani & Siddha; Concept of Unani & Siddha; Principles of Unani & Siddha.
- 3.2 Introduction to Basic concepts of Homeopathy; History of Homeopathy; Concept of homeopathy; Principles of Homeopathy.

CORE PRACTICAL: YOGA PRACTICAL- VI - Credits: 6

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:

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

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

- 2.1 Abdomen, Thoracic & Clavicular Breathing techniques, deep breathing technique, Hands stretch breathing (three forms), Hand In & out breathing, Ankle stretch breathing, Rabbit breathing & Tiger breathing.
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Unit III: Kriyas (Internal cleansing)

- 3.1 Neti : Jala Neti, Sutra Naeti
- 3.2 Dhauti : Vaman Dhauti & Vastra Dhauti & Kapalabhati
- 3.3 Trataka & Agnisara kriya
- 3.4 Nauli

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

4.1 Suryanamaskara (12 Series of asana), Variations of Suryanamsakara.

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4.5 Advance asanas

4.6 Relaxation technique- Shavasana, QRT, IRT, DRT

4.7 Teaching methodology practical: Communication skill, Precaution, Instruction, Demonstration, Correction of Yogic practices.

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