Ordinance No. V (63a)

MAHARISHI AUROBINDO SUBHARTI COLLEGE AND HOSPITAL OF NATUROPATHY AND YOGIC SCIENCES

SWAMI VIVEKANAND SUBHARTI UNIVERSITY

PROGRAM- BACHELOR OF NATUROPATHY AND YOGIC SCIENCES

CURRICULUM

Ordinance No. V (63a)

GENERAL:

- This ordinance may be called the "Ordinance Relating to BACHELOR OF NATUROPATHY AND YOGIC SCIENCES (B.N.Y.S.) Course.
- It shall come into force from academic session 2018-19.
- This supersedes the previous Ordinance relating to Bachelor of Naturopathy and Yogic Sciences Course [V- 63A].

1. INTRODUCTION

Maharishi Aurobindo Subharti College and Hospital of Naturopathy and Yogic Sciences (MASCHNYS) established in the year 2011 under Swami Vivekanand Subharti University, Meerut with the vision **to produce highly qualified skilled, trained, competent Naturopathy and Yoga Doctors.**

Mission to establish the MASCHNYS was specifically centralized to focus on:

- Providing quality education and skilled professionals
- To promote research and development in respective field
- To groom every student to be an excellent professional who follows principles of Naturopathy and Yoga.

BACHELOR OF NATUROPATHY AND YOGIC SCIENCES (B.N.Y.S.)

I. PROGRAMME OBJECTIVES:

1. Recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy;
2. Develop the skills in most of the competencies, and training that are required to deliver the Naturopathy and Yoga health care system;
3. Become aware of the contemporary advances and developments in the discipline concerned;
4. Acquire a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology;
5. Become proficient in their profession by developing scientific temper and improve educational experience;
6. Identify social, economic, environmental, biological and emotional determinants of health in a given case and take them into account while planning therapeutic, rehabilitative, preventive and promotion measures/strategies;
7. Plan and devise measures in Naturopathy and yoga for the prevention and rehabilitation of patients suffering from disease and disability;
8. Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation;

9. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations;
10. Play the assigned role in the implementation of national health programs, effectively and responsibly;
11. Organize and supervise the chosen/assigned health care services Demonstrating adequate managerial skills in the clinic/hospital or the field Situation;
12. Develop skills as a self-directed learner; recognize continuing educational needs, select and use
    appropriate learning resources;
13. Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature;
14. To implement all National health policies;
15. Work towards realization of 'Health for all', as a national goal through naturopathy and yoga;
16. To follow the medical ethics and to fulfill the social and professional responsibilities as
17. Be competent in the practice of holistic medicine with expert knowledge and experience in
    Health promotion, preventive, curative and rehabilitative aspects of diseases;
18. Become proficient in their profession by developing scientific temper and improve educational experience;

II PROGRAMME OUTCOME:

Students of BNYS Degree program at the time of graduation will be able to

PO.1 Knowledge &Understanding – Graduate should be able to assess the patients with the knowledge of basic medical sciences & correlate the physiological & pathological aspects of the disease & apply the knowledge & manage the disease by educating & making the concepts clear to patients or students.

PO.2 Skill &Training - Develop the skills in competencies, and training that are required to deliver naturopathy and yoga health care system to the masses. Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation. Organize and supervise the chosen/assigned health care services, demonstrate adequate managerial skills in the clinic/hospital or the field situation. Develop skills as a self-directed learner; recognize continuing educational needs, select and use appropriate learning resources.

PO.3 Self-Directed Approach &Social Relevance -Recognize the health needs of the community become aware of the contemporary advances and developments in the discipline concerned to healthcare through naturopathy &yoga. Thus, become proficient in their profession by developing scientific temper and improve educational experience.

PO.4 Human values- Plan and devise measures in naturopathy and yoga for the prevention and rehabilitation of patients suffering from disease and disability. in doing so demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

PO.5 Life-Long Learning- Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant

published research literature. Acquire a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology.

PO.6 Ethics -Carry out professional obligations ethically and in keeping with the objectives of the national health policies and to fulfill the social and professional responsibilities as a naturopathy and yoga physician through drugless therapies effectively and responsibly.

PO.7 Environment Friendly- Identify social, economic, environmental, biological and emotional determinants of health in a given case and take them into account while planning therapeutic, rehabilitative, and preventive and health promoting measures/strategies with sustainable approaches by educating the masses.

2. RULES AND REGULATIONS FOR ADMISSION IN B.N.Y.S.

ELIGIBILITY:

The eligibility for admission to B.N.Y.S. program is that a candidate must be 10+2 pass with 50% in PCB (45% for SC/ST) and direct admission through SNET/Merit/ or as per timely Govt. directives.

3. CURRICULUM/ STRUCTURE OF PROGRAMME OF BNYS

3.1 Duration

The program shall be spread over Five and half academic years, spread over four and half year comprising actual teaching for a minimum of 180 days in each year and Internship Training for 1 Year in the fifth year

3.2 The program focuses on the following aspects:

3.2.1.1 Competency
3.2.1.2 Entrepreneurship
3.2.1.3 Skill Enhancement
3.2.1.4 Value Added Courses
3.2.1.5 Extracurricular activities

3.3 Choice Based Credit System (CBCS):

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective/minor or skill-based courses. The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Therefore, it is necessary to introduce uniform grading system in the entire higher education in India. This will benefit the students to move across institutions within India to begin with and across countries. The uniform grading system will also enable potential employers in assessing the performance of the candidates. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations, the UGC has formulated the guidelines to be followed.

The curriculum offers a total of 60 courses out of which the student has to complete 60 courses and the total number of credits required for the award of BNYS degree is 209 credits. The courses are divided into 3 categories, i.e. Core courses, Ability Enhancement Courses and Skill Enhancement Courses.

1. Core Course: A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

2. Elective Course: Generally, a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

2.1 Discipline Specific Elective (DSE) Course: Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective (to be offered by main discipline/subject of study).

2.2 Dissertation/Project Work: An elective course of 49 credits designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and candidate studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project work. A Project/Dissertation work *may be* given in lieu of a discipline specific elective paper.

2.3 Generic Elective Course (GEC): An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure to other subjects/disciplines is called a Generic Elective Course.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

3. Ability Enhancement Courses: The Ability Enhancement (AE) Courses may be of two kinds: AE Compulsory Course (AECC) and Skill Enhancement Courses (SEC). AECC courses (two) are the courses based upon the content that leads to knowledge enhancement. They [(i) Environmental Science, (ii) English/MIL Communication] are *mandatory* for all disciplines. SEC courses (minimum two) are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

All core courses have a practical component, along with theory. Ability Enhancement courses are theory based and Skills Enhancement courses have theory with the practical component if required. However external practical evaluation is offered only for compulsory subjects.

Internship Training of 12 months is offered in the fifth year. The students are expected to train in Naturopathy and Yoga hospital and OPD, Medical Department OPD of Subharti hospital. The training will be as per the schedule mentioned in the curriculum. The students are expected to maintain a log book on a daily basis. At the end of the Internship training the student shall submit a Dissertation along with the log book and a performance appraisal from the hospital. The training report is to be prepared by the student and to be submitted to the Training and Placement Officer within the stipulated time for assessment.

3.4 The academic calendar shall be as follows:

I, II, III year	Session - 1st Aug. to 15thMay Exam – 1st June. to 5TH July
IV year	Session - 1st Aug. to 15th Jan. (18 months) Exam – 1st Feb. to 28th Feb
V Year	Internship Training- Apr. to Apr (12 months)

3.5: Table of BNYS Programme Structure under CBCS from the academic year 2018-19

COURSES	COURSE TYPE	COURSE CODE	CREDITS/ WK	HOURS/WK	MARKS	
FIRST YEAR						
Anatomy Paper 1	CORE COURSE	BNY 101	1.5	1.5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Anatomy Paper 2	CORE COURSE	BNY 102	1.5	1.5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Anatomy Practical	CORE COURSE	BNY 103P	0.5	1	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Physiology Paper 1	CORE COURSE	BNY 104	1.5	1.5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Physiology Paper 2	CORE COURSE	BNY 105	1.5	1.5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Physiology Practical	CORE COURSE	BNY 106P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester	30

					Examination (ESE)-Viva	
					Total	100
Biochemistry	CORE COURSE	BNY 107	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Biochemistry Practical	CORE COURSE	BNY 108P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Philosophy of Nature Cure - 1	CORE COURSE	BNY 109	6	6	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Philosophy of Nature Cure -2	CORE COURSE	BNY 110	4	4	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Philosophy of Nature Cure Practical	CORE COURSE	BNY 111P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Yoga Practices Theory	CORE COURSE	BNY 112	5	5	Continuous Comprehensive Assessment (CCA)	15
					End- Semester Examination (ESE)	50
					Total	65
Yoga Practical	CORE COURSE	BNY 113P	3	6	Continuous Comprehensive Assessment (CCA)	20
					End- Semester Examination (ESE)-Practical	10
					End- Semester Examination (ESE)-Viva	05
					Total	35
English Communication	ABILITY ENHANCEMENT	AEC- 01	1	1	Continuous Comprehensive Assessment (CCA)	15

	COURSE				End- Semester Examination (ESE)	35
					Total	50
English Communication-Practical	ABILITY ENHANCEMENT COURSE	AEC- 01P	1	1	Continuous Comprehensive Assessment (CCA)	15
					End- Semester Examination (ESE)	35
					Total	50
Sanskrit	CORE COURSE	BNY 114	1	1	Continuous Comprehensive Assessment (CCA)	20
					End- Semester Examination (ESE)	30
					Total	50
Environmental Sciences	ABILITY ENHANCEMENT COURSE	AEC-02	1	1	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Tutorials			0.5	1		
Total			**35**	**42**		**1450**
SECOND YEAR						
Pathology	CORE COURSES	BNY 201	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Pathology Practical	CORE COURSES	BNY 202P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Microbiology	CORE COURSES	BNY 203	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Microbiology Practical	CORE COURSES	BNY 204P	2	4	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30

					Total	100
Community Medicine	CORE COURSES	BNY 205	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Community Medicine Practical	CORE COURSES	BNY 206P	1.5	3	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Yoga Philosophy	CORE COURSES	BNY 207	2	2	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Yoga Practical	CORE COURSES	BNY 208P	3	6	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Chromotherapy and Magneto Therapy	CORE COURSES	BNY 209	4	4	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Chromotherapy and Magneto Therapy Practical	CORE COURSES	BNY 210P	2	4	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Tutorials			2	4		
Total			**24.5**	**38**		**1000**
Third Year						
Manipulative Therapeutics	CORE COURSE	BNY 301	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Manipulative	CORE COURSE	BNY	1	2	Continuous Comprehensive	10

Therapeutics Practical		302P			Assessment (CCA)	
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Acupuncture	CORE COURSE	BNY 303	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Acupuncture Practical	CORE COURSE	BNY 304P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Yoga Applications	CORE COURSE	BNY 305	5	5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Yoga Practical	CORE COURSE	BNY 306P	6	6	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Fasting Therapy	CORE COURSE	BNY 307	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Fasting Therapy Practical	CORE COURSE	BNY 308P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Naturopathy Diagnosis	CORE COURSE	BNY 309	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70

					Total	100
Naturopathy Diagnosis Practical	CORE COURSE	BNY 310P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Mordern Diagnosis	CORE COURSE	BNY 311	4	4	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Mordern Diagnosis Practical	CORE COURSE	BNY 312P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Techniques In Spa	SKILL ENHANCEMENT COURSE	BNY 313	1	1	Non exam subject	
Tutorials			0.5	1		
Total			**34.5**	**40**		**1200**
FOURTH YEAR						
Nutrition , Dietetics & Herbs	CORE COURSES	BNY 401	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Nutrition,Dietetics & Herbs Practical	CORE COURSES	BNY 402P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Obstretics and Gyanecology	CORE COURSES	BNY 403	5	5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Obstretics and Gyanecology Practical	CORE COURSES	BNY 404P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination	60

					(ESE)-Practical	
					End- Semester Examination (ESE)-Viva	30
					Total	100
Yoga Therapy	CORE COURSES	BNY 405	3	3	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Yoga Practical	CORE COURSES	BNY 406P	2	4	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Hydrotherapy Paper 1	CORE COURSES	BNY 407	2	2	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Hydrotherapy Paper 2	CORE COURSES	BNY 408	1	1	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Hydrotherapy Practical	CORE COURSES	BNY 409P	1	2	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Physiotherapy	CORE COURSES	BNY 410	1	1	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Physiotherapy Practical	CORE COURSES	BNY 411P	0.5	1	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Holistic Practices of	CORE COURSES	BNY	3	3	Continuous Comprehensive	30

Naturopathy and Yoga		412			Assessment (CCA)	
					End- Semester Examination (ESE)	70
					Total	100
Holistic Practices of Naturopathy and Yoga Practical	CORE COURSES	BNY 413P	0.5	1	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Hospital Management and Research Methodology	CORE COURSES	BNY 414	5	5	Continuous Comprehensive Assessment (CCA)	30
					End- Semester Examination (ESE)	70
					Total	100
Hospital Management and Research Methodology Practical	CORE COURSES	BNY 415P	0.5	1	Continuous Comprehensive Assessment (CCA)	10
					End- Semester Examination (ESE)-Practical	60
					End- Semester Examination (ESE)-Viva	30
					Total	100
Psychology And Basic Psychiatry	CORE COURSES	BNY 416	1	1	Continuous Comprehensive Assessment (CCA)	20
					End- Semester Examination (ESE)	50
					Total	70
Psychology And Basic Psychiatry Practical	CORE COURSES	BNY 417P	0.5	1	Continuous Comprehensive Assessment (CCA)	05
					End- Semester Examination (ESE)-Practical	15
					End- Semester Examination (ESE)-Viva	10
					Total	30
Professional Ethics	ABILITY ENHANCEMENT COURSE	BNY 418	1	1	Non exam subject	
Spa Management	SKILL ENHANCEMENT COURSE	BNY 419	1	1	Non exam subject	
Total			**33**	**40**		**1600**
INTERNSHIP						
Rotatory Internship			**49**	**49**	**Submission of Dissertaton Compulsory**	
TOTAL			**178**	**209**	**5250**	

3.6 List of all Courses under different categories for BNYS Programme

COURSE TYPE	COURSE CODE	COURSE NAME
CORE COURSES	Anatomy Paper 1	BNY 101
	Anatomy Paper 2	BNY 102
	Anatomy Practical	BNY 103P
	Physiology Paper 1	BNY 104
	Physiology Paper 2	BNY 105
	Physiology Practical	BNY 106P
	Biochemistry	BNY 107
	Biochemistry Practical	BNY 108P
	Philosophy of Nature Cure – 1	BNY 109
	Philosophy of Nature Cure -2	BNY 110
	Philosophy of Nature Cure Practical	BNY 111P
	Yoga Practices Theory	BNY 112
	Yoga Practical	BNY 113P
	Pathology	BNY 201
	Pathology Practical	BNY 202P
	Microbiology	BNY 203
	Microbiology Practical	BNY 204P
	Community Medicine	BNY 205
	Community Medicine Practical	BNY 206P
	Yoga Philosophy	BNY 207
	Yoga Practical	BNY 208P
	Chromotherapy and Magneto Therapy	BNY 209
	Chromotherapy and Magneto Therapy Practical	BNY 210P
	Manipulative Therapeutics	BNY 301
	Manipulative Therapeutics practical	BNY 302P
	Acupuncture	BNY 303
	Acupuncture Practical	BNY 304P
	Yoga Applications	BNY 305
	Yoga Practical	BNY 306P
	Fasting Therapy	BNY 307
	Fasting Therapy Practical	BNY 308P
	Naturopathy Diagnosis	BNY 309
	Naturopathy Diagnosis Practical	BNY 310P
	Mordern Diagnosis	BNY 311
	Mordern Diagnosis Practical	BNY 312P
	Nutrition, Dietetics, Herbs	BNY 401
	Nutrition, Dietetics, Herbs Practical	BNY 402P
	Obstretics and Gyanecology	BNY 403
	Obstretics and Gyanecology Practical	BNY 404P
	Yoga Therapy	BNY 405
	Yoga Practical	BNY 406P
	Hydrotherapy Paper 1	BNY 407
	Hydrotherapy Paper 2	BNY 408
	Hydrotherapy Practical	BNY 409P

	Physiotherapy	BNY 410
	Physiotherapy Practical	BNY 411P
	Holistic Practices of Naturopathy and Yoga	BNY 412
	Holistic Practices of Naturopathy and Yoga Practical	BNY 413P
	Hospital and Research Management Methodology	BNY 414
	Hospital and Research Management Methodology Practical	BNY 415P
	Psychology And Basic Psychiatry	BNY 416
	Psychology And Basic Psychiatry Practical	BNY 417P
ABILITY ENHANCEMENT COURSES	English Communication	AEC-01
	Sanskrit	BNY 114
	Environmental Sciences	AEC-02
	Human Values	HPEV-01
	Professional Ethics	BNY-418
SKILL ENHANCEMENT COURSES	Techniques in Spa	BNY 313
	Spa Management	BNY-419

3.7 INTERNSHIP:

Internship duration: 12 months.

Internship is a phase of training wherein a graduate student is expected to conduct actual practice of Naturopathic Modalities and acquire skills under the supervision of a competent faculty member so that he/she may become capable of working independently. A project work to be carried out by student individually.

Specific Objectives of Internship: At the end of the internship the student should be able to:

(i) Diagnose a disease and prescribe the right treatment.
(ii) Outline the planning requirements of such a service
(iii) Explain its organization and management.
(iv) Identify various management issues.

4. EXAMINATION AND EVALUATION

4.1 ATTENDANCE:

The students are expected to attend all the classes and should not have less than 75 % attendance in theory as well as in practical classes, wherever held, to become eligible to appear for the university examination. Short fall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the

short fall is more than 10% but not more than 15%, the Principal may recommend deserving cases to the Vice Chancellor for condonation. The order of the Vice Chancellor in this regard shall be final.

4.2 EXAMINATION:

All Courses offered by MASCHNYS under BNYS programme will have an evaluation system within two components as:

1. Continuous Comprehensive Assessment (CCA) accounting for 30% of the final grade that a student gets in a course, and
2. Annual Examination (AE) accounting for the remaining 70% of the final grade that the student gets in a course.

A student will have to pass both the components i.e. CCA and AE separately to become eligible to be declared successful in a course.

4.2.1.1 CONTINUOUS COMPREHENSIVE ASSESSMENT (CCA) :

Continuous Comprehensive Assessment (CCA) will be of **30 marks** comprising:

4.2.1.2 Internal Assessment written test including in-between snap tests if any, after every 3 months carrying 20 marks.

4.2.1.3 A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

85- 100% attendance	-	10 Marks
80- 84.99% attendance	-	9 Marks
75- 79.99% attendance	-	8 Marks
70 – 74.99 % attendance	-	7 Marks
65 – 69.99% attendance	-	5 Marks
60 – 64.99% attendance	-	3 Marks
51 - 59.99% attendance	-	2 Marks
50% attendance	-	1 Mark
Less than 50% attendance	-	0 Mark

4.2.2 ANNUAL EXAMINATION (AE)

The remaining 70% of the final grade of the student in a course will be assessed on the basis of an Annual Examination (AE) that will be for three hours duration and will cover the entire syllabus of the course.

The question papers for the AE will be got set by the Controller of Examinations (CoE) of the Swami Vivekanand Subharti University (SVSU) by a selected faculty panel.

4.2.3. ASSESSMENT OF INTERNSHIP

The Intern shall maintain the record of work, which is to be verified and certified by the Doctor under whom he/she works. A part from the scrutiny of the record of work, Dissertation an assessment and evaluation shall be done through taken by an objective approach using situation judgment and tests in

knowledge, skills and attitude at the end of training. Based on the record of work and the result of the assessment and evaluation, the HOD shall issue a certificate of "**Satisfactory Completion**" of training. **Satisfactory completion shall be determined on the basis of the following** –

1. Proficiency of knowledge required for Naturopathic Modalities.
2. Competency in skills expected to manage Naturopathy hospital.
3. Competency for performance.
4. Familiarity with procedures.
5. Inclination to undertake responsibility, Punctuality, involvement in Naturopathic Services and in procedures & follows up of reports.
6. Capacity to work as a team (behavior with colleagues including the Nursing assistants/staff and other medical and paramedical staff).
7. Participation in discussions and aptitude for research.
8. The entire course has to be completed within a maximum of seven (07) years from the date of original admission in the course.

4.3 PAPER SETTING

The work of setting the Annual examination papers and evaluation of scripts and conduct of the Annual practical examination shall be assigned to the course teachers as well as to outsiders, ordinarily in the ratio of 50:50 for internal and external valuation respectively.

4.4 RESULTS

The result shall be prepared at the end of each academic year of the course by aggregating the marks obtained in the theory and practical examinations of the course till date.

(a) A candidate shall be declared as passed at the end of an academic year if he/she secures minimum 50% marks in each theory & practical paper separately (including project reports and comprehensive viva) and 50% in aggregate.

(b) If a student obtained 50% marks in at least 50% of the papers (ignoring fractions) including project report, he/she will be provisionally promoted to the next year with carryover papers and will have to appear & obtain pass marks in carryover papers along with the subsequent supplementary/ regular examinations for the relevant year.

(c) If a candidate fails in only one head/subject and having passed in all other head/subject of the given examination of the year than his/her deficiency of maximum five (05) marks may be fulfilled by grace marks after fulfilling the conditions given below:

(A) If a candidate fails in only one head/subject and having passed in all other heads/subjects of the given examination of a **year**, then his/her deficiency of marks may be fulfilled by grace marks under the following conditions:-

(i) Grace marks are not a matter of right of the student but are the discretion of the University.

(ii) Provided that the candidate has appeared in the main examination of the concerned course and falls short of pass marks by not more than five (05) marks in theory paper only. Benefit of above mentioned shall not be given to the candidate who had appeared in supplementary/special examination/carry over examination.

(iii) Further, benefit of grace marks may be given only to the candidate who will pass the entire concerned examination of the **year** after awarding the grace marks and not for the purpose of promoting the student to next year with back papers or for improvement of division or percentage.

(iv) If in a head/subject of an examination passing in Theory, Practical or sessional exams separately is mandatory, then the benefit of grace marks shall be given only in Theory examination of the University examination.

(v) The award of grace marks permissible shall be on the basis of 1 grace mark for every 05 marks secured by an examinee over and above the minimum passing aggregate marks of all subjects of the year.

(B) Awarding of Grace Marks shall be done as given below:-

Aggregate Marks Obtained over & above minimum passing marks	Permissible Grace Marks
1-5	1
6-10	2
11-15	3
16-20	4
21-25	5

(i) Total number of Grace Marks given to the student will be marked with asterisk (*) at the bottom of the mark sheet.

(d) A student not covered by clause (a) to (c) above shall have the following options to complete his/her course -

(i) He/ she may take admission on payment of full annual course fee and repeat the entire year of study. He /She shall be treated as a regular student.

Or

(ii) He /She may pay only University exam fee for the Supplementary Examination and appear in the University Supplementary Examination directly. He /She shall not be allowed to attend classes and the Sessional marks obtained earlier shall be retained.

Or

(iii) He /She may pay half of the annual course fee and attend classes. The sessional marks obtained by him/her earlier shall be retained. There will not be any requirement of minimum attendance for

appearing in the University examination

(e) A student will not be promoted to the next academic year if the carryover papers are more than 50% at one point of time.

5. EVALUATION UNDER GRADING ASSESSMENT

The minimum Grade/ Grade Point required to pass each paper in Annual examination under CBCS shall be Grade D/ Grade Point 4 in each theory paper/ Practical/Project (wherever applicable) in External Examination and Internal Assessment separately.

5.1 CALCULATION CRITERIA:

To implement the following grading system, the colleges/campuses shall use the following UGC recommended 10 point grading system:

Marks (%)	Letter Grades	Grade Points (G)
90-100	A++ (Outstanding)	10
80 to <90	A+ (Excellent)	9
75 to < 80	A (Very Good)	8
70 to <75	B+ (Good)	7
65 to <70	B (Above Average)	6
60 to <65	C (Average)	5
50 to <60	D (Pass)	4
0 to <50	F (Fail)	0
	AB (Absent)	0

5.2 COMPUTATION OF SGPA AND CGPA

(Si)= £ (Ci x Gi)/ £ Ci, where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

CGPA=£(Ci x Si) / £ Ci where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

6. POWER TO MODIFY

In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorized to modify the Ordinance, Subject to subsequent ratification by the Executive Council.

SYLLABUS

PROGRAM OUTCOMES

Students of BNYS Degree program at the time of graduation will be able to

PO.1 Knowledge &Understanding – Graduate should be able to assess the patients with the knowledge of basic medical sciences & correlate the physiological & pathological aspects of the disease & apply the knowledge & manage the disease by educating & making the concepts clear to patients or students.

PO.2 Skill &Training - Develop the skills in competencies, and training that are required to deliver naturopathy and yoga health care system to the masses. Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation. Organize and supervise the chosen/assigned health care services, demonstrate adequate managerial skills in the clinic/hospital or the field situation. Develop skills as a self-directed learner; recognize continuing educational needs, select and use appropriate learning resources.

PO.3 Self-Directed Approach &Social Relevance -Recognize the health needs of the community become aware of the contemporary advances and developments in the discipline concerned to healthcare through naturopathy &yoga. Thus, become proficient in their profession by developing scientific temper and improve educational experience.

PO.4 Human values- Plan and devise measures in naturopathy and yoga for the prevention and rehabilitation of patients suffering from disease and disability. in doing so demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

PO.5 Life-Long Learning- Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature. Acquire a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology.

PO.6 Ethics -Carry out professional obligations ethically and in keeping with the objectives of the national health policies and to fulfill the social and professional responsibilities as a naturopathy and yoga physician through drugless therapies effectively and responsibly.

PO.7 Environment Friendly- Identify social, economic, environmental, biological and emotional determinants of health in a given case and take them into account while planning therapeutic, rehabilitative, and preventive and health promoting measures/strategies with sustainable approaches by educating the masses.

1st YEAR BNYS
DURATION- ONE YEAR

S.No	Subject	Theory	Practical
1	Anatomy –I	BNY-101	BNY-103P
2	Anatomy –II	BNY-102	
3	Physiology – I	BNY-104	BNY-106P
4	Physiology – II	BNY-105	
5	English Communication	AEC-01	AEC-01P
6	Biochemistry	BNY-107	BNY-108P
7	Philosophy of Nature Cure – I	BNY-109	BNY-111P
8	Philosophy of Nature Cure – II	BNY-110	
9	Yoga Practices	BNY-112	BNY-113P
10	Sanskrit	BNY-114	
11	Environmental Sciences	AEC-02	

1. HUMAN ANATOMY

Course type- Core Course

Course code – BNY-101, BNY-102, BNY-103P

Credits- 3.5

Objective:-

It aims at giving inclusive knowledge of the gross and microscopic structure and development of human body to provide a basis for assessing the correlation of organs and structures and anatomical basis for disease presentations.

Theory

1. General anatomy in brief :
   -basic tissues of body.
   -terminology and nomenclature
2. Elements of anatomy in brief:
   -osteology
   -arthrology
   -myology
   -neurology
3. Regional anatomy:
   -upper limb, lower limb
   -thorax - including diaphragm
   -head, neck -brain and spinal cord in brief
4. Embryology (gen.embryology) in brief:
   - development of individual organs and systems
5. Histology:
   - general histology, micro-anatomy of individual organs and system.
6. Applied anatomy

Anatomy Paper-1.

Course content (related regional anatomy, histology, embryology, myology, arthrology & osteology of upper limb, head, neck & brain and microanatomy)

Theory

I. General anatomy:

Introduction of anatomy, anatomical terms, different branches of anatomy, introduction of bones, its classification, functions, applied anatomy; joints-types, actions, applied anatomy; cartilage-types, action, applied anatomy, basics of all the tissues and systems of the human body.

II. Osteology :(bones of skull & upper limb)

Names of the bones and their positions; general features, skull - all normal and interior of skull & mandible.

III. Muscular system :(head & neck and upper limb)

Origin, insertion, nerve supply and action of the muscles with the applied anatomy and clinical testing.

IV. Arthrology: (head & neck, upper limb)

General features of different types of joints. Brief study of the following joints of the body with movements; Shoulder, elbow, wrist and other smaller joints of head & neck, upper limb.

V. Head, neck and brain

Head and neck- introduction, scalp, face and lacrimal apparatus, sides of the neck, sub occipital triangle, contents of vertebral canal (brief), meningeal layer, cavernous sinuses and other sinuses in brief, hypophysis cerebri, trigeminal ganglion, middle meningeal artery, contents of the orbit, triangles of the neck, ansa cervicalis, parotid gland, otic ganglion, submandibular gland, sublingual gland, thyroid gland, parathyroid gland, thymus, blood supply of deep structure, cervical ganglion, cervical plexus, styloid apparatus, oral cavity, palate, pharynx, auditory tube, nasal septum, paranasal sinuses, cartilage of larynx

Parts of nervous system, meninges, ventricles , motor and sensory pathways, cranial nerve, motor and sensory cortex and their blood supply with cross sectional studies in brief morphology of spinal cord. Section of medulla - pyramidal decussation, sensory decussation, upper part of medulla, pons -mid level, midbrain-mid superior colliculus, inferior colliculus, cerebellum-horizontal- mid saggital section, horizontal section at interventicular formation, coronal section at anterior commissure, coronal section at mammillary body. Sensory organs (region wise)-gross anatomy of eyeball, ear, nose and tongue in brief, blood brain barrier.

VI. Upper limb

An introduction, breast, clavipectrol fascia, axilla, lumbar triangle, triangle of auscultation, bursa of upper limb, musculotendinous cuff, intermuscular spaces, cubital fossa, synovial sheath, retinaculum of hand, palmar aponeurosis, spaces of hand, anatomical snuffbox.

Vii. Micro anatomy- 12 general topics, 15 systemic topics (separate list attached)

1. Study of microscopes and artifacts.

2. General histology, study of the basic tissues of the body, functional correlation of the structural components of the organs.
3. Systemic histology of concerned organs.

Course outcome

After completion of the program, the student must be able to:

1. Illustrate normal human anatomy clinically important inter-relationship and functional anatomy of bodily structures;
2. Understand histological structures of various tissues and organs and co- relate structure and function in order to understand diseased states;
3. Correlate basic structure and connections of the central nervous system,
4. Explain developmental basis of variations and abnormalities with respect to sequential development of organs and systems, teratogens, genetic mutations and environmental hazards.
5. Demonstrate and identify body structures including topography of living body;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

Anatomy Paper – 2

Course content (related regional anatomy, histology, embryology , myology, arthrology & osteology of upper limb, head, neck & brain and microanatomy)

I. Thorax

General introduction

Pericardium, thorax wall, position and parts of the heart, conducting system, blood supply and nerve supply of the heart , names of the blood vessels and their distribution in the body , lungs & pleura-general features, surface markings, broncho pulmonary segments , applied anatomy , mediastinum , diaphragm, oesophagus, thoracic duct.

II. Abdomen and Pelvis

Peritoneum- general disposition - horizontal and vertical, parts relation, blood supply, nerve supply of abdominal organs. Pelvic organs-parts position, relation, blood supply, nerve supply.

III. Lower Limb

Deep fascia-modifications, saphaneous veins, lymph nodes, adductor canal muscles-nerve supply, blood supply, action, joints, arches of foot, joints of lower limb.

IV. Embryology in brief:

Definition of embryology , brief account of male and female, ovary; definition of gamete; sperm, ovum, gametogenesis, migration of primordial germ cells into gonadal ridge; structure of sperms growth of ovarian follicles, ovarian and uterine cycles. Principle of family planning (contraception),in-vitro fertilization (for integrated teaching). Systemic embryology(brief): development of the individual organ of digestive system, genital system, urinary system, respiratory system, cardiovascular system, nervous system, special sensory organs (in brief) endocrine glands and mammary gland. Development abnormalities in brief.

Course outcome-

After completion of the program, the student must be able to:

1. Illustrate normal human anatomy clinically important inter-relationship and functional anatomy of bodily structures;
2. Correlate histological structures of various tissues and organs and co-relate structure and function in order to understand diseased states;
3. Deduce basic structure and connections of the abdomen, thorax, lower limb
4. Describe developmental basis of variations and abnormalities with respect to sequential development of organs and systems, teratogens, genetic mutations and environmental hazards.
5. Identify gross congenital anomalies and be familiar with the principles of karyotyping;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

Anatomy Practical

Total time: 32-34 weeks.

Gross anatomy: (dissection / demonstration of following parts of body)

Upper limb: dissection: pectoral, scapular, shoulder, arm, and forearm (5 weeks Prosected parts: joints, palm and dorsum of hand.

Thorax: dissection: chest wall, mediastinum, lungs and heart.

Abdomen: dissection: anterior abdominal wall and inguinal region, viscera and posterior abdominal wall.

Pelvis: dissection: pelvic viscera and blood vessels and nerve sagittal section (m &f) (2 weeks) prosected parts: sole of the foot and joints.

Head and neck: dissection: scalp, superficial and dissection of face and neck (8 wks to 10 wks). Prosected parts: orbit, eyeball, submandibular region, temporal and infra temporal fossa, cranial cavity, naso and oropharyngeal regions, ear, larynx and pharynx. Cross sections at c-4, c-6 levels. Sagittal section of head and neck.

Nervous system: section of brain and prosected specimens and major functional areas, gross structure of brain and spinal cord and study of gross sections as mentioned earlier (in brief).

Demonstrations:

- bones-as described in osteology section.
- brain and spinal cord.

Specific skills: students should learn the following skills

1. To localize important pulsations and the structure against which pressure can be applied in case of bleeding & trauma of particular artery.
2. To elicit superficial and deep reflexes.
3. To demonstrate muscle testing and movements at joints.
4. To locate for: lumbar puncture, sternal puncture, pericardial tapping, and liver biopsy.
5. To locate veins for venous puncture.
6. To locate the site for emergency such as tracheotomy.

Histology

General histology

1. Microscope
2. Cell
3. Epithelial tissue i
4. Epithelial tissue ii
5. Connective tissue-bones and cartilages
6. Muscular tissues
7. Nerve tissues (ts & ls of peripheral nerve, sensory & sympathetic ganglion,optic Nerve)
8. Epithelial glands (serous, mucous and mixed salivary gland)
9. Circulatory system (large artery, medium sized artery, larger vein)
10. Lymphatic system (lymph nodes, thymus , tonsils , spleen)
11. Skin & appendages.
12. Placenta & umbilical cord.

Systemic histology

i. Respiratory system.
ii. Oesophagus & stomach.
iii. Liver, gall bladder, pancreas.
iv. Urinary system i (kidney)

v. Urinary system ii (ureter, bladder, urethra).
vi. Small & large intestine
vii. Reproductive system-female
viii. Reproductive system-male

ix. Upper GIT (lip, tongue)
x. Hypophysis cerebri, thyroid and suprarenal glands.
xi. Eye - cornea and retina.

Course Outcome

After completion of the program, the student must be able to:

1. Illustrate histological structures of various tissues and organs and co- relate structure and function in order to understand diseased states;
2. Deduce basic structure and connections of the central nervous system, understand the regulation and integration of various organs and systems and be skilled in locating lesion sites according to deficits in diseased states;
3. Describe developmental basis of variations and abnormalities with respect to sequential development of organs and systems, teratogens, genetic mutations and environmental hazards.
4. Identify body structures including topography of living body;

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text books

1	Text Book Of Anatomy (Vo L-I, II, III)	By B.D.Chaurasia
2	Text Book Of Anatomy	By Hamilton
3	Practical Anatomy	By Cunningham
4	Human Embryology	By Inderbir Singh

References:

1	Text Book Of Anatomy	By Gray
2	Atlas Of Histology	By Diforie
3	Atlas Of Histology	By Poddar
4	Text Book Of Human Histology	By Dr. Veena Bharihoke
5	Cannigham's Text Book Of Anatomy	By Cunningham
6	Balley's Text Book of Histology	By Balley
7	Medical Embryology	By Langman
8	A Color Atlas Of Human Anatomy	By Mcminn
9	Grant's Method of Anatomy	By Grant
10	Regional & Applied Anatomy	By R.J. Last

2. PHYSIOLOGY

Course type- Core Course

Course code – BNY-104, BNY-105, BNY-106P

Credits- 4

Objective

The objective of teaching Physiology to undergraduate students is aimed at giving the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate comprehension of the physiological basis of health and disease.

THEORY

Physiology paper - 1

I. GENERAL PHYSIOLOGY

1. Cell structure
2. Sub-cellular units
3. Cell membranes and their properties
4. Transport mechanisms
5. Bioelectrical potentials
6. Body fluids and homeostasis

II. BLOOD – Physical properties, composition and functions of blood.

1. Plasma proteins
   a) Normal values
   b) Origin and methods of separation
   c) Functions and variations in health and disease.
2. Bone marrow
   a) Formed elements
   b) Composition and functions
3. Erythrocytes
   a) Morphology and variations in health and diseases
   b) Development of erythrocytes
   c) Site and stages in development
   d) Necessary factors
   e) Regulation of development of erythrocytes
   f) Life-span and fate of erythrocytes
   g) Erythrocytes sedimentation rate (ESR)
4. Haemoglobin
   a) Structure, synthesis, function and metabolism
   b) Types of hemoglobin
5. Anaemia – Definition and classification
   1. Jaundice – Definition and classification
      a) Role and function of spleen
   2. Leucocytes
      a) Classification, morphology, development and functions.
      b) Variation in health and disease.

3. Thrombocytes
   a) Origin, morphology and functions
   b) Variation in health and disease
4. Haemostasis
   a) Mechanism of haemostasis, coagulation of blood
   b) Fate of clot and disorders of clotting
5. Anticoagulants
   a) Mechanism of action and clinical applications
6. Blood groups
   a) Classification
   b) ABO and RH system
   c) Blood transfusion, indication and hazards
7. Lymph and tissue fluids
   a) Lymph and reticular system
   b) Fluid compartments and Water Balance
   c) Principles of immune system
   d) Cellular and humoral immunity

III - CARDIO-VASCULAR SYSTEM

Historical perspective and organization of cardiovascular system

1. Heart
   a) Structure and properties of cardiac muscle
   b) Cardiac metabolism
   c) Enervation of heart, junction tissue of heart
   d) Regeneration and spread of cardiac impulse
2. Electrocardiography
   a) Enthovan's Law
   b) Various ECG leads, normal ECG and its interpretation
   c) Cardiac arrhythmias and heart block
   d) Cardiac vector
3. Cardiac cycle
   a) Pressure and volume change (mechanical events)
   b) Heart sound and stethoscopy
   c) Principle of echo-cardiography
   d) Measurement and regulation of cardiac output.
4. Heart sounds
   a) Description, causation and relation to other events in cardiac cycle
   b) Clinical significance of heart sounds
5. Blood pressure
   a) Definition, regulation and factors influencing B.P.
   b) Measurement of blood pressure
   c) Physiology of haemorrhage and shock
6. Circulation
   a) Blood vessels
   b) Physical principle of blood flow, regulation of blood flow
   c) Jugular venous pulse tracing, radial pulse tracing
   d) Coronary, cerebral, renal and pulmonary circulation
   e) Splanchnic, cutaneous and capillary circulation.

IV.RESPIRATORY SYSTEM

Introduction, internal and external respiration, physiological anatomy of respiratory system.

1. Mechanics of respiration
    a) Inspiration and expiration
    b) Role of respiratory muscles and thoracic cage
    c) Pressure and volume change during respiration
    d) Work of breathing, lung compliance and its significance in health and diseases.
2. Lung volumes and capacities
    a) Lung volumes and capacities and their measurements
    b) Respiratory minute volume and maximum voluntary ventilation
3. Alveolar ventilation Composition of atmospheric, inspired, alveolar and expired air
4. Pulmonary circulation
    a) Pulmonary circulation, ventilation-perfusion relationship
    b) Diffusion of gases across pulmonary membrane
    c) Oxygen uptake, transport and delivery
    d) Carbon-dioxide uptake, transport and delivery
5. Organization of the respiratory centers
    a) Nervous and chemical regulation of respiration.
    b) Classification and characteristics of hypoxia, cyanosis, asphyxia, hypercapnea, hypocapnea, dyspnoea, apnoea and orthopnea and periodic breathing.
    c) Respiratory aspects of high altitude
    d) Physiology of acclimatization and hyperbarrism
    e) Respiratory / pulmonary function tests
    f) Non-respiratory functions of lungs
    g) Artificial respiration.

V. DIGESTIVE SYSTEM

1. Introduction, organization and plan of digestive system.
2. Saliva.
    a) Composition, functions, regulation of secretion
    b) Methods of study of above aspects of saliva
3. Stomach
    a) Functions of stomach
    b) Composition and functions of gastric juice
    c) Regulation of secretion and mechanism of HCL secretion
    d) Gastric emptying time and its regulation
    e) Methods of study of gastric function and its applied aspect.
4. Pancreas
    a) Composition and functions of pancreatic juice
    b) Regulation of pancreatic secretion
    c) Methods of study of pancreatic secretion
5. Liver
    a) Function, formation, storage and emptying of bile
    b) Composition, function and regulation of release of bile
    c) Entero-hepatic circulation
    d) Tests for liver functions

6. Small intestine
   e) Succus entericus
   f) Composition, function and mechanism of secretions

7. Large intestine
   a) Functions
8. Gastro-intestinal Hormones
   a) Release and functions

9. Gastro-intestinal movements
   a) Mastication, deglutition and vomiting
   b) Movements of stomach and small intestines
   c) Movements of large intestine and defecation.
   d) Regulation of movements and methods of study
10. Digestion and adsorption of carbohydrates, fats, proteins and vitamins, minerals and water.

COURSE OUTCOME-

After completion of the program, the student will be able to:

1. Illustrate the normal functioning of all the organ systems and their interactions for well co- ordinated body function;
2. Correlate the relative contribution of each organ system to the homeostasis;
3. Describe the physiological aspects of normal growth and development;
4. Analyze the physiological response and adaptations to environmental stresses;
5. Classify physiological principles underlying pathogenesis and disease management.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PHYSIOLOGY PAPER- 2

VI. EXCRETORY SYSTEM

1. General introduction organs of excretion with special emphasis on evolution of excretory mechanisms.
2. Renal system-functional anatomy and renal circulation
3. Nephron
   a) Mechanism of urine formation, glomerular filtration, tubular function
   b) Concentration and acidification of urine
   c) Composition of normal urine, and abnormal constituents of urine
   d) Renal function tests
4. Non-excretory functions of kidney
   a. Physiology of micturition and its abnormalities.
   b. Skin-Structure and functions.

VII. ENDOCRINE SYSTEM

1. Introduction-hormones, evolutionary back-ground and organization of endocrine control systems
2. Methods of study
   a) Classification of hormones and mechanism of hormonal action
   b) Regulation of hormone secretion and feed-back system.
3. Hypothalamohypoph system
   a) Releasing hormones.
4. Active principles
   a) Chemical nature, biosynthesis, role of action.
   b) Control of secretion, excretion and its aspect.
   c) Clinical study of their hypo-and hyper function.
   d) Laboratory diagnosis of pituitary (anterior and posterior) gland, thyroid, parathyroid, adrenal cortex and medulla and islets of langerhans.

VIII. REPRODUCTIVE SYSTEM

1. Physiology of reproduction
   a) Introduction to physiology of reproduction
   b) Sex determination and sex differentiation and chromosomal study
2. Male reproductive system
   a) Growth, development and structure of testes
   b) Gonadotropins and gonadal hormones
   c) Functions of testes and spermatogenesis
   d) Composition of semen
3. Female reproductive system
   a) Ovary, gonadotropins
   b) Structure of ovary and corpus luteum
   c) Function of ovary, ovarian hormones
   d) Physiology of menstruation cycle and physiology of pregnancy
   e) Physiology of placenta, gestation and parturition

f) Physiological basic of tests for ovulation and pregnancy

4. Physiology of lactation

IX. NERVE MUSCLE PHYSIOLOGY

1. Neurons
   a) Morphology and measures of excitability
   b) Classification and properties of nerve fibers
2. Muscle
   a) Types of muscles and their properties and morphology
   b) Neuro-muscular junction, excitation-contraction coupling
   c) Myasthenia gravis
   d) Starlings law and its applications.

X. CENTRAL NERVOUS SYSTEM

1. Structural and functional organization of central nervous system
2. Neuron
   a) Neuroglia, functional types of neurons
3. Cerebro-spinal fluid
   a) Formation, circulation, functions of CSF
   b) Methods of collection and clinical significance of CSF.
4. Synapse
   a) Types of synapses and their structure
   b) Sympathetic transmission
   c) General properties of neuro-transmitters.
5. Sensory Physiology
   a) Classification and general properties of receptors
   b) Sensory modalities and stereognosis.
6. Reflexes
   a) Reflex and general properties of reflexes (with examples)
7. Ascending tracts
   a) Origin, course, termination and functions
   b) Specific reference to pain pathway and physiology of pain
8. Organization of motor systems
   a) Pyramidal and extra-pyramidal system
   b) Upper and lower motor neurons and their lesions
   c) Brown-sequard syndrome
   d) Syringomyelia
9. Cerebellum
   a) Functional anatomy, connections and functions.
   b) Effects of lesions and tests for cerebellar function
10. Basal ganglion
    a) Functional anatomy, connections and functions
    b) Diseases of basal ganglion and its clinical evaluation
11. Vestibular apparatus
    a) Functions anatomy, connections and functions
    b) Effects of lesions and their assessment
    c) Physiology of maintenance and regulation of muscle tone, posture and

equilibrium
   d) Decerebrated rigidity and righting reflexes
12. Thalamus
   a) Functional anatomy, connections and functions
   b) Effects of lesions of thalamus
13. Hypothalamus
   a) Functional anatomy, connections and functions
   b) Effects of lesions of hypothalamus
14. Body temperature regulation
   a) Normal body temperature, pyrexia and hypothermia
15. Cerebral cortex
   a) Functional anatomy
   b) Methods of study of cortical functions
16. Limbic system
   a) Functional anatomy, connections and functions
   b) EEG, Physiology of sleep and wakefulness
17. Higher functions
   a) Learning, speech, memory, behaviour and emotions

XI. AUTONOMIC NERVOUS SYSTEM

1. Sympathetic nervous system
2. Parasympathetic nervous system

XII. SPECIAL SENSE

1. Smell
   a) Physiology of olfaction and olfactory discrimination
   b) Olfactory pathway and defects of olfaction
2. Receptors, primary taste sensation and taste pathway
3. Vision
   a) Functional anatomy of eye, extra and intra-occular muscles
   b) Errors of refraction and their correction, visual acuity
   c) Physiology of aqueous humour
   d) Cornea, lens, intraoccular pressure, accommodation
   e) Retina, rhodopsin cycle, dark and light adaptation
   f) Visual pathway and effects of lesions in visual pathways
   g) Field of vision, perimetry, binocular vision
   h) Iris and papillary reflexes
   i) Colour vision, colour blindness and tests for colour blindness
   j) Formation and circulation of tears, lacrimal glands
4. Hearing
   a) Functional anatomy of ear, function of external ear
   b) Physiological functions of middle ear
   c) Impedence matching and tympanic reflex
   d) Functional anatomy of internal ear, cochlea, organ of corti
   e) Auditory pathway and auditory cortex
   f) Frequency analysis, sound localization, defects of hearing
   g) Audiometry, tests for conduction defects, Aphasia

Note: For the purpose of written Theory examination, the syllabus is divided as follows:

Theory Paper-I

Section-A: Consisting of chapters on General physiology, Blood, Cardio-vascular system, Respiratory system and Digestive system.

Theory Paper- II

Section-B: Consisting of chapters on excretory system, Endocrine system, Reproductive system (male and female), Nerve muscle physiology, Central nervous system, Autonomic nervous system and Special senses.

COURSE OUTCOME

After completion of the program, the student will be able to:

1. Explain the normal functioning of all the organ systems and their interactions for well co- ordinated body function;
2. Correlate the relative contribution of each organ system to the homeostasis;
3. Describe the physiological aspects of normal growth and development;
4. Illustrate the physiological response and adaptations to environmental stresses;
5. Analyse physiological principles underlying pathogenesis and disease management.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal A	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PHYSIOLOGY PRACTICAL

I. HAEMATOLOGY EXPERIMENTS

1. Collection of blood, study of fresh drop of blood, effects of isotonic, hyper tonic and hypo tonic saline on RBCs
2. Enumeration of RBCs (RBS count)
3. Estimation of haemoglobin
4. Packed cell volume (PCV) and blood indices
5. Determination of Erythrocyte sedimentation rate (ESR)
6. Enumeration of WBC (Total count)
7. Differential WBC count (Differential count)
8. Determination of clotting time and bleeding time
9. Enumeration of platelets (Platelet count)

II. HUMAN PHYSIOLOGY EXPERIMENTS

1. Recording of blood pressure in human beings and study the effects of exercise on blood pressure
2. Electrocardiography (Demonstrations)
3. Clinical examination of CVS and radial pulse
4. Determination of tidal volume, inspiratory reserve volume, expiratory reserve volume, inspiratory capacity, expiratory volume (All experiments are to be arranged for demonstration)
5. Stethoscopy, normal body temperature and its physiological variation
6. Pulse, respiration and temperature chart with correlation
7. Clinical examination of respiratory system
8. Plethysmography (Demonstration)
9. Clinical examination of CNS
   a) Motor functions
   b) Sensory functions
   c) Cranial nerves
   d) Reflexes superficial and deep
10. Determination of vital capacity and maximum ventilator volume with spirometry (Demonstration)

Note - The above 10 human physiology experiments are to be conducted with demonstration as a joint venture by physiologists and the clinical faculty, if necessary.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Recommended text books for physiology

1	Text book of Medical physiology	A.C. Guyton
2	Review of Medical physiology	W.F. Ganong
3	Concise text book of Medical physiology	S.K. Choudhary
4	Understanding Medical physiology	Bijlani
5	Essentials of Medical Physiology	Sembulingam

Reference books

1	Best and Taylor's physiology basis of medical practice	
2	Practical physiology	Ghai
3	Practical physiology	Ranade

COURSE OUTCOME

After completion of the program, the student will be able to:

1. Conduct experiments designed to study physiological phenomena;
2. Interpret experimental/investigative data;
3. Differentiate between normal and abnormal data from results of tests, which he/she has done and observed in the laboratory.
4. Demonstrate the practicals efficiently.

3. BIOCHEMISTRY

Course type- Core Course
Course code – BNY-107, BNY-108P
Credits- 4

Objective:

The objectives of introducing biochemistry to the undergraduate students is to make them understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge in solving clinical problems.

BIOCHEMISTRY THEORY

1. Introduction and Prospects.
2. Hydrogen ion concentration, acids, bases, buffers, Hendarson - Haselbasch Equation.
3. Principles of calorimetry, Paper chromatography and Electrophoresis.
4. Amino Acids - Classification, structure, properties and side chainsof amino acids.
5. Peptides - Biological importance of peptides structure of Insulin.
6. Proteins - Definition, Biological importance, classification and properties, structure of proteins, coagulation and denaturation ofproteins,
7. Elementary aspects of the structure of collagen, Myoglobin and Hemoglobin.
8. Enzymes - Definition, classification, specificity, coenzymes, co-factors and activators diagnostic importance of enzymes and iso-enzymes.
9. Carbohydrates - Definition, classification and biological importance of Monosaccharides-classfication, properties and stereoisomerism, oligosaccharides-importance of Disaccharides.
10. Polysaccharides - Functions.
11. Lipids - Definition, classification and biological importance.
    - Simple lipids: Composition of triglycerol, Waxes.
    - Compound lipids: Functions of fatty acids - Properties of saturated and unsaturated fatty acids.
12. Nucleic acids -Definition, classification, composition and biological importance of nucleic acids, purines and pyrimidine bases. "Structure of DNA Structure, function and types of RNA.
13. Vitamins -Definition and classification. Brief account of source, biochemical function deficiency diseases. Vitamin antagonist Hypervitaminosis.
14. Minerals - Calcium, Phosphorous, iron, copper, zinc, magnesium, manganese, lead, mercury arsenic and metal toxicity fluorine and iodine.
15. Cell and subcellular structures: Cell membrane, its composition, function of subcellular structures, transport across cell membrane, Active and facilitated diffusion.
16. Metabolism - Digestion and absorption of carbohydrates, lipids, proteins and nucleic acids.
17. Carbohydrate Metabolism -Glycogenesis, glycogenolysis and kreb"s cycle, glycolysis, pyruvate oxidation citric acid cycle, Gluconeogenesis, Metabolism of Fructose and Galactose, regulation of metabolic pathways, disorders of carbohydrate metabolism, regulation of blood sugar, glucose tolerance test, diabetes mellitus.
18. Biological oxidation - Oxidative phosphorylation.
19. Lipid Metabolism -Lipogenesis, synthesis of fatty acids, de-saturation, Phospholipids, Bio-synthesis of lecithine, Cephalin and utilisation of Ketone bodies, Ketosis, synthesis and utilisation of ketone bodies, Ketosis, synthesis and breakdown of cholesterol, disorders of lipid metabolism, outlines and formation and functions of prostaglandins and leucotrienes, fatty liver and lipotropic factors.

20. Metabolism of proteins and amino acids - Breakdown of tissue proteins, amino acids pool, general metabolism of amino acids, disposal of ammonia, urea cycle formation of glutamate and glutamine, disorders of amino acid metabolism.
21. Purine and Pyrimidine metabolism-Outline of synthesis and breakdown of purine and pyrimidine, Disorders of metabolism of purine and pyrimidine.
22. Biochemical genetics and protein synthesis - Replication, transcription, reverse transcription viruses, oncogenes, post transcription modification.
23. Biochemistry of blood - Outline of synthesis and degradation of heme, Function of Haemoglobin, abnormal haemoglobin, Jaundice, importance , functions and separation of plasma proteins, Functions of immunoglobulins , regulation of PH of blood, role of kidney and lungs in maintaining PH ofblood, acidosis and Alkalosis.
24. Liver function - Liver Function tests, Detoxification mechanisms.
25. Kidney Function Tests - Composition of Urine, Urea clearance and creatinine clearance.
26. Energy metabolism (BMR) - Basal metabolic rate and its importance, calorific values of blood, unbalanced diet, protein energy malnutrition (PEM), Essential fatty acids, dietary habits and diseases, biochemistry of starvation.
27. Electrolytes and water metabolism

COURSE OUTCOME-

After completion of the course, the student shall be able to:

1. Explain the molecular and functional organization of a cell and list its sub cellular components;
2. Correlate the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
3. Illustrate digestion and assimilation of nutrients and consequences of malnutrition;
4. Explain biochemical basis of inherited disorders with their associated sequelae;
5. Describe mechanisms involved in maintenance of body fluid and pH homeostasis;
6. Analyse the molecular mechanisms of gene expression andregulation, the principles of genetic engineering and their application in medicine

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

Biochemistry Practical

SECTION – I

1. Indicators
2. Reactions of monosaccharides - Glucose and fructose
3. Reactions of disaccharides - Lactose, Maltose and Sucrose
4. Reactions of polysaccharides - Starch and dextrin
5. Reactions of Proteins - albumin, casein, gelatin
6. Coagulation and Precipitation and reactions of Proteins.
7. Reactions of Non Protein Nitrogen (NPN) - Urea, Uric acid and creatinine.
8. Analysis of Milk
9. Normal Constituents of urine
10. Analysis of abnormal urine.

SECTION –II

1. Determination of a. Blood Sugar b. Blood urea c. Total serum protein d. Total serum calcium e. Total serum cholesterol f. Total serum billirubin
2. Determination of
   a. Sugar in CSF
   b. Proteins is CSF
   c. Chlorides in CSF
3. Determination of albumin and urea in urine
4. Determination of SGOT and SGPT
5. Demonstration of principles of
   a. Calorimetry and calorimeter
   b. Paper chromatography
   c. Electrophoresis
   d. Glucose Tolerance Test (GTT)
   e. Flame photometry.

COURSE OUTCOME

At the end of the course, the student will be able to:

1. Demonstrate conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
2. Analyse and interpret investigative data;
3. Demonstrate the skills of solving scientific and clinical problems and decision making.
4. The integrated knowledge of biochemistry will help the students to integrate molecular events with the structure and function of the human body in health and disease.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Note:

1. Section - I of practical shall be conducted by students in biochemistry laboratory.
2. Section - II of practical shall be conducted by teaching staff as a part of demonstration / seminar in the laboratory.

Recommended Text books For Biochemistry

1	Text book of Biochemistry	Ramkrishna, Prasanna and Rajan
2	Biochemistry for medical students	Debajyothi Das.
3	Text book of Biochemistry	Rama Rao.
4	Text Book of Biochemistry	Sathyanarayan.

Reference Books

1	Harper"s review of physiological chemistry	By Harper
2	Text Book of Biochemistry	By Lubert Stryer
3	Biochemistry	By Albert Lehninger.
4	Text book of Biochemistry	By West & Todd
5	Laboratory manual of Biochemistry	By Pattabhiraman & Acharya
6	Laboratory manual of Biochemistry	By Rajgopal & Ramkrishanan

4. PHILOSOPHY OF NATURE CURE

Course type- Core Course
Course code – BNY-109, BNY-110, BNY-111P
Credits- 11

Objectives:

The objectives of introducing philosophy of Naturopathy to the undergraduate students is to make them understand philosophical basis of the system of Naturopathy, including concepts of health, causes and pathogenesis of disease and brief introduction to the various therapeutic modalities used in Naturopathy.

THEORY
PNC PAPER -1

1. The evolution of the human body.
2. Philosophy of the body, mind, soul, life, spirit and spiritual body.
3. Composition of the human body, according to Ayurveda, Naturopathy, Yoga, Modern Medicine & Homeopathy.
4. History and Fundamental (Basic) principles of Naturopathy.
5. Comparative study of the Naturopathy with other systems of Medicine.
6. Ayurvedic Approach towards Naturopathy.
7. Homeopathy: introduction, history, principle, case taking, dilution factors, commonly used homeopathy medicine.
8. Philosophy of Indian Naturopaths:-

a) Vegiraj Krishnamraju	b) Dr. Kulranjan Mukherjee
c) Vinoba Bhave.	d) Dr. Bhojraj Chhabaria
e) Mahatma Gandhi.	f) Sant Hirdaram Sahibji
g) Dr. S.J. Singh	h) Dr. Laxmi Narayan Choudhary
i) Dr. J.M.Jussawala	j) Dr. Hira Lal
k) Dr. Vittal Das Modi	l) Dr. K. Laxman Sharma
m) Dr. B.Venkat Rao	n) Dr. Janaki Sharan Verma
o) Dr. Dinsha K. Mehta	p) Dr. Ganga Prasad Goud Nahar
q) Dr. Sharan Prasad	r) Sohanlal Nishkam Karmyogi
s) Dr. Khushiram Dilkash	t) Dr.Keki R.Sidhwa
u) Seth Dharamchand Saravagi	v) Dr.M.M. Bhamgara
w) Sukhbir Singh Ravat"	x) Jai Narayan Jaiswal
y) Krishna Swaroop Shrotriya	z) Dr. Moolraj Anand

9 Philosophy of Foreign Naturopaths

1. Aesculapius	2. Hippocrates
3. The School of S alerno.	4. Paracelsus
5. Vincent Priessnitz.	6. Sebastian Kneipp.
7. Arnold Rickli.	8. Louis Kuhne.
9. Adolf Just.	10. John H. Tilden.
11. Sigmund Freud.	12. Henry Lindlahr.
13. Bernarr Macfadden	14. Bernard Jenson
15. Arnold Ehret	16. Edwin Babbit
17. Herbert M. Shelton	18. J.H. Kellog M.D.

19. Benedict Lust
20. Dr. Dean Ornish
21. Dr. Paavo Airola
22. Dr. Paul C. Bragg
23. Dr. Hereward Carrington
24. Aterhov
25. John Wesley
26. Sylvester Graham
27. Dr. Max Gerson M.D.
28. Dr. Harry Benjamin
29. Edward Hook Dewey
30. Issac Jenning M.D.
31. Dr. Stanley Lief
32. Silas Weir Mitchell
33. Dr. R.T.Trall M.D.

10. Laws of Nature:
    - Pancha Maha Bhutas.
    - Shareera Dharmas - Ahara, Nidra, Bhaya, Maithuna.
    - Inflammation and its different stages.
    - Natural rejuvenations.
    - Violations of Laws of Nature resulting in diseases
    - Dictum of Cure i) Remove the root cause ii) Eliminate the toxin iii) Supplement of the vital Nutrients iv) Conservation of the vital energy or nerve energy.
11. Catechism of Nature Cure
12. Swasthya Vritam :
    a. Dinacharya. B. Ratricharya.
    c. Ritucharya. D. Vegadharanam
13. Unity of disease, unity of cure and way of treatment.
14. How Nature Cures?
15. Foreign matter and Toxins accumulation in the body and its importance in elimination through different ways of channels. (Toxemia / Foreign Matter Theory).
16. How to acquire Natural immunity in diseases.
17. Difference between functional and organic diseases.
18. Materia Hygienica
    a) Importance of Physical & Mental Hygiene
    b) Revolution & Evolution of Hygiene
    c) Hygiene not a cure
    d) Hygienic care of the sick
    e) Applications of Hygiene
    f) Medicine & the Hygiene contrasted
    g) Women & Hygiene
    h) Hygienists
    i) Future of Hygiene

19. The Philosophy of Life:-
    a) The Primordial Requisites of Life (Basic Needs of Living)
    b) The Laws of life.
    c) Mystery of life
    d) Life's Engineering
    e) Safeguards of life.
    f) How long can we live (Increase of average length of life), Are You Shortening Your Life? Why Live Long?
20. The Philosophy of Health
    a) Health Standards
    b) Health & its Conditions

c) Ancient Man Was Healthier Than We Are.
d) Positive Habits
e) Vital Economy
f) Divine science of Health.
g) Nine Doctors at your Command.
h) Health Destroyer (Tea, Coffee, Salt, Sugar, Tobacco Chewing, Smoking, Alcohol, Non-Veg(Animal Food), Excess Fat & Oil, Negative Thinking & attitude etc.)
i) The Secret of Health - Storing Energy & Enzymes
j) Internal Symbiosis
k) Your Body: Do- it Yourself Repair Shop

21. Body"s Protective Mechanism
    a) Digestion: First Line of Defense against Disease.
    b) The Liver: Second Line of Defense against Disease.
    c) The Endocrine Glands: Third Line of Defense against Disease.
22. Food as Medicine

    a) Super Nutrition from Sprouts.
    b) Food is The Magic Healer.
    c) Let Food Be Your Medicine – Body As A Self Healer
    d) Wheat Grass Miracles
    e) The Hippocrates Diet
    f) Salt Eating
    g) Stimulant Delusion
23. Preventive Medicine:
    a) Prevention of Disease
    b) Prevention of Epidemics
24. Natural Ways of Care:
    a) Keeping Your Body Clean:-(Colon,Liver, Lungs, Kidneys & Skin).
    b) Care of the Colon, Teeth, Eyes, Ears, Hairs, Feet & Skin.
    c) Care of the Glands & Emotional Control
    d) Care of the Orifices of the Body.

25. The Philosophy of Disease in Nature Cure:
    a) The Essential Nature of Disease
    b) The Occasions for Disease
    c) The Suppression of Disease
    d) Is Disease Friend or Foe?
    e) The Rationale of Fever
    f) Disease has Many Faces
    g) You under the Doctor"s Eye
    h) Fallacy of Diagnosis
    i) Iatrogenic Diseases
    j) Physiological Compensation.

26. The Cure Core In Nature Cure:-
    a. Living Matter Cures Itself.
    b. Reform Vs. Cure
    c. The Delusion of Cure
    d. To Cure The Incurable.
    e. Rest Cure

27. The Hidden Truth about Drugs:-
    a) Biodynamics Vs. Pharmacodynamics
    b) Evils of Drug Medication
    c) Drug Indulgences
    d) Fallacy of Pharmacology
    e) Fallacy of Cure
    f) Drug cannot Heal You.
    g) Suppression Vs. Elimination
    h) Druglessness.
28. The Science of Recovery:-
    a. Convalescene- Gradual Recovery of Vigor
    b. Conditions of Recovery & Time factor in Recovery.
    c. The Tragedy of Irreversibility.
29. The New Human Redumption.
30. Toxic Acid Crystals Cement your Body.
31. Philosophy of Death:
    a) Life & Death
    b) Why Death, The Biological Way
    c) How to Prolong Life & Postpone death
    d) The Causes of Death
    e) The Signs Of Old Age
    f) Phenomena of Death
    g) The Fear of Death.

COURSE OUTCOME-

After completion of the course, the student shall be able to:

1. Illustrate the history of Naturopathy including major contributors to the field and their work;
2. Correlate the evolution and composition of the human body according to different schools of medicine such as Naturopathy, *Yoga, Ayurveda*, Homeopathy, Modern Medicine, etc.
3. Concepts of health and disease according to Naturopathy
4. Classify and Correlate Ten basic principles of Naturopathy
5. Describe Foreign matter, toxin accumulation, theory of Toxemia, Unity of disease and Unity of Cure.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PNC PAPER –II

1. Properties of Water, Mud, Air and Sunlight.
2. Health is positive and disease is Negative.
3. Basic concepts in Nutrition and balanced diet.
4. Role of diet in nature cure and yoga(Satvic, Tamsic, Rajsic)
5. Outlines on a) Regular Habits for health b) Rest and Relaxation c) Live Food- Natural Raw diet d) Fasting e) Exercises.
6. Fundamentals of Ayurveda
7. Fundamental of Siddha
8. Fundamentals of Homeopathy
9. Fundamentals of Unani
10. Fundamentals of Allopathy
11. The Diagnostic Procedures in Naturopathy & their Diagnostic Values :
    a. Facial Diagnosis- The Science Of Facial Expression
    b. Iridiagnosis
    c. Chromo-Diagnosis
    d. Spinal Analysis.
    e. Arogya-Rakshaka Panchatantras and Their Importance In Restoration
    , Maintenance Of Health And Prevention Of Diseases.
12. Treatment Modalities in Nature Cure (in brief) :
    a. Enema - Colon Flushing
    -Colon Hydrotherapy.
    b. Hydrotherapy:
        1. Hip Bath
        2. Spinal Bath
        3. Spinal Spray
        4. Foot Bath
        5. Arm Bath
        6. Contrast Arm & Foot Bath
        7. Steam Bath
        8. Sauna Bath
        9. Packs
        10. Full Wet Sheet Pack
        11. Jacuzzi
        12. Sitz Bath
        13. Full Immersion Bath
        14. Under Water Massage
        15. Douches
        16. Cold Circular Jet bath
        17. Whirlpool Bath
        18. Gastro Hepatic PackKidney Pack
        19. Oxygen Bath
    c. Mud Therapy:

i) Mud Packs ii) Mud Bath.

d. Chromotherapy:- Colour Treatment
    i. Heat, Light, Ultra-violet and Infra red rays
    ii. Chromothermolium.
    iii. Heliotherapy
    iv. Sun Bath
    v. Athapa-Snana(Banana Leaf Bath)
    vi. Air-therapy
e. Air Bath
f. Ozone Bath
g. Magnetotherapy
h. Massage Therapy
i. Aroma Therapy
j. Chiropractice
k. Osteopathy
l. Physiotherapy
m. Nutrition & Dietetics.

13. Crises and their Management.
14. Sleep- Repose.
15. Toxins and anti-toxins, their generation & mitigation in nature cure way.
16. Vaccinations and inoculation, their ill effects on the human mind and body.
17. Old age problems and natural rejuvenation.
18. Family planning by Natural therapeutics.

COURSE OUTCOME-

After completion of the course, the student shall be able to:

1. Explain the history of Naturopathy including major contributors to the field and their work;
2. Correlate the evolution and composition of the human body according to different schools of medicine such as Naturopathy, *Yoga, Ayurveda*, Homeopathy, Modern Medicine, etc.
3. Analyze naturopathic viewpoints of concepts like hygiene, vaccination, family planning, personal life and prevention of diseases, geriatrics, etc, and implement them in his/her practice
4. Analyse Principles behind using the diagnostic procedures of Naturopathy, like spinal diagnosis, facial diagnosis, iris diagnosis, and chromo diagnosis.
5. Demonstrate knowledge of recent advances and research in Naturopathy principles/theories.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PNC PRACTICALS

a. Students should be introduced to various treatment procedures used in Naturopathy.
b. Students should have knowledge of giving various treatments.
c. Demonstration of :a) Natural Diet (Live food). b) Satvic boiled diet. c) Way of serving & various special diets.
d. Practicals with record. v. Visiting to various nature cure clinics/ hospitals.

COURSE OUTCOME-

After completion of the course, the student shall be able to:

1. Understand Principles behind using the diagnostic procedures of Naturopathy, like spinal diagnosis, facial diagnosis, iris diagnosis, and chromo diagnosis.
2. Demonstrate knowledge of recent advances and research in Naturopathy principles/theories.
3. Demonstrate basic knowledge of the various therapeutic modalities utilised in Naturopathy;
4. Describe the various principles of Naturopathy with respect to the body, health, disease and therapy, diagnosis and management

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text Books—

	Book Name	Authors
1	Philosophy of Nature Cure	By Henry Lindlahr.
2	Practice of Nature Cure	By Henry Lindlahr
3	Human culture and Cure	By Dr. E.D. Babbit
4	Practical Nature Cure -By Dr. K. Laxman Sharma.	By Dr. K. Laxman Sharma.
5	History and Philosophy of Nature Cure	By S.J.Singh
6	My Nature Cure	By M.K. Gandhi
7	Natural health care- A to Z	By Belinda Gram
8	Introduction to Natural Hygiene	By Herbert M. Shelton
9	A Complete Handbook of Nature Cure	By H.K. Bakhr
10	Nature Cure - a way of life	By S.R. Jindal
11	The cure of advance cancer y Diet Therapy	Dr Max Gerson M.D
12	Toxemia	Tilden J.H

13	Books by Dr kulranjan Mukherjee.	Dainandin rogo ki Prakartik Chikitsa Purane rogo ki Grah Chikitsa Stri rogo ki Grah Chikitsa Shishu rogo ki Grah Chikitsa Abhinav Prakartik Chikitsa Khadya ki nayi Vidhi
14	Books by Dr Bhojraj Chhabaria	Swasthya ke liye Bhojan Bina dava Tandurusti Swasthya avam Sudaulata
15	How to get well	Dr. Paavo Airola
16	The Encyclopedia of health & Physical Culture	Dr. Bernarr Macfadden
17	My water cure	Father Sebastian Kneipp
18	The New Science of Healing	Louis Kuhne
19	Return to Nature	Adolf Just
20	Diet Reform Simplified	Dr. Stanley Lief
21	Rational Fasting	Dr. Arnold Ehret
22	The Human Culture and Cure	Edwin Babbit
23	Rogo ki Achook Chikitsa	Dr. Janaki Sharan Verma
24	The Greatest Health Discovery	American Natural Hygiene Society
25	The History of Natural Hygiene	Hereward Carrington.
26	Principles of Natural Hygiene	Herbert M.Shelton
27	Health For All	H.M.Shelton
28	Integrated Healing Arts	Dr. J.M.Jussawala
29	Prakratik Chikitsa Sagar	Dr.Gaurishankar Mishra
30	Speaking of Nature Cure	K.Laxmana Sharma &S.Swaminathan
31	Human Life-its Philosophy & Laws	Herbert M.Shelton
32	How to Get Rid of The Poisons in Your Body	Gary Null & Steven Null
33	Let"s Get Well	Adelle Davis
34	Be your Own Doctor	Ann Wigmore Reference Books
35	My Nature Cure or Practical Naturopathy	By S.J. Singh
36	The Science of facial expression	By Louis Kuhne
37	The Story of my experiment with truth	BY M.K. Gandhi
38	Ayurveda for Health and long life	By Dr. R.K. Garde
39	Everybody's guide to Nature Cure	By Harry Benjamin
40	Prayer	By M.K. Gandhi
41	Diet and Diet Reforms	By M.K. Gandhi
42	Panchatantra	By Venkat Rao
43	Healing from within A. Nature Cure B.	By J.M. Jussawala
44	Miracle of fasting	By Dr. Paavo Airola
45	Raw eating	By Aterhov & By HiraLal
46	Vitality fasting &Nutrition	By Hereward Carrington
47	Death Deferred	By Hereward Carrington

48	Natural Nutrition of Man	By Hereward Carrington
49	Mucousless diet healing System	By Arnold Ehret
50	Natural Hygiene -Pristine way of life	By Herbert M. Shelton
51	Better Sight without glasses	By Harry Benjami
52	Swasthavritta vijyana	By R.H. Singh
53	Fundamentals of Ayurveda	By K.N. Udupa
54	Arogya Prakash	By Ramnarayan Vaidya
55	Chikitsa Tatva Dipika	By Vaidya Mahaveer Prasad Pandey
56	Padarth Vijanam	By Ram Prakash Pathak
57	Gem of Siddha Medicine	By Dr. Ram Murthy
58	Living life to Live it Longer	By Herbert M.Shelton
59	Eating for Health with Emphasis on Economy	By L.Ramachandran
60	Hand Book of Naturopathy	By Sukhbir Singh
61	Healing Through Natural Foods	By H. K. Bakhru
62	The Human Body: Nature‟s Amazing Creation	By Dr. M.M. Bhamgara.

5. YOGA PRACTICES

Course type- Core Course

Course code – BNY-112, BNY-113P

Credits- 8

Objective:

The objective of teaching *Yoga* to undergraduate students is to familiarize them with basic principles of *Yoga* with respect to history, definitions, philosophy and practices of *Yoga*, with emphasis of *AshtangaYoga*.

THEORY

1. Different definition of yoga, its philosophy & origin.
2. Fundamental outlines of Astanga Yoga.
    a) Yama
    b) Niyama
    c) Asanas : Shirshasana, Vajrasana, Supta Vajrasana Paschimottanasana, Baddha Padmasana, Trikonasana , Ardhakati and Kati Chakrasana, Padahastasana, shavasana,
    d) Pranayama-Suryabhedana, Ujjayi, Bhastrika, Sheetkari, Sheetali, Bhramari, Murcha, Plavini.
    e) Prathyahara
    f) Dharana
    g) Dhyana
    h) Samadhi
3. Kriyas
    I) Neti –Jal
    II) Sutra
    III) Ghrita
    IV) Dhouti-Vamana, Vastra Danda
    V) Nauli-Madhya Dakshina & Vamna
    VI) Trataka Bindu Jyoti
    VII) Kapalabhati
4. Rules & regulations to be followed for practising asanas, difference between exercise and asanas.
5. The life sketches, philosophy of Socrates, Plato, Aristotle, Adisankaracharya, Ramanujan, Maharshi Dayananda Saraswati, Ramakrishna Paramahansa, Swami Vivekananda, Swami Kuvalyanada, Ramana Maharshi, A.C. Bhakti vedanta Prabhupada, Jiddu Krishna Murthy, Shirdi Saibaba, Buddha, Mahavir, Shri Aurabindo, Sant Hirdaram Sahibji, Swami Lilashah, Sant Kanwarram.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Explain the various definitions of *Yoga*, history of *Yoga* and branches of *Yoga* ;
2. Describe kinds of*Yogasanas,* its importance, methods, rules, regulations and limitations;
3. Illustrate the various limbs of *AshtangaYoga*;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	15
End- Semester Examination (ESE)(Final Exams)	50
Total	65

Yoga Practices Practical

Asanas, Kriyas, Pranayama, Dharana, Dhyana-Meditation Practicals with records.

Asanas

A. Standing Postures

1. Tadasana
2. Ardhakati Chakrasana
3. Padahastasana
4. Ardha Chakrasana „
5. Kati Chakrasana
6. Trikonsana

B. Supine Postures

1. Shavasana
2. Matsyasana
3. Sarvangasana
4. Halasana
5. Chakrasana
6. Pavanmuktasan

C. Prone Postures

1. Makarasana
2. Bhujangasana
3. Ardha Shalabhasana
4. Shalabhasana
5. Dhanurasana

D. Sitting Postures

1. Vakrasana
2. Ardhamatsyendrasana
3. Paschimottanasana
4. Ustrasana
5. Vajrasana
6. Padmasana
7. Baddha Padmasana
8. Supta Vajrasana

Pranayama

1. Kapalbhati
2. Bhastrika
3. Sheetakari
4. Sheetali
5. Anuloma Viloma
6. Ujjayi
7. Bhramari

Kriyas

1. Neti - Jala - Sutra
2. Dhouti - Vaman
3. Nauli - Dakshina - Madhya
4. Trataka - Jyoti
5. Kapalbhati

COURSE OUTCOME

`After the completion of the course, the student shall be able to:

1. Demonstrate knowledge of *pranayamas*, *prana* and lifestyle, breathing and lifespan.
2. Demonstrate various types of *Yogasanas* in their correct method of performance;
3. Demonstrate different *pranayamas*.
4. Explain about the definitions, origin, branches of *Yoga.*

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	20 marks
End- Semester Examination (ESE)-Practical	10 marks
End- Semester Examination (ESE)-Viva	05 marks
Total	35 marks

Reference Books

1	Sukshma Vyayama	Swami Dhirendra Brahmachari
2	Basis and definitions of Yoga	Vivekananda Kendra
3	RajaYoga	Swami Vivekananda.
4	Asanas	Swami Kuvalyananda
5	Glimpses of Divine Light	S.K. Das
6	The Gospel of Buddha	Parul Caruso
7	The Gospel of Sri Ramakrishna	Mahendranatha Gupta
8	Complete works of sri Aurobindo	Sri Aurobindo
9	Asanas, Pranayama, Mudras & Bandhas	Swami Satyananda Saraswati,
10	Yoga in Daily life	Dr. A.U. Rahman
11	Yoga- The science of Holistic living	VKS yoga
12	Yogasana Vigyan	Swami Dhirendra Brahmachari

6. SANSKRIT

Course Type –Ability Enhancement Compulsory Course,
Course Code- BNY-114
Credits: 1

Objective:

The objective of teaching *Sanskrit* to undergraduate students is to provide a comprehensive knowledge of *Sanskrit* in order to be able to study, understand, comprehend and utilise the knowledge contained in Indian traditional texts in their professional practice, **especially in the field of *Yoga*.**

Theory

Basic Orientation

Knowledge of Devanagari script - alphabet, i.e. vowels, consonant vowel combination, two consonant combinations, special conjunct consonants and their pronunciation associated with their articulation.

Chapter 1

Verb roots, nine forms for three persons and three numbers; practice all the verb roots and their forms for correct pronunciation; usage of prefixes and how they change the meaning of the verb root and how to find them in the dictionary.

Chapter 2

Noun, masculine and neuter genders; 8 cases and their possible meanings; 24 forms of a noun and its declensions; practice of other similar declensions and usage of the 24 forms of a noun. Introduction to write a sentence; syntax, prepositions and their definite requirements of cases; rule how „ra/sha‟ changes dental „n‟ to cerebral „N‟ and its exceptions for this rule; repeat declensions for pronunciation.

Chapter 3

Noun- feminine gender; both ā ending and i-ending and practice of similar declensions. Practice of writing sentences with words mainly in feminine gender; exercises mainly for the feminine gender illustration; special declensions where dental „n‟ changes to cerebral „N‟; repeat all feminine noun declensions.

Chapter 4

Madhurashtakam illustrating all the three genders of nouns and study of the adjectives, having all the three genders and changing according to the gender of different qualified nouns; Midterm examination.

Chapter 5

Ex 32-38 ; models of declensions; how to recognize a gender or find the gender using the dictionary and write declensions of new words according to their models of declensions, while applying the rule changing dental „n‟ to cerebral „N‟; making simple sentences for all the words given there; repeat vowel- ending model declensions.

Chapter 6

Exercises for appropriate use of the cases; irregular verbs; absence of verb root “to have” in Sanskrit; where to *om*it root „AS‟ (to be), use of certain special verbs; repeat model declensions.

Chapter 7

Pronouns: Introduction to pronouns; declensions of pronouns; corresponding translations of pronouns into English; forming sentences with pronouns; Different aspects of pronouns being used as demonstrative pronouns and as interrogative pronouns and details of distance specification.

Chapter 8

Sandhi explanation; three major kinds of Sandhi: Vowel- Sandhi, Visarga-Sandhi and Consonant- Sandhi, and fifteen exercises.

Parasmaipadi (P) and *Atmanepadi* (A) forms of verbs;

Verb and ten *Ganas*; how to find the *Gana* using the *Apte* Samskrta - English Dictionary

Verb and ten *Lakaras*; mastering five *Lakāras* of both *Parasmaipadi* and *Atmanepadi* and doing the pertaining exercises for that.

Chapter 9

Vaidhyakeeyasubhashitasahityam:

1. *Ragarogya vijnanam*
2. *Vyayama vijnanam*
3. *Prana yama vijnanam*
4. *Madhyagunadosha vijnanam.*

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	20
End- Semester Examination (ESE)(Final Exams)	30
Total	50

Text Books

1. 1. Dr. Sarasvati Mohan, Samskrta Level-2, Samskrta Academy Dr. Sarasvati Mohan, Samskrta-English-Samskrta Dictionary, Samskrta Academy.
2. 2. Dr. Sarasvati Mohan, Samskrta Level-3, Samskrta Academy VamanSivaram Apte, Samskrta-English Dictionary,Samskrita Academy

Reference Books:

Samskrtabhasadipika, Sri Surasaraswati Sabha (R) Sringeri, Bangalore, 2003.

7. English Communication

Course Type – Ability Enhancement Compulsory Course,
Course Code- AEC-01
Credits: 1

Objective

The purpose of commencing English communication skills course is to develop in students fundamental communication skills being integral to personal, social and professional interactions. One of the significant associations among human beings is the ability to share thoughts, emotions and ideas through various means of communication: both verbal and non- verbal. The present course hopes to address most of these aspects through an interactive approach of teaching learning process; focusing on various dimensions of communication skills. The course also focuses on enhancing the ability to handle casual and formed satiations in terms of personal and intellectual grooming.

SYLLABUS

Module 01 – Self Introduction

- Introducing self
- Speaking about achievements
- Voicing future aspects

Module 02 – Non verbal Communication

- Body Language
- Paralanguage skills

Module 03 – Manners and Etiquettes

- Personal grooming
- Dress code
- Telephone etiquettes
- Intellectual grooming

Module 04 – Conversation in Real life situations

- Meeting people,
- Traveling
- Visiting Places
- Shopping

Module 05 – Public Speaking skills

- Extempore
- Role Play
- Group Discussion

Module 06 – Practical Assessment

- Presentations

COURSE OUTCOMES:

1. Projecting the first impression
2. Use simple forms of polite expressions to establish basic social contact and to perform everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc.
3. Students learn to use general, social and professional language.
4. Polishing manners to behave appropriately in social and professional circles.
5. Handling difficulty situations with grace style and professionalism.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	15
End- Semester Examination (ESE)(Final Exams)	35
Total	50

Books Recommended:

1	An introduction to Professional English and Soft Skills	By B. K. Das et al., Cambridge University Press
2	Technical Communication: Principles and Practice, Second Edition	by Meenakshi Raman and Sangeeta Sharma, Oxford Publications
3	Effective Technical Communication	by M Ashraf Rizvi, The McGraw-Hill companies
4	Understanding Body Language	by Alan Pease
5	Communicative Grammar of English	by Geoffrey Leech and Ian Svartik
6	Better English Pronunciation	by J.D.O‟Connor
7	English Grammar	by Wren and Martin.
8	Strengthen Your English	M.Bhaskaran and D.Horsburgh,Oxford

8. COURSE NAME: ENVIRONMENTAL STUDIES
COURSE TYPE: ABILITY ENHANCEMENT COMPULSORY
COURSE CODE: AEC-02
CREDITS -1

OBJECTIVES:

1. Understanding of major concepts in environmental sciences and creating the awareness about environmental problems amongpeople;
2. Recognize the interconnectedness of multiple factorsin environmental challenges;
3. Imparting basic knowledge about the environment and its allied problems to develop an attitude of concern for the environment in respect to environment protection and environment improvement;
4. Motivating students to participate in Develop analytical skills, critical thinking, in identifying and solving environmental problems.

UNITS

Unit 1: Concept of Environment (3 Hrs)

Definition and concept of environment; Types and components of environment (Lithosphere, Atmosphere, Hydrosphere, Biosphere); Scope and multidisciplinary nature of the subject; Man-environment relationships.

Unit 2: Ecology and Ecosystems (7 Hrs)

Concepts of Ecology: Subdivisions of ecology; Ecological factors - climatic, edaphic, physiographic and biotic; Concept of Biological clock; physiological adaptation of Hydrophytes, Xerophytes, mesophytes; Ecological Succession and classification (hydrosere, xerosere, mesosere etc.).

Structure and Functions of Ecosystem; a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries); Trophic Levels; Ecological Pyramids; food chains and food webs; Energy flow in an ecosystem; Ecological Interactions; Ecotone; Habitat; Ecological Niche; Resilience.

Unit 3: Environmental Pollution and Global Environmental Issues (6 Hrs)

Environmental pollution: types, causes, effects and controls; Air, water, soil, noise, thermal and radioactive pollution; Solid waste management: Control measures of urban and industrial waste, special reference e-waste, biomedical waste; Climate change; global warming; ozone layer depletion; acid rain and its impacts on human communities and agriculture; Case studies on Pollution Tragedies: Love canal, Bhopal Gas, Endosulfan and Minamata; International Agreements: IPCC, Montreal and Kyoto protocol.

Unit 4: Natural Resource Management and Biodiversity Conservation (8 Hrs)

Renewable and non-renewable energy resources, use of alternate energy resources, Water resources: sources, usage, over-exploitation and sustainable management of water resources; Conflicts over water (international & inter-state); Land resources: land use change, land degradation, soil erosion and desertification; Forest Resources: types of forest in India, importance of forests, deforestation, Disaster management: floods, earthquake, cyclones and landslides. Conservation of biodiversity: *In-situ and Ex-situ* conservation of biodiversity; IUCN-Red Data Book categories; Hot spots in India; Biomes; Role of Govt. and Non-Government organizations in Conservation of Biodiversity in India; International Biodiversity conservation practices and strategies.

Unit 5: Environmental Education and Management (6 Hrs)

Environmental Education and movements: Goals of environmental education; Environmental education at primary, secondary and tertiary level Chipko, Silent Valley, Bishnoi, Narmada Bacchao Andolan, and Tehri Dam Conflict; Environmental communication and public awareness; Environmental ethics: Green Politics, Earth Hour, Green Option Technologies; EIA- Principles and Process; ISO standards: ISO 9000 and 14000; Environment Laws and Practices.

Course Outcome: Students will be able,

1. To understand the concept and function of the environment and recognize the physical, chemical, and biological components of the earth's systems and their functions.
2. To acquire the awareness on the ecosystem structure and process which interlinked with human survival, intensively need attention at global and regional level.
3. To identify common and adverse impacts of human activities on biotic communities, soil, water, and air quality and suggest sustainable strategies to mitigate these impacts;
4. Develop an understanding of environmental pollutions and hazards and general measures to control them.
5. To identify surrounding natural resources including renewable resources and non-renewable resources and practices fortheir restoration.
6. To realize the importance of biodiversity for maintaining ecological balance and Global conservation practices and strategies.
7. To analyze the need for sustainable development in respect of environmental management through Policies, movements andsocial awareness.
8. To acquire skills required to research and analyze environmental issues scientifically in applied situations such as careers.

Reference books:

1. Banerji, K.S., *Environmental Chemistry*, TMH publication.
2. Bhargava & Gupta, *Environmental Pollution & Human Health*, CBS publication.
3. D. K. Asthana, *Environment : Problems & Solutions*, S. Chand Publishing, 2001
4. G. Tyler Miller, Environmental Science Working With the Earth, Cengage Learning.
5. Ghosh, G.K., Environment and Development, ARH publication.
6. Godfrey Boyle, Renewable Energy, Oxford University Press.
7. Kumar, A., Environment Pollution and Management, ARH publication.
8. M K Varshney, Environmental Pollution & Control, Ashian Publication.
9. Odum Eugene P, Fundamental of Ecology, Cengage Learning
10. Rajagopalan, R, Environmental Studies, Oxford University Press
11. Sakarama Somayaji, Environmental Concept and Sustainable Development, TERI.
12. Shivdut Upadhyay, Environmental Education and Disaster Management, Bharat Publication.
13. Shrivastava, A.K., Environmental Ethics, ARH publication.
14. Trivedi, P.R., Ecology & Environment, ARH publication.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

2nd YEAR BNYS
DURATION- ONE YEAR

S.No	Subject	Theory	Practical
1	Pathology	BNY-201	BNY-202P
2	Microbiology	BNY-203	BNY-204P
3	Community Medicine	BNY-205	BNY-206P
4	Yoga Philosophy	BNY-207	BNY-208P
5	Chromo Therapy & Magneto Therapy	BNY-209	BNY-210P

1. PATHOLOGY

Course type- Core Course

Course code–BNY-201, BNY-202P

Credits- 4

Objective:

The objective of teaching pathology to undergraduate students is to provide a comprehensive knowledge of the mechanisms and causes of disease, so that he/she is able to comprehend fully the natural history and clinical manifestations of disease.

THEORY

General Pathology

1. History and Scope of Pathology
   a) Definition and various branches in Pathology.
   b) Scientific study of disease and methodology.
2. The cell and the reaction of cell, tissue and organ to injury.
   a) Structure of cell and its function.
   b) Causes and nature of cell injury.
3. Reaction of cell to Injurious agents.
   a) Lethal injury- Necrosis and gangrene.
   b) Cloudy swelling.
      i) Fatty changes in Liver, heart and kidney.
      ii) Glycogen infiltration and hyaline degeneration.
      iii) Lipoid degeneration.
      iv) iv)Mucoid degeneration.
   c) Pathological Calcification
4. Inflammation and Repair :
   a) Definition, Classification and nomenclature.
   b) Acute Inflammation. Vascular and cellular phenomenon, cell of exudate chemical mediators and tissue changes in acute inflammation Cardinal signs of acute inflamation, Fat, types and systemic effects of acute Inflammation.
5. Chronic Inflammation :
   a) Difference between acute and chronic inflamation.
   b) Definition of Granuloma.
6. Wound healing :
   a) Regeneration and Repair. Repair of epithelial and mesenchymal tissue.
   b) Primary union and secondary union.
   c)Mechanism involved and factors modifying repair process.
7. Gangrene - Causes, Dry Gangrene, Moist gangrene, Gas gangrene.
8. Granulomas :
   a) Classification of granulomas.
   b) Tuberculosis- Genesis and fate of tubercle, primary and secondary tuberculosis.
   c) Definition, Classification and Pathology of Leprosy.

d) Acquired, Primary, Secondary and Tertiary stages of syphilis.
e) C.N.S.syphilis, C.V.S.syphilis and Gumma, congenital syphilis.
f) Actinomycosis, maduramycosis and rhinosporidiosis.

9. Fluid and Hemodynamic Changes (circulatory disturbances):
   a) Hyperemia, congestion and hemorrhage.
   b) Thrombosis, embolism, DIC.
   c) Ischemia, infarction and shock. d).Edema.
10. Immunopathology:
   a) Basic Pathological mechanism in autoimmune disorders.
   b) Concept of immunodeficiency disorders.
   c) Pathology of AIDS.
11. Growth and its disorders :
   a) Definition of agenesis, aplasia, atrophy, hyperplasia , hypertrophy, hypoplasia , metaplasia.
   b) Concept of dysplasia, anaplasia and carcinoma-in-situ.
12. Neoplasia :
   a) Definition, Classification and Nomenclature.
   b) Characteristic features of benign and malignant tumours.
   c) Route of spread of malignant tumors.
   d) Grading and staging of cancers and pre-cancerous conditions.
   e) Carcinogenesis and carcinogens.
   f) Laboratory diagnosis of cancer-Biopsy, exfoliative cytology and prognostic prediction in cancer.
   g) Description of common tumours like-Fibroma, Lymphoma, Angioma, Liomyoma and Fibrosarcoma, Lymphosarcoma, Angiosarcoma and Leiomyosarcoma.
   h) Tumours of infancy and childhood.
13. Mineral and pigment metabolism :
   a) Pathology of melanin pigment
   b) Pathology of hemoglobin and its derivatives
   c) Hemosiderosis and hemochromatosis
14. Genetic disorders :
   Klinefelter"s syndrome, turner"s syndrome, Down"s syndrome.

Systemic pathology

1. Disorders of RBC
   I. Definition, morphologic and etio-pathologic classification of anemias. Iron deficiency anemia- B12 and folate deficiency anemia, sideroblastic anemia, post-hemorrhagic anemia.
   II. Concept and classification of hemolytic anemias.
   III. Laboratory investigations in anemia.
2. Disorders of WBC
   I. Leukopenia & Leukocytosis.
   II. Agranulocytosis and Tropical Eosinophilia.
3. Coagulation and bleeding disorders

I. Structure, function and pathology of platelets.
II. Definition and classification of blood dyscrasias.
III. Laboratory investigations in bleeding disorders.

4. Diseases of Cardiovascular System
I. Arteriosclerosis and Atherosclerosis.
II. Aneurysm.
III. Rheumatic heart disease, Endocarditis, Myocardial Infarction.
IV. Congenital heart diseases.
V. Congestive cardiac failure.

5. Diseases of Respiratory System
I. Lobar Pneumonia, bronchopneumonia, pulmonary Tuberculosis.
II. Bronchiectasis and Pneumoconiosis.
III. Tumors of lung.

6. Diseases of Gastro-intestinal system
I. Pleomorphic adenoma of salivary gland.
II. Barrat"s Oesophagus.
III. Gastritis and peptic ulcer and tumors of stomach.
IV. Inflamatory bowel diseases- crohn"s disease, ulcerative colitis, typhoid ulcer.
V. Megacolon and Tumors of colon.
VI. Malabsorption syndrome, tropical sprue and coeliac disease.
VII. Amoebiasis, bacillary dysentry and intestinal tuberculosis.

7. Diseases of liver, biliary tract and pancreas :
I. Liver function tests and hepatic failure, viral hepatitis.
II. Cirrhosis of liver. Tumors of liver.
III. Alcoholic liver diseases.
IV. Indian childhood cirrhosis.
V. Cholecystitis andGallstones.
VI. Pancreatitis and Diabetes Mellitus.

8. Diseases of Kidney:
I. Renal function tests, renal failure, Polycystic kidney.
II. Acute glomerulonephritis, Cresentric glomerulonephritis, Membranous glomerulonephritis, Nephrotic syndrome.
III. Chronic glomerulonephritis, acute tubular necrosis.
IV. Pyelonephritis, Kidney in hypertension.
V. Tumors of Kidney.

9. Diseases of Male Genital system
I. Orchitis and testicular tumors.
II. Nodular hyperplasia of prostate, carcinoma of prostate.
III. Carcinoma of penis.

10. Diseases of Female Reproductive Systems
I. Endometrial hyperplasia, adenomyosis and endometriosis.
II. Carcinoma of cervix, tumors of ovary.
III. Carcinoma and other diseases of vulva and uterus.

11. Diseases of Breast
I. Fibrocystic disease and tumors of breast.
II. Gynaecomastia,

12. Endocrine Pathology
    I. Endocrinal lesions in brief mainly stressing on thyroid and Pheochromocytoma.
13. Musculo-skeletal Pathology
    I. Osteomylitis and Osteoporosis.
    II. Rickets and Osteoporosis.
    III. Tumors of Bone.
    IV. Rheumatoid Arthritis, Gout.
    V. Myasthenia gravis and Progressive muscular dystrophy.
14. Diseases of Nervous System
    I. Meningitis, tumors of CNS.
    II. Tumors of Peripheral Nerves.
    III. Encephalitis.
15. Diseases of Lymph nodes and Spleen
    I. Lymphadenopathy.
    II. Malignant Lymphoma, basal cell cracinoma.
16. Pathology of Skin
    I. Squamous cell carcinoma, Basal cell carcinoma.
    II. Malignant melanoma.
    III. Warts, Molluscum contagiosum.
    IV. Fungal diseases.
17. Pathology of Eye.
18. Pathology of ENT.
19. Clinical Pathology Including Clinical Hematology & Clinical Bio- Chemistry.
    I. Sample Collections for various hematological and clinical pathological investigations and anticoagulants used.
    II. Theoretical aspects of HB estimation; hematocrit, blood indices, ESR and normal values in Hematology.
    III. Blood grouping concept of blood groups.
        - Selection of donor, major and minor-cross-matching.
        - Blood transfusion, diseases transmitted by transfusions.
        - Goomb"s test.
    IV. CSF Analysis.
    V. Semen Analysis.
    VI. Urine analysis and microscopy.
    VII. Liver Function tests.
    VIII. Renal function tests.
    IX. Glucose tolerance test.
    X. Exfoliative cytology.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

a. Explain the structure and ultra-structure of a sick cell, mechanism of cell degeneration, cell death and repair and be able to correlate structural and functional alterations.

b. Describe the pathophysiological processes which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it;

c. Analyse the mechanisms and patterns of tissue response to injury such that he/she can appreciate the pathophysiology of disease processes and their clinical manifestations;

d. Correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PATHOLOGY PRACTICALS

I. Hematology

1. Blood groups (A.B.O. System)
2. Estimation of hemoglobin.
3. Enumeration of RBCs (R.B.C. Count)
4. Total leucocyte count (total count)
5. Differential leucocyte count (D.L.C.)
6. Peripheral Smear staining and reporting
7. Absolute eosinophil count.
8. Demonstration of
   a) Hemograms in anemia
      i) Iron deficiency anemia
      ii) Macrocytic anemia
   b) Hemograms in Leukaemias
      i) Acute types
      ii) Chronic types
9. Slide study of:
   a) Acute myeloid leukaemia
   b) Chronic myeloid leukaemia
   c) Chronic lymphatic leukaemia.

II. SPOTTERS:

A. HAEMATOLOGY SLIDES

1. Mirocytic Hypochromic Anaemia.
2. Macrocytic Anaemia.
3. Dimorphic Anaemia.
4. Acute Leukemia.
5. Chronic Myeloid and Chronic Lymphatic Leukemia.

6. Eosinophilia.

B. HISTO- PATHOLOGY SLIDES FOR DISCUSSION

1. Acute Appendicitis.
2. Lobar Pneumonia.
3. T. B. Lymphadenitis.
4. Lipoma, Fibroma, Squamous Papilloma.
5. Squamous Cell Carcinoma.
6. Adenocarcinoma.
7. Osteosarcoma, Osteoclastoma.
8. Pleomorphic Adenoma.
9. Teratoma, Seminoma of Dysgerminoma.
10. Cystoglandular Hyperplasia.
11. Proliferative Hyperplasia.
12. Secretory Endometrium.

C. INSTRUMENTS FOR SPOTTING

1. WintrobesTube.
2. Westergreen.
3. RBC pipette.
4. WBC Pipette. .
5. Lumbar Puncture Needle.
6. Liver biopsy Needle.

III. MORBID ANATOMY

1. Acute Appendicitis.
2. Lobar Pneumonia.
3. TB Lung.
4. Gastric Ulcer.
5. Carcinoma Stomach.
6. Carcinoma Breast
7. Atherosclerosis.
8. Dermoid Cyst of Ovary
9. Seminoma Testis.
10. Chronic Pyelonephritis.

IV. CLINICAL PATHOLOGY

1. Examination of urine for :
   a) Sugar, Ketone Bodies.
   b) Protein and Blood.
2. Semen Analysis
3. Pregnancy Tests.
4. Liver Functions Test.
5. Fractional Test meal.

6. Glucose tolerance Test.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Elaborate on principles, procedures and interpretation of results of diagnostic laboratory tests;
2. Perform with proper procedure simple bed side tests on biological fluid samples like blood, urine etc.
3. Prepare investigation flow-charts for diagnosing and managing common diseases;
4. Identify biochemical and physiological disturbances in diseases;

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Recommended Text books for Pathology:-

1	Pathological Basis of Disease	By Robbins, Cotran and Kumar
2	Text Book of Pathology	By N.C. Dey
3	Text Book of Pathology	By Harsh Mohan

Reference Books-

1	Text Book of Pathology	By Anderson
2	Systemic Pathology	By Symmers
3	Medical LaboratoryTechnology	By Ramnik Sood
4	Pathology	By Boyd
5	Oxford Text Book of Pathology	
6	The science and fine art of Disease Process (Orthopathy)	Herbert M. Shelton

2. MICROBIOLOGY

Course type- Core

Course Course code–BNY-203, BNY-204P

Credits- 5

1. OBJECTIVE:

The objective of teaching microbiology to undergraduate students is to provide a comprehensive knowledge of the natural history, mechanisms and causes of infectious disease, including etiology, pathogenesis, laboratory diagnosis, treatment and control of diseases in the community.

THEORY

1. General Bacteriology :

a) Historical Introduction
b) Morophology and Physiology of Bacteria.
c) Sterilisation and Disinfection
d) Cultivation of Bacteria
e) Bacterial Growth and Multiplication
f) Basic Principles of Bacterial Genetics

2. Immunology

a) Infection and Immunity
b) Immunoglobulins and Immune Response
c) Immune System and Antigen-Antibody Response
d) Compliment and other Serological Tests
e) Hypersensitivity
f) Basic Principles of Auto-Immunity.

3. Systemic Bacteriology

Streptococcus, Staphylococcus and Pheumococcus, Gonococcus, Meningococcus, Corynaebatterium, Clostridium, Hemophilus, Bordetella, Mycobacterium, Spirochaetes, Yersinia , Chalamydia.

4. Parasitology

a) Protozoalogy Entamoeba and Plasmodium
b) Helminthiology-. Ankylostoma. Ascariasis, Taenia, Wucheraria.

5. Virology

a) General properties- of Virus and their diagnosis.
b) Herpes, Adenovirus, Picorna, Hepatitis Virus
c) Poxvirus, Rabies Virus, Poliovirus, HIV, Bacteriophage

6. Mycology

a) General Characters and methods used of study and diagnosis of fungal infections.
b) Superficial mycoses, systemic mycoses, Candidiasis, Aspergillosis, Mycetoma, Rhinosporidiosis.

7. **Applied Microbiology**
   a) Normal bacterial flora of human body.
   b) Diagnostic methods in common diseases
      i. Meningitis, UTI, PID. Gastroenteritis, Respiratory Infection.
      ii. Urogenital Infections, Pyogenic Infections, Nosocomial Infections, infections of Ear, Eye and Oral Cavity
   c) Bacteriology of Water.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Describe all the infectious micro-organisms of the human body and host- parasite relationship
2. Describe parasitic micro-organisms (viruses, fungi, bacteria, parasites) with the pathogenesis of the diseases they cause;
3. Illustrate sources and modes of transmission, including insect vectors, of pathogenic and opportunistic organisms;
4. Describe the pathways and mechanisms of immunity to infection
5. Correlate knowledge about different vaccines that are available for the prevention of communicable diseases;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

MICROBIOLOGY PRACTICALS

1. Microscopes & Microscopy
2. Sterilization & Disinfection
3. Morphology of Bacteria
4. Culture media
5. Culture methods
6. Staining of Bacteria
   a) Grams staining
   b) Alberts staining
   c) Z-N staining
7. Stools Examination
8. Identification of Bacteria
9. Demonstration of V.D.R.L. test
10. Demonstration of Widal test.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Illustrate and Effectively use sterilization and disinfection to control and prevent nosocomial and community acquired infections;
2. Analyse and order laboratory investigations for bacteriological examination of food, water and air.
3. Analyse and Prescribe and interpret laboratory investigations for diagnosis of communicable diseases and identify infectious agents by clinical manifestations;

4. Demonstrate common bed-side tests to detect and identify pathogenic agents, such as blood film for malaria, filaria, gram stain and Acid Fast Bacilli (AFB) staining and stool sample for ova cyst, etc.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text Books

1	Text Book of Microbiology	By R.Anantha Narayana & C.K. Jayaram Paniker
2	Parasitology	By Jayaram Panikar
3	Bacteriology	By Dey
4	Text Book of Mircobiology	By Chakravarthy

Reference Books

1	Parasitology	By Chattarjee
2	Practical Microbiology	By R. Cruick Shank
3	Clinical Microbiology	By Bailey & Scott
4	Medical Laboratory Manual	By Monica Cheesbrough

3. COMMUNITY MEDICINE

Course type- Core

Course Course code–BNY-205, BNY-206P

Credits- 4.5

Objective:

The objective of teaching Community Medicine to undergraduate students is to prepare them to function as community and first level physicians in accordance with the institutional objectives.

THEORY

1. Evolution of Medicine Ancient Medicine, Scientific Medicine, Modern Medicine, Medical Evolution.
2. Concepts in Community Health Concepts of Health, Health & Development, Indicators of Health, Concepts of Disease, Concepts of Prevention, Disease Control & Eradication, Public Health, Social Medicine, Community Medicine, Health Services, Planning & Management, Risk Approach, Evaluation of Health Services.
3. General Epidemiology Introduction, Measurement of Mortality & Morbidity, Epidemiologic Methods Descriptive Studies, Analytical Studies, Intervention studies, Association & Causation, Uses of Epidemiology, Infection Diseases Epidemiology, Disease Transmission, Immunity, Immunizing Agents, Disease Preventions & Control, Disinfection, Investigation of an Epidemic.
4. Genetics.
5. Screening of Diseases Concepts, uses, criteria for screening, sensitivity & specificity
6. Epidemiology of communicable Diseases
    a) Respiratory infections- small pox, varicella, measles, rubella, Mumps, influenza, Diphtheria, Pertusis, Tuberculosis
    b) Intestinal Infections - Polio, Viral hepatitis, Cholera, Acute Diarrhoeal Diseases, Typhoid, Food Poisoning, Ameobiasis, Ascariasis, Ancylostomiasis, Taeneasis
    c) Arthropod - borne infections Yellow fever, Japanese Encephalitis, Malaria, Filaria.
    d) Surface Infections- Rabies, Trachoma, Tetanus, Leprosy, STD, AIDS.
2. Epidemiology of non-communicable diseases Cancer, Cardio-Vascular Diseases, Diabetes, Obesity, Blindness, Accidents, Hypertension, Stroke, Rheumatic Heart Disease.
3. Demography & Family Planning Demographic cycle, Population trends, Fertility related Statistics, Health aspects of Family planning, Contraceptive methods and Delivery System, National Family Welfare Programme.
4. Preventive Medicine in Obstetrics, Paediatrics & Geriatrics Antenatal, Intranatal, Postnatal Care, Low Birth Weight, Infant Feeding, Growth & Development, Growth Chart, Under fives clinic, National Health Policy, Indicators of MCH care, School Health Services, Behavioral Problems, Geriatrics.
5. Environment & Health and Occupational HealthPurification of water & water Quality Standards, Air, Ventilation, Lighting, Noise, Radiation, Air Temperature & Humidity, Housing, Solid Wastes Disposal & Control, Excreta Disposal,

Water Carriage System, Modern Sewage Treatment, Entomology Mosquito, Housefly, Lice, Itch mite, Cyclopes, Rat Flea, Rodents, Insecticides - Hazards, Diseases, Preplacement Examination, Measures for General Health, Protection of Workers, Prevention of Occupational Diseases, Legislation.

6. Basic Medical Statistics Censes, Vital Events, Legislation, SRS, Notification of Diseases, Measures of Dispersion & Centring, Sampling, Tests of Significance, Correlation & Regression.

7. Health Educations and Communication Objectives, Principles, Aids, Practice of Health Education, Planning and Evaluation.
8. Health Planning - Management - International Health Organizations. Planning Cycle, Management Methods & Techniques, National Health Policy, Health Planning in India, Five Year Plans, Health Systems in India- at Centre, State and District Levels, Panchayat Raj, Rural Development Schemes.
9. Health care of Community - Health Systems and National Health Programmes. Levels of Health care, Health for All, Primary Health Care, Health Care Delivery, Health Problems, Health Care Services and Systems, Voluntary Agencies, National Health Programmes.

COURSE OUTCOME

After completion of the course, the student shall be able to:

1. Describe the health care delivery system including rehabilitation of thedisabled in the country;
2. Describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control;
3. Classify and List epidemiological methods and describe their applications to communicable and non-communicable diseases in the community or hospital situation;
4. Illustrate the demographic pattern of the country and appreciate the roles of the individual family, community and socio-cultural environment in health and disease;
5. Explain the health information systems;
6. Correlate the principles and components of primary health care and national policies to achieve the objective of „Health administration, Health education in relation to community".

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

COMMUNITY MEDICINE PRACTICALS

1. Insecticides - 10 + Models.
2. Universal Immunization Programme - 10 + Models.
3. Communicable Diseases - 10 + Models.
4. Insect Borne Diseases - 10 + Models.
5. Microscope Slides - 10 + Models.
6. Environment and Sanitation - 10 + Models.
7. Statistical Charts

8. Field Visits
    a) Rural Health Centres.
    b) Sewage Disposal Plant.
    c) Water Filtration Plant.
    d) Nature Cure Hospitals.
    e) Yoga Institutes etc.

COURSE OUTCOME-

1. Illustrate epidemiology as a scientific tool for making national decisions relevant to community and individual patient intervention;
2. Analyse, interpret and present simple community and hospital based data;
3. Deduce, Diagnose and manage common health issues and emergencies at the individual family and community levels with existing healthcare resources, respecting socio-cultural beliefs.
4. Demonstrate, Design, implement and evaluate health education program using simple audio-visual aids

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

TEXT BOOKS:

1	Text Book of preventive and Social Medicine	By J.E. Park & K. Park
2	Text Book of preventive and Social Medicine	By B.K. Mahajan & M.C. Gupta

REFERENCE BOOKS :-

1	Preventive Medicine	by Dr. Ghosh
2	Preventive Medicine	By Dr. Yashpal Bedi

REFERENCE PAPERS: -

1	World Health Organization Programmes papers
2	National Health Programmes papers
3	Voluntary Health Programmes Papers
4	Red Cross Programmes Papers
5	UNICEF Programmes papers

4. YOGA PHILOSOPHY

Course type- Core Course
Course code–BNY-207, BNY-208P
Credits-5

Objective

The objective of teaching *Yoga* philosophy to undergraduate students is to understand the intricacies of *Yoga* as a philosophy, its relation to ancient texts, other religious thoughts like Buddhism, with reference to *nyaya*, *vasistha*, *samkhya*, *mimamsa*, *Vedanta* and *PatanjaliYogasutras*.

THEORY

1. Yoga, its definition, its basis, purpose, its relation to philosophy and its application.
2. Histrorical highlights of Yoga- Practices and literature from the ancient to modern times with special refernce to nature of yoga upanishads, smrithis & puranas.
3. The philoshpical Nature of Man and his essence, destiny in concept of Yoga.
4. The theory of Body, Mind, Life and Nature of soul, and evidence for the existence of soul.
5. The existential situation of man as reflected in European and Indian thought.
6. Basic concepts of Indian Psychology-definition a brief history of psychology, contemporary psychology according to Freud, Mr.Woodsworth and varioud psychologists, yogic science in relation to Psychology.
7. AstangaYoga (8-Limbs of Yoga-patanjali)
8. Streams of Yoga-Jnana Yoga, Karma Yoga, Raja Yoga and Bhakti yoga.
9. Asanas - their importance, methods, rules, regulations and limitations
10. Spiritual values of pranyama & kriyas, their methods, importance, rules and regulations, difference between breathing exercises & Pranayama.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Illustrate the basic understanding of *Yoga* as a philosophy
2. Explain the various schools of philosophy which had an influence on *Yogic text* like Buddhism, *samkhya*, *mimamsa* etc.
3. Correlate the concept of *brahman* according to *Vedanta*.
4. Describe spiritual values of pranayama and kriyas.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

YOGA PHILOSOPHY PRACTICAL

Loosening exercises (Shitikarana Vyayama)& Breathing exercises-allexercises from "Asanas" pranayama Kriya.-Vivekananda Kendra Publication.

I) Yogasanas

1. Siddhasana
2. Padmasana.
3. Bhadrasana.
4. Samasana.
5. Swastikasana.
6. Vajrasana
7. Simhasana
8. Gomukhasana .
9 . Virasana
10. Ardha Matsyedrasana
11. Vakrasana
12. Paschimottasana
13 Ustrasana
14. Uttitapadasana
15. Shalabhasana.
16. Pavanmuktasana.
17. Viparitakarani Asana.
18. Sarvangasana
19. Dhanurasana.
20. Halasana
21.Matsyasana
22. Kurmasana
23. Kukkutasana
24. Mayurasana
25. Sirsasana
26. Trikonasana
27. Ardha Katichakrasana
28. Parshava Konasana
29. Konasana
30. Katichakrasana
31. Padhastasana
32. Savasana
33. Makarasana
34. Baddhapadmasana
35. Naukasana
36. Chakrasana
37. Garudasana
38. Akarna Dhanurasana
39. Janusirshasana
40. Suptavajrasana
41. Padangusthasana
42. Karnapidasana
43. Tolangulasana
44. Garbhasana
45. Yoganidhrasana

II) Pranayama

1. Anuloma Viloma
2. Nadi Suddhi
3. Ujjayi
4. Sheetali
5. Shitakari
6. Bhastrika
7. Bhramari
8. Suryabhedana
9. Chandrabhedana
10. Sadanta

III) Kriyas

1. Neti -Jal and Sultra.
2. Dhouti- Vamana and danda
3. Trataka - Jyoti and Bindu
4. Kapalabhati

IV) Meditation (Dhyana)

1. Cyclic Meditation
2. Omkara Meditation

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Demonstrate knowledge of *pranayamas*, *prana* and lifestyle, breathing and lifespan.
2. Demonstrate various types of *Yogasanas* in their correct method of performance;
3. Demonstrate different *pranayamas*.;
4. Describe various philosophies of *Yoga* and apply them therapeutically, relating to a patient's life situation or personality.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Books Recommended:

1	The History of Yoga	Vivian Worthintion
2	The psychology of yoga	Taimini
3	The Science of Yoga	Taimni
4	Yoga & Indian Philosphy-	Karel Werner
5	The Basis and application of Yoga Dr. Nagendra	(Vivekananda Kendra Publication)
6	Jnana Yoga, Bhakti Yoga, Karma yoga, Rajaj Yoga	By Swami Vivekananda (Vivekananda Kendra Publication)
7	Narada Bhakti Sutras	
8	Asanas	
9	Pranyama	(Kaivalyadhma Lonavala Publications)
	Asana, Pranayama, Kriyas	
	Pranayama	Vivekananda Kendra Publication
	Yoga philosophy in relation to other system of philosophy	S.N. Das Gupta
	Yoga Deepika	B.K.S.lyengar.
	Psychology	Florance C. Kerip
	Asana why and how	O.P. Tiwari (Kaivalyadham)
	Yogank - Kalyan	Gita Press, Gorakhpur
	Light on The Yoga Sutras of Patanjali	B.K.S. Iyenger
	Light on Yoga	B.K.S. Iyenger
	Light on Pranayama	B.K.S. Iyenger
	Hatha Yoga Pradipika	Swami Muktibodhananda
	Asana , Pranayama, Mudra , Bandha	Swami Satyananda Saraswati Bihar School of Yoga

1. MAGNETOTHERAPY AND CHROMO THERAPY

Course type- Core Course
Course code–BNY-209, BNY-210P
Credits- 6

1. Objective:

The objective of teaching Colour therapy and Magneto biology to undergraduate students is to provide them with comprehensive understanding of philosophy, science and modes of applications of colours and magnets in preventive, curative and rehabilitative therapy.

THEORY

1. Introduction.
   a) Definition of Magetotherapy
   b) Historical highlights
   c) Use of magnets upheld by Naturopathy
2. Magnetism in the Universe.
   a) Earth a huge natural magnet
   b) Nature of Earth Magnetism.
   c) Earth magnetic effects on the human beings.
3. Effects of Magnetism on living organisms.
4. Bio-magnets- Biological experiments with magnets
5. Medical influence of magnetic field Rheumatoid arthritis, hemiplegias, arthralgia, Neuralgias, Stimulation of nervous system, endocrine glands etc.
6. Magnetotherapy, symptomatic relief , Combined treatments i.e. Magnetotherapy, Hydrotherapy , Massage, Diet & Yoga and the result of these combined treatments.
7. Magnets and their composition.
   a) Natural magnets and artificial magnets.
   b) Permanent magnets - classification of magnetic materials , Power of magnets- various qualities of magnets- low, medium and high power magnets and magnetic belts etc.
   c) Electro magnets - electro magnetic field on human behaviour, Electro magnets- for medical purpose -Electro magnetic treatment, bed and hand Magnetiser, foot magnetiser, vibroelectro massager, electro- magnetic chair etc. Non Pulsating clinical Electro magnet.
8. Technique of application of magnets - North and South pole, local & general treatment and the Technique of application of Magnets in treatment of various common diseases.
9. Magnetised water and Magnetised oils Magnetised water in Nature, influence of magnetic field on the properties of water, method and preparation of magnetised water, dosage and therapeutic effect of magnetised Water. Method of preparation of magentised oils and their application and therapeutic effects.
10. Advantages of Magneto Therapy, Magnetotherapy is a natural treatment - Use of Magnets as a preventive device.
11. Clinical Reports from Indian and Foreign Magneto Therapists.
12. Magnetotherapy and Acupressure- Acupuncture Points- Certain clinical case reports. Utilisation of Acupuncture points in Magneto therapy.
13. Terminology - Technical terms related to Magnetotherapy.
14. Recent developments in Magnetotherapy.

Text Books

1	Magneto therapy	Dr. H.L. Bansal
2	Magnetic cure for common diseases	Dr. R.S. Bansal, Dr. H.L. Bansal
3	The text book on Magneto therapy	Dr. Nanubhai Painter
4	Magneto therapy and Acupuncture	Dr.A.K.Mehta

Reference Books—

1	Electromagnetic treatment	Dr. H.L. Bansal
2	Magentic fields or healing by magnets	Dr. A.R. Davis and Dr. A.K. Bhattacharya of Naihati of West Bengal

CHROMOTHERAPY

Theory

1. Introduction.
   a) Historical Highlights
   b) Harmonic laws of the universe
   c) Solar Family
2. Theory of light and force.
3. Chromophilosophy-Reflection, Refraction, Absorption.
4. The Source of light- the sun forming sources, the solar atmosphere- sun power- how the colour effects are produced - influence of sun light on skin, muscles, digestive organs, Bones.
5. Chromo-Chemistry- character of spectrum analysis, materials discovered by the spectroscope, the spectrum - spectrum of grey and natural colour elements- spectra of elements of positive colours, chromatic repulsionand attraction.
6. Chromo-diagnosis and chromo-hygiene.
7. Chromo - therapeutics - the healing power of colour, healing power of red, yellow, orange, blue, Green and Violet, non-spectral colours, sun stroke action of sun light on microOrganisms.
8. Practical instruments for colour healing –Blue, Green, Red, pink, Violet,Yellow, Orange glasses- the solar thermoleum- the electro thermoleum, chromodisc, the chromolens- chromo light eradiator.
9. Directions to be followed during treatment with light.
10. Healing by means of substances charged with different coloured light- method of solarization of water, oils and food substances etc.
11. Chromo therapy prescriptions fordifferent diseases. 12.Chromo - Mentalism.
12. Bordeaux medicine.Chomoth.

AIR THERAPY

1. Composition of Air -Night and Day composition.
2. Ozone in the atmosphere.
3. Air Pollutants, their acceptable values
4. Physiology of Respiratory system.
5. Air baths (Cold and Hot)
6. Theory of Panchapranas and Nadis.

SUN THERAPY (Heliotherapy)

1. History
2. Physiological and Chemical properties of Sunlight.
3. Effect of sunlight on vegetation and Micro-organism.
4. Rejuvenation during diseases.
5. General Sun Bath.
6. Dr. Rikli"s method of Sun Bath.
7. Dr. Kuhne"s method of Sun Bath.
8. Sun Bath through wet pack.
9. Sun bath of children and aged persons.
10. Sunbath with leaves-Atapasnana.
11. Oil sun bath (Abhyanga snana)
12. Sun Stroke.
13. Practice of Exercise in Sunlight.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Correlate basic understanding of principles along which colours and magnets can be used as therapeutic agents, along with history of therapeutic uses of colours and magnets;
2. Explain bio-magnetism, electro-magnetism, properties of magnets, mechanisms of action of magnets on the human body, magnetic overload, charging, modes of application, etc. and apply this knowledge to therapeutically use magnets;
3. Illustrate classification of colours, physics of light, electromagnetic spectrum, pathway of vision, human aura, chakras, heliotherapy, colour breathing, chromo charging, and latest research, applying the same to disease management;
4. Deduce various diseases and disorders of the body and mind using the principles of colour diagnosis;
5. Analyse the therapeutic values of colours and magnets in treatment of various diseases
6. Analyse latest research finding in improving his/herprofessional practice

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

CHROMO MAGNETO THERAPY PRACTICALS

Students should, have demonstration classes in various chromotherapeutic devices and their clinical application, various types of Magnets, equipment and their clinical application.

1. Case studies with record
2. Cases with bio-chemical reports
3. Demonstration of colour glasses & bottles.
4. Demonstration of instruments and equipments.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Correlate various diseases and disorders of the body and mind using the principles of colour diagnosis;
2. Illustrate and implement a plan of treatment using colours and magnets as therapeutic tools
3. Explain the therapeutic values of colours and magnets in treatment of various diseases
4. Analyse latest research finding in improving his/her professional practice.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text Books

1	The principles of light and colour	By Dr. E.D. Babbit
2	Human Culture and Cure in five parts	By Dr. E.D. Babbit
3	Colour therapy	By R.S. Amber
4	Healing through Colour	By Thea- Gimbel

Reference Books

1	The power of the rays	By S.G.J. Oseley
2	Colour Meditations	By S.G.J. Oseley
3	Colour and healing	By Gladya Mayer
4	Colour healing(Chromotherapy)	By Health Reserch Foundation (USA)
5	Practical colour Magic	By Raymond Buckland
6	All You Wanted to Know About Sun Therapy	Vijaya Kumar
7	Colour Therapy-Miracle of Sunrays	Rashmi Sharma and Maharaj Krishan Sharma
8	Science of Natural Life	Rakesh Jindal
9	Prakratik Chikitsa Sagar	Dr.Gaurishankar Mishra
10	Dhanwantari-prakrtik Chikitsank	Ganga Prasad Gaud “Nahar”

3rd YEAR BNYS
DURATION- ONE YEAR

S.No	SUBJECT	CODE	Practical
1	Manipulative Therapeutics	BNY-301	BNY-302P
2	Acupuncture	BNY-303	BNY-304P
3	Yoga Applications	BNY-305	BNY-306P
4	Fasting Therapy	BNY-307	BNY-308P
5	Naturopathy Diagnosis	BNY-309	BNY-310P
6	Modern Diagnosis	BNY-311	BNY-312P

1. MANIPULATIVE THERAPY

Course type- Core Course
Course code–BNY-301, BNY-302P
Credits- 4

1. Objective

The objective of teaching Manipulative Therapies to undergraduate students is to provide them with comprehensive understanding of science and modes of applications of different manipulative modalities like Massage, Chiropractic, Osteopathy, Aromatherapy in preventive, curative and rehabilitative therapy.

THEORY

1. Introduction and History of Massage.
2. Rules, Regulations and Characteristics of Masseur
3. Structures especially concerned in massage and parts of the body to be specially studied
for the purpose is as follows:
    a) Skin
    b) Muscular System
    c) Heart and Circulation
    d) Nervous System
    e) Skeletal System Including joints
4. Effects of the pressure of hand and lubricants on the following systems :-
    a) Skin
    b) Muscular System:- Nutrition and Development Excitation & contraction of "Muscles", Increase of muscular electro-excitability, removal of the fatigue from muscle.
    c) On the ligaments and skeletal system
    d) On the Circulatory system
    e) On Respiration - Increase of respiratory activity and increase of tissue respiration.
    f) On GIT-Improvement in appetite, improvement in secretion of digestive fluids, absorption and improvement in peristalsis.
    g) Excretory System
    h) Powder Massage - merits and demerits. precautions
5. Managing crisis during massage (Side effects and benefits)
6. Basic therapeutic massage techniques, indications and contraindications of of massage while applying to the patients.
7. Massage and its effects:-.
    a) Nutrition
    b) Haematogenesis
    c) Phagocytosis
    d) Increase in the number of blood corpuscles.
    e) Absorption of increased inflammatory exudate, change in the weight of the person, obese or emaciated.
8. Different Massage manipulations, classification and their detailed explanation, uses and contra- indications.
9. Manipulative treatments in stress management
10. Shiatsu in manipulative therapy (Acupressure)
11. Manipulations and life extension.
12. Sujok therapy
13. Dry brush Massage

14. Movements of Joints :-
    i. Flexion
    ii. Extension
    iii. Abduction
    iv. Adduction
    v. Supination & Pronation
    vi. Circumduction
    vii. Deviations - Medial and Lateral
    viii. Opposition

- Massaging in local areas under special circumstances -

1. Massage to Abdomen
   i) Massage to liver
   ii) Massage to Stomach
2. Massage to heart
3. Massage to head
4. Massage to spine
5. Special types of Massage in different diseases
6. Massage to women
7. Massage to infants and children
8. Massage for prevention of diseases and maintenance of natural beauty
9. Ayurvedic Massage-Terminology, Methods and Manipulations
10. Osteopathy: Definition & the Basic principles of osteopathy, Relation of osteopathy to Musculo-skeletal system.
11. Chiropractic:-
    i. Origin & aims of Chiropractic Anatomy of spine
    ii. Chiropractic Examination.
    iii. Indication & contraindication of chiropractic
    iv. Myo-fascial release
    v. Strain Counter strain
    vi. Manual manipulation of spine Chiropractic treatment in various conditions
12. Cranio-Sacral therapy:
    i. Anatomy of skull, Introduction about Cerebro-spinal fluid and its movements.
    ii. Evaluation of Cranio Sacral Rhythm,
    iii. Indication & Contraindications.
    iv. Diaphragm release, Base release, Decompression.
    v. Physical readjustments of skull bones.
13. Aromatherapy :-
    (a) Definitions, Origin and History of Aroma therapy.
    (b) Essential Oils and Its types, extraction of essential oils, distillation, cold pressing or expression, sloven extraction, storage, recognition, selection and mechanism of essential oils.Carrier oils - Almond, Apricot, Avocado, carrot, corn, primrose, grapeseed hazelnut, Jojoba, Olive, Peanut, safflower, sesame, Soyabean & sunflower oil.
    (c) Different methods of using essential oils- inhalation, diffusers, vaporizers, massage, baths, foot bath, pot pouri, compresses, oral intake, beauty treatment, room sprays, insect repellents etc.
    (d) Description of different essentials oils & their benefits.
    (e) The best essential oils - The five fragrance categories - green, floral, citrus,

Woody & Spicy and mixing of Aroma Oils & Equipment required for Mixing Oils.

(f) Aroma Oils for common problems and their therapeutic properties.

(g) Precautions, ill effects and careful handling of essential oil.

(h) Contraindications- Oils to be avoided in particular problems

COURSE OUTCOME-

At the end of course, a student should be able to –

1. Understand the principles and history of manipulative therapy.
2. Description and therapeutic uses of different types of oils.
3. Analyse the application of manipulative therapy in clinical practice.
4. Analyse the research based new development in manipulative therapy.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

MANIPUALTIVE THERAPY PRACTICALS

1. 35 demonstration classes
2. 10 demonstrations in Panchakarma
3. Each student should perform 35 massages

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Demonstrate different types of massage and manipulative therapies, such as Osteopathy. Chiropractic, Aromatherapy, Swedish massage, Kellogg"s massage, Shiatsu, Geriatric Massage, Pediatric massage, Antenatal massage, Ayurvedic massage, etc;
2. Analyse therapies such as Reflexology and Zone therapy in their professional practice for musculoskeletal disorders, etc.
3. Explain the disease and relevant treatment to the patient.
4. Correlate and study the disease and the manipulative practices.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text Books:-

1	Massage Books	By George Downing
2	Massage	By Constant Young
3	Massage Therapy	By Dr. J.H. Kellog
4	The Complete Book of Massage	By Clare Maxwell Hudson
5	Step by Step Massage	By Carole Me. Gilvery and Gini Reed

6	The Book of Massage	By Luinda Lidell w ith Sarathomas, Carola Berb Ford Cooke and Anthony Porta
7	The Complete step-by-step guide to eastern and western	
8	Baby Massage - The Magic of Loving Touch	By Auckett, Anelia D
9	Natural Healing from Head to Toe	By Aihara, comellia - Aihara, Herman
10	Massage Works	By D. Baloti Lawrence and Lewis Harrison
11	Manual of osteopathy Practice	By Alan Stoddard
12	Alternative Chiropathy Practice	By Susan Moore
13	Massage (Ayurvedic)	1. By Achanta Laxmipathy

Reference Books:-

1	The PanchakaramaTreatment of Ayurveda	By T.L. Devraj
2	Chirotherapy : A-Text of Joint Movements	By Hesse P.De
3	MassageTherapy: the Holistic Way to Physical and Mental Health	By Juckson Richard
4	Book of Massage and Aromatherapy	By Facroix Nity and (Achieving complete relaxation & seager, Shoron well-being with massage and essential oils)
5	Brain Massage, Revitalize mind body	By Howell, Kelly
6	Massage to Common Ailments	By Penny Rich
7	All you wanted to know about Aromatherapy	By Lalita Sharma
8	Aromatherapy	By Julie Sadler
9	Health and Beauty through Aromatherapy	By Blossom Kochhar
10	Ayurveda & Aromatherapy	By Dr. Light Miller & Dr. Bryan Miller

2. ACUPUNCTURE

Course type- Core Course
Course code–BNY-303, BNY-304P
Credits- 4

Objective:

The objective of teaching acupuncture to undergraduate students is to provide them with a comprehensive understanding of the science and art of Acupuncture, Acupressure and related therapies.

THEORY

1. Definition, concepts of Acupuncture.
2. Traditional and modern theories of Acupuncture.
3. Pulse diagnosis:
    - Location and types of pulse.
    - Co-relation with five elements
    - Techniques to improve flow of energy
4. Materials and Methods of Acupuncture.
5. Principles of Acupuncture.
6. Rules for selection of Acupuncture points.
7. Contraindications and complications of Acupuncture.
8. The concept of Meridians :-
    a) Lung Meridian (Lu)
    b) Large intestine Meridian (LI)
    c) Spleen Meridian (SP)
    d) Stomach Meridian (ST)
    e) Heart Meridian (H)
    f) Small intestine Meridian (SI)
    g) Urinary bladder Meridian (UB)
    h) Kidney Meridian (K)
    i) Triple warmer Meridian (TW)
    j) Gall bladder Meridian (GB)
    k) Liver Meridian (Liv)
    l) Governing vessel Meridian (GV)
    m) Conceptional vessel Meridian (C.V)
    n) Eight extra Meridians
    o) The extra-ordinary points.
9. Diagnostic methods (both- Acupuncture and Modern)
10. Auriculo Therapy
11. Moxibustion
12. Stimulation in Acupuncture.
13. Acupuncture Therapeutics
14. Acupuncture Anaesthesia
15. Reflexology & Zone Therapy:-
    - What is Reflexology, history and development? How does reflexology work Body & its reflex zones?
    - Applications, indications and contra- indications Preventive effects of reflexology
16. Acupressure: - What is Acupressure?

- Its origin & development
- Physiological effects of Acupressure
- Therapeutic uses of Acupressure

17. Acupuncture/pressure in Acute disorders and emergency.
18. Pranic Healing.
19. Reiki

COURSE OUTCOME

1. Illustrate the definitions of Acupuncture.
2. Description of the principles and historical highlights of Acupuncture;
3. Classify and Correlate the concepts and theories mechanism behind Acupuncture
4. Demonstrate basic understanding of procedures of different styles of Acupuncture and related therapeutic modalities.
5. Deduce basic and advanced tools used in Acupuncture;
6. Analyse the application of Acupuncture in clinical practice.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

ACUPUNCTURE PRACTICALS

1. Demonstration of Needling techniques and Electro-stimulation, Moxibustion.
2. Each Student should give treatments to atleast 20 patients during the practicals.

COURSE OUTCOME

1. Demonstrate basic understanding of procedures of different styles of Acupuncture and related therapeutic modalities, such as Traditional Acupuncture, Scalp Acupuncture, Auriculotherapy, Acupuncture Anaesthesia, Reflexology, Zone Therapy, Acupressure, etc;
2. Illustrate case discussion and the techniques to be used.
3. Analyse evidence based acupuncture and its application.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

REFERENCE BOOKS-

1	Clinical Practice of Acupuncture	By A.L. Agrawal
2	Clinical Acupuncture	By Dr. Anton Jayasurya
3	Principles and practice of Acupuncture	By Dr. J.K. Patel
4	Health in your hands	By Devendra Vora
5	Shiatsu	By Ohashi

3. YOGA APPLICATION

Course type - Core

Course code- BNY-305, BNY-306P

Credit 11

Objective:

The objective of teaching *Yoga* and its applications to undergraduate students is to provide them with comprehensive understanding of*Yoga* with reference to traditional texts like *PatanjaliYogasutras*, *Hatha YogaPradipika*, *Shiva samhita*, *Gheranda samhita* and *Swara Yoga*; various streams of *Yoga*, advanced meditative techniques like *Yoganidra*, *Omkar*, C*yclic*, V*ipassana* and learn about benefits of *Yoga*as compared to exercise.

THEORY

1. Patanjali yoga sutras - 1st two chapters.
   (ie.,Samadhi Pada & Sadhana Pada, brief summary of Vibhutipada & Kaivalyapada)
2. Hatha Yoga Pradipika- full text with necessary reference to Gheranda Samhita & Siva Samhita.
3. Introduction to other streams of Yoga-Kundlini and TantraYoga.
4. Yoga Nidra-Methods, application, effects and benefits.
5. Meditation-Types of Meditation-Omkar, Cyclic, Vipassana etc. Methods of application, benefits, precaution, its influence on health and disease.
6. Different relaxation techniques.
   a) Instant relaxation,
   b) Quick relaxation,
   c) Deep relaxation techniques-their methods, effects & benefits.
7. Yoga-in relation to personality and education.
8. Yoga-in relation to sports and games, social and political life.
9. Eye exercises- Benefits, methods, precautions.
10. Physiological aspects of Asanas.
11. Physiological, Neuro-Physiological aspects of pranayama.
12. Shat Kriyas- Comparative study of Shat Kriyas with other system of Medicine.
13. Physiological aspects of exercises
14. Physical exercises for health & fitness
    a) Introduction
    b) Who should stretch
    c) When to stretch
    d) Why to stretch.
    e) How to stretch
    f) Relaxing stretches for i. Back, legs, feet and ankles. ii.Hips, hamstring, low back.
    g) Stretching exercises for elderly.
    h) Stretching exercises for Abdominal muscles, Arms, Chest, Ankles, Legs, knee, thigh, fore arm etc.
    i) Techniques of walking, running, Cycling etc.
    j) Caring back.
15. Swara – Yoga
16. Recent trends: Principle, practice and research studies on
    a) Vinyasa yoga
    b) Ayengar yoga
    c) Preksha dhayna

d) Kriya yoga

e) Sudarshan-kriya yoga
f) Pattabhi jois yoga
g) Shivananda yoga

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Illustrate the knowledge of traditional textslike *PatanjaliYogaSutras*, *Hatha Yoga*, *Shiva Samhita* and *Gheranda Samhita*;
2. Explain the principles behind various meditative practices like *Yoganidra*, *Om* meditation, *cyclic* meditation, V*ipassana* and so on;
3. Explain about *Yoga* in relation to its application in education, sports;
4. Demonstrate basic understanding of procedures of stretching and exercises;
5. Describe basic physiological changes of *asanas* and shat *kriyas* and their adverse effects
6. Describe the concept of *Yoga* as explained in the traditional texts;
7. Deliver a meditative session using any of the meditative styles;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

YOGA PRACTICALS

I. Asanas
1. Including all asanas of I year adding some advanced postures from Yoga Deepika.
2. All loosening (Shitilikarana Vyayama) and breathing exercises.

II. Pranayama (as 1st B.N.Y.S.)

III. Kriyas- (including Portion of 1st B.N.Y.S.)
1) Dhouti- Vastra
2) Gajakara ni - (Vari sara Dhouti)
3) Nauli- (all three types).
4) Shankha Prakshalana- 1. Laghu. 2. Maha
5) Basti

IV . Meditation:-
- Omkara
- Cyclic
- Vipassana

V. Techniques Like:-
1) Self-Management of Excessive Tension (SMET)
2) Pranic Energisation Technique (PET)
3) Mind Sound Resonance Technique (MSRT)
4) Yoga Nidra (Short and long session).

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Explain the knowledge of traditional texts like*PatanjaliYogaSutras, Hatha Yoga, Shiva Samhita* and *Gheranda Samhita*;
2. Illustrate the principles behind various meditative practices like *Yoganidra*,*Om* meditation, *cyclic* meditation, V*ipassana* and so on;
3. Demonstrate basic understanding of procedures of stretching and exercises;
4. Deliver a meditative session using any of the meditative styles;

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Books Recommended:-

1	The Science of Yoga	By Taimini (commentary on patanjali Yoga Sutras)
2	Hatha Pradipika	By (Kaivalyadhama Publication- Lonavla)
3	Yoga Nidra	By (Bihar School of yoga, Munger publications)
4	Kundalini Yoga	
5	Tantra Yoga	
6	Asana	
7	Pranayams	By Vivekananda Kendra Publications
8	Psychology	By Horensce C. Kenipp.
9	Religiousness in Yoga theory & Practice	By TKV Desikachar
10	Research papers	By Kaivalyadhama (Publication inYoga Mimamsa- all papers relating to physiological effects of Yoga.)
11	Yoga in Education	By Dr. Nagendra (Vivekananda kendra Publication)
12	Vipassana	By S. Goenka
13	Anatomy & Physiology of Yoga	By Dr.M.M. Gore
14	An over view on research papers	By SVYASA, Banglore
15	Patanjali yoga sutra	By Dr P.V. Karmavelkar (Kaivalyadham)
16	Patanjali yog pradeep	By Swami Omanand Teerth (Gita - press, Gorakhpur)
17	Hatha Yoga Pradipika	By Swami Muktibodhananda(Bihar School of Yoga)
18	Light on Yoga	By B.K.S.Iyenger
19	Light on Pranayama	By B.K.S.Iyenger
20	Light on The Yoga Sutras of Patanjali	By B.K.S.Iyenger

4. FASTING THERAPY

Course type- Core

Course code– BNY-307, BNY-308P

Credits-4

Objective:

The objective of teaching Fasting Therapy to undergraduate students is to provide them with comprehensive knowledge of Fasting therapy and utilization of the same for therapeutic purposes.

THEORY

I. Introduction :-

1. Theory of Fasting
    a) Fasting in Animals
    b) Your Tongue Never Lies
    c) Miracles of Fasting
2. History of Fasting
    a) Fasting in Ancient India
    b) History of Fasting in India
    c) History of Fasting in Foreign Countries
    d) Historical Highlights of Fasting
3. Science of Fasting

II. The Philosophy of Fasting

1. The Philosophy of Sane Fasting
2. Philosophy of Therapeutic Fasting
    a) Life & its existence in connection with health and diseases.
    b) Nature of disease
    c) The No-Breakfast Plan
    d) Objections commonly raised in Fasting Therapy
    e) Pros and cons of Fasting
    f) Difference between Fasting and Starvation
    g) Difference between Hunger and Appetite

III. Physiology of Fasting:-

1) General Physiology.
2) Source and Metabolism of Carbohydrates, Fats and Proteins During Fasting &Starvation.
3) Chemical and Organic changes during Fasting.
4) Repair of Organs and Tissues During Fasting.
5) Changes in the Fundamental Functions While Fasting.
6) The Mind & Special Senses During a Fast.
7) Secretions and Excretions.
8) Bowel Action During a Fast.
9) The Influence of Fasting on Growth and Regeneration.
10) Gain and Loss of strength While Fasting.
11) Gain and Loss of weight During Fasting.
12) Autolysis
13) Fasting and Sex.
14) Rejuvenescence Through Fasting.

IV. Facts Explained About Fasting:-
1) Fasting Does Not Induce Deficiency "Disease".
2) Death in the Fast.
3) Objections to the Fast.
4) The Quantity of Food Necessary to Sustain Life.

V. Practice of Fasting:-
1) Does Fasting Cure Disease?
2) The Rationale of Fasting.
3) The Length of The Fast.
4) Contraindications of Fasting.
5) Fasting in Special Periods and Conditions of Life.
6) Symptomatology of The Fast.
7) Progress & Hygiene of The Fast.
8) Breaking The Fast.
9) Gaining Weight After The Fast.
10) Living After The Fast

VI. Rules and regulations of Sane Fasting and Therapeutic Fasting.

VII. Definition and Classification of fasting
1) Definition of fasting in different aspects.
2) General classification of fasting (Religious, Political and Therapeutic.)
3) Methods and types of therapeutic fasting (Dry, whey, Juice, Salad, Monodiet (Kalpa), Fruits
Intermittent, Preventive, Weekly etc.

VIII. Hygienic Auxiliaries of Fasting-
1) Air and Breathing
2) Enema
3) Bathing
4) Clothing
5) Water Drinking
6) Exercise
7) Mental Influence

IX. Study of Patients During and After Fasting -
1. Crises during fasting and their management.
2. Physiological effects of fasting.
3. Biochemical aspects.
4. Study of the tongue, the breath, the temperature and pulse etc.
5. The loss and the gain of weight.
6. How and when to break the fast.
7. Diet after the fast.

X. Indications and Contraindications of fasting.

XI. Therapeutic aspects of Fasting
1. Fasting in acute diseases.
2. Fasting in chronic diseases.

3. Role of fasting in various diseases.
4. Obesity and fasting.
   a. Definition and assessment of obesity.
   b. Epidemiology.
   c. Etiology.
   d. Clinical Features
   e. Treatment.
5. Fasting for preservation of health and prevention of diseases.
6. Fasting in Drug Addiction.
7. Fasting Versus Eliminating Diets.

XII. Results of Fasting.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Illustrate definitions and historical highlights of fasting therapy through the centuries, including fasting employed in different religions, the concept of dietetic principles in Naturopathy.
2. Classify fasting according to duration, purpose, type, etc.
3. Explainthe metabolism of fasting, Calorie Restriction: Concept, Method, Prevailing basic- Clinical-appliedevidence.
4. Describe importance of various components of diet, such as dietary fiber, vitamins, minerals, etc.
5. Analyse fasting therapy in managing various diseases.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

FASTING PRACTICALS

Study of 50 fasting cases & case study of 25 with record

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. illustrate definitions and historical highlights of fasting therapy through the centuries, including fasting employed in different religions, the concept of dietetic principles in Naturopathy.
2. Classify fasting according to duration, purpose, type, etc.
3. Explain the metabolism of fasting,Calorie Restriction: Concept, Method, Prevailing basic- Clinical-applied evidence.
4. Demonstrate usage of therapeutic diets and fasting therapy in promotive, preventive, curative and rehabilitative therapy.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Text Books -

1	Fasting for Healthy and Long Life	By Hereward Carrington
2	The Fasting Cure and Vital Economy	By Lakshamana Sharma
3	Fasting can save your life	By Herbert M. Shelton
4	The Effects of Fasting	By Donald Upton
5	Fasting as a way of life	By Allan coli M.D.
6	Fasting can Renew your life	By Herbert M. Shelton
7	Scientific Fasting	By Hazzard, Linda Burfield
8	Fasting for Rejuvenation	By Seaton, Julia
9	The Science & Fine Art of Natural Hygiene	By Herbert M Shelton
10	The Science & Fine Art of Food & Nutrition	By Herbert M. Shelton
11	The Hippocrates Diet and Health Programme	By Ann Wigmore
12	The Juicing Book	By Stephen Blauer
13	Live Food Juices	By H.E.kirschner

Reference Books-

1	The Philosophy of Fasting	By Edward Eaul Purintion
2	Vitality, Fasting and Nutrition	By Hereward Carrington
3	The Fasting Cure	By Upton Sinclair
4	The Fast - Way of Health	By Harold R. Brown
5	Fasting	the Master Remedy
6	Fast for Health	By John Joseph Picker
7	The Biology of Human Starvation	By Keys, Ancel
8	Fasting Story NO.1	By Health Research
9	Fasting Story NO.2	By Health Research
10	Rational Fasting	By Prof.Arnold Ehret
11	Explaining Fasting	By Forster, Roger
12	Hints on Fasting Well	By Carrington, Hereward etc
13	The Science and Fine Art of Fasting	By Herbert M Shelton
14	Miracles of Fasting	By Dr. Paavo Airola
15	No Breakfast Plan	By Edward Hook Dewey
16	Thus Speaketh the Stomach	By Prof. Arnold Ehret
17	The Physiologically Correct Fast	By Dr. Are Waerland

5. NATUROPATHY DIAGNOSIS

Course type- Core
Course Course code–BNY-309, BNY-310P
Credits-4

1. OBJECTIVE:

The objective of teaching Diagnostic Methods in Naturopathy to undergraduate students is to provide them with comprehensive knowledge of diagnostic methods employed by traditional Naturopaths that can be used efficiently to diagnose various diseases without the use of sophisticated technology.

THEORY FOR FACIAL DIAGNOSIS

1. Introduction to the science of facial expression.
   a) Historical highlights.
   b) Definition and scope of the science of facial expression.
2. Characters of the Healthy Body.
   a) Normal functions.
   b) Normal Figure.
3. Foreign matter theory :-
   a) Definition of foreign matter.
   b) The process of accumulation of foreign matter in the body.
   c) Encumbrance.
   d) Changes caused in the body due to the accumulation of foreign matter.
   e) General pathology of foreign matter.
4. The nature: origin and cure of diseases of children and their unity.
5. Bad habits supports the accumulation of foreign matter in the body-tobacco, alcoholic drinks, coffee, tea, opium etc. Drug addictions -Pethedine, Heroin, Injection etc., Suppression of diseases viz elimination of morbid and diseased germs from the system.
6. Types of encumbrance - Front encumbrance, - back encumbrance front and right side Encumbrance, left side encumbrance and mixed or whole encumbrance, their description, general characters and possible diseases in the concerned encumbrance and their treatment.
7. Diseases of the internal organs and their treatment.
8. Process of elimination of foreign matter.
   a) Importance of Nature Cure treatments.
   b) The digestive process-natural dietetics.
   c) Artificial outlets of elimination
9. Methods to be followed to increase the vitality of the body.
10. The importance of Nabhi Pareeksha, the methods of Nabhi Pareeksha & the techniques of correction.

THEORY FOR IRIS DIAGNOSIS

1. Introduction of iridology :
   a) Definition of Iridology
   b) Historical highlights.
   c) Comparison of other systems - Allopathy , Homeopathy , Ayurveda, Unani etc. Diagnostic methods.
   d) Anatomy of the Iris.

e) Theory in application.
f) The theory of healing crisis.
g) A unit form division and classification of diseases.
h) Philosophical phase.
i) Theoretical phase

2. I. Instructions in Methods of Application :-
   a) Technique in Iris reading.
   b) The normal and abnormal Iris, colour of the Iris.
   c) The Vibratory theory.
   II. Study of density of the Iris.
   III. Key to Iridiology.
      a) Iris charts brought up to date.
      b) Zone areas.
      c) Sectoral Division.
3. Comparison of fermentation viz inflammation.
4. Interpretations of Iris manifestations.
   I. A) Types of inflammation
      B) Inherent (Lesions and weakness)
      C) Acidity and Catarrh
      D) Toxic settlements
      E) Nerve Rings
      F) The Lymphatic rosary
      G) Injuries and operations
      H) Itch or Psora spots in the iris - the surf rim
      I) The radii- solaris
      J) Tumours
      K) The sodium ring
      L) Anaemia in the extremities and in the brain.
      M) Drugs and chemicals appearance on the Iris and their poisonous effects in the body:-Arsenic, Bismuth, Bromides, Coaltar products, Ergot, Glycerin, Iodine, Iron, Lead, Mercury, Opium , Phosphorous, Quinine, Salicylic acid, Sodium, Strychnine, Sulphur, Turpentine, Vaccines etc.
   II. The iris reveals the cause of disease.
5. Case histories according to Iridology.
6. Advance research in Iridology.
   a) Reflex areas and remote symptoms.
   b) Stomach and intestinal disorders, the principle causes, the principle disorders & remedial Measures.
7. Prakruti analysis: Concept of vata pitta, kapha Manifiestation of vata pitta kapha Diseases according to tridosha theory Pathya apathya

COURSE OUTCOME:

After the completion of the course, the student shall be able to:

a) Illustrate historical significant developments in diagnostic procedures used in Naturopathy and the characteristics of a Healthy Body with respect to Naturopathic Principles.
b) Describe philosophical theories of causation of disease according to Naturopathy.
c) Analyse knowledge of theory of encumbrances, their types and interpretation, along with naturopathic ways to therapeutically correct them.

d) Describe in detail Iris Diagnosis, with respect to history, techniques, iris signs, interpretations and tools used, and use the same to diagnose diseases;
e) Explain the techniques and interpretations of stool and urine diagnosis, correlating modern medical knowledge and Ayurvedic *sthoola* and *muthra pariksha*;
f) Analyse and apply different diagnostic procedures in Naturopathy to effectively and accurately diagnose various diseases, such as Iris Diagnosis, Facial Diagnosis, Stool and Urine Diagnosis, etc.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

NATUROPATHY DIAGNOSIS PRACTICALS

1. Clinical classes
2. Demonstrations in the Nature Cure Hospital.
3. Case Studies 25 with Record.
4. Demonstration of Equipments.

COURSE OUTCOME:

After the completion of the course, the student shall be able to:

a) Illustrate historical significant developments in diagnostic procedures used in Naturopathy and the characteristics of a Healthy Body with respect to Naturopathic Principles
b) Explain philosophical theories of causation of disease according to Naturopathy
c) Deduce knowledge of theory of encumbrances, their types and interpretation, along with naturopathic ways to therapeutically correct them.
d) Demonstrate the techniques and interpretations of stool and urine diagnosis, correlating modern medical knowledge and Ayurvedic *sthoola* and *muthra pariksha*;

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Recommended Text Books: -

1	Science of Facial Expression	By Louis Kuhne
2	The New Science of Healing	By Louis Kuhne
3	The Science and Practice of Iridology	By Bernard Jensen
4	Iridiagnosis and other Diagnostic Mehods	By Henry Lindlahr

REFERENCE BOOKS: -

1	Iridology: A Guide to Iris Analysis and Preventive Health Care	By Adam J. Jackson
2	Iridology: How to Discover Your Own Pattern of Health and well-being Through the Eye	By Dorothy Hall
3	Iridology: A Complete Guide to Diagnosing Through the Iris and all related forms of treatment	By Davis and Farida.
4	Iridology: Alternative Health Series	By Adam J. Jackson
5	Vision of Health: Understanding Iridology	By Jensen, Bernard and Booden, Donald.
6	Eyes Talk: Through Iridology Better Health	By Vriend Joha.

6. MORDERN DIAGNOSIS

Course type- Core Course
Course code–BNY-311, BNY-312P
Credits-5

Objective:

The objective of teaching Diagnostic Methods in Conventional Medicine to undergraduate students is to provide them with comprehensive knowledge of diagnostic methods employed by conventional doctors that can be used efficiently to diagnose various diseases, for diagnosis as well as prognosis.

THEORY

Section A-Clinical Diagnosis

I. Examination of Patients :-

1. Approach to a patient
2. History taking and case sheet writing
3. Symptomatology
4. Examination of Vital Data
5. Importance of height, weight, abdominal girth
6. General physical examination
7. Examination of breasts, back, spine and genitals
8. Systemic examination of the patient
   a) Abdomen (Digestive system)
   b) Cardiovascular System
   c) Respiratory System
   d) Renal system
   e) Central Nervous system
   f) Locomotor system
   g) Examination of ear, nose and throat
   h) Gynaecological examination
9. Provisional Diagnosis

II. Routine and special Investigations :-

1. Laboratory Investigation
   a) Urine analysis
   b) Stool examination
   c) Blood examination
      i. Peripheral smear, Total WBC Count, Differential WBC Count
      ii. Erythrocyte sedimentation rate (E.S.R), Hb Estimation
      iii. Blood Sugar, Blood Urea, Serum uric acid, Serum cholesterol, Serum lipid profile, Serum creatinine.
2. Radiological Investigation :-
   a) Plain chest X-Ray
   b) K.U.B.
   c) Lumbar and cervical spine
   d) Skull and paranasal sinuses
   e) Joints
3. Contrast Radiography :-
   a) Cholecystography
   b) Pyelography
   c) Angiography
   d) Bronchogram

4. Electrocardiography
5. Echo- Cardiography
6. Coronary angiography
7. Electro- Encephalography
8. Bio-chemical investigations
    a) Liver function tests
    b) Creatinine clearance test
    c) Vanillo-mandellic acid (VMA) excretion test in urine
    d) SGOT and SGPT
    e) LDH
    f) CPK
9. Diagnostic Paracentesis
10. Diagnostic Thoracocentesis
11. Lumbar Puncture and CSF analysis
12. Radio-active Iodine up-take studies
13. Thyroid T3, T4 estimation
14. Diagnostic skin tests
15. Endoscopic procedures
16. Ultra-sonography
17. Computerised tomographic scan (CT Scan)
18. Magnetic Resonance technique (MRI)
19. Positron Emission Tomography (PET)
20. Doppler Study

III. Final Diagnosis

Section B- FIRST AID

1. General principles of First Aid
2. Wounds Control of hemorrhage, Epistaxis
3. Shock- Classification and treatment
4. Dog bite, Snake bite, Scorpion sting
5. Burns and Scalds
6. Heat exhaustion, heat stroke and fainting, frost bite
7. Fractures, dislocations, sprains and strains
8. Poisoning
9. Epileptic fits, convulsions in children
10. Aspiration of foreign body
11. Artificial respiration
12. Bandages of different types
13. Unconsciousness and general principles of treatment

Section C- Recognition, Evaluation of Clinical Emergencies.

1. Cardio Vasular System :-
    - Acute myocardial infarction
    - Cardiogenic Shock
    - Cardiac arrhythmias
    - Cardiac arrest
2. Respiratroy System-
    - Hemoptysis
    - Status asthmaticus
    - Spontaneous pneumothorax
    - Acute respiratory failure

3. Gastro Intestinal System :-
   - Acute Vomiting
   - Perforation of Peptic Ulcer
   - Hemetemesis
   - Hepatic Precoma and coma.
4. Central Nervous System :-
   - Unconscious patient
   - Cerebrovascular catastrophes
   - Convulsions
   - Status epilepticus
5. Renal System :-
   - Acute renal failure
   - Renal colic
   - Hematuria
6. Endocrine and Metabolism :-
   - Thyroid crisis
   - Adrenal Crisis
   - Diabetic Keto acidosis and coma
   - Hypoglycemia
7. Miscellaneous Emergencies-
   - Syncope
   - Acute peripheral circulatory failure
   - Acute reaction
   - Hypothermia

RECOMMENDED TEXT BOOKS:-

1	Hutchinson‟s Clinical Methods	By Chamberlin
2	Clinical Methods	By P.S.Shanker
3	Manual of Clinical Methods	By Jai Vakil
4	Clinical Diagnosis	By P.J. Mehta
5	Modern Diagnosis	By Red Cross Society
6	Oxford‟s hand book of Clinical Medicine	By St. John Ambulance Association.
7	First Aid	By L.C. Gupta and others

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

a) Understand the procedures and nuances in approaching a patient and taking a detailed history and writing a case report;

b) Illustrate examination procedures and techniques generally as well as for specific systems and make provisional diagnoses of common diseases;

c) Describe laboratory investigations used for supporting the provisional diagnosis made after history taking and examinations;

d) Analyse and interpret radiological investigations, biochemical investigations, sonography, EEG, ECG, EMG, echocardiography, CT, PET, MRI, etc for diagnostic and prognostic purposes..

e) Analyse and interpret any further investigations required for the provisional diagnosis made.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

MORDERN DIAGNOSIS PRACTICALS

1. History taking and physical examination of cases.
2. Case sheet writing in different general cases (25)
3. Demonstration of equipments and instruments used for investigation in modern diagnostics
4. Demonstration tour of an ultra modern super-speciality Hospital to see the latest techniques of modern investigations.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Illustrate the procedures and nuances in approaching a patient and taking a detailed history and writing a case report;
2. Correlate examination procedures and techniques generally as well as for specific systems and make provisional diagnoses of common diseases;
3. Deleniate laboratory investigations used for supporting the provisional diagnosis made after history taking and examinations;
4. Analyse and interpret radiological investigations, biochemical investigations, sonography, EEG, ECG, EMG, echocardiography, CT, PET, MRI, etc for diagnostic and prognostic purposes.
5. Demonstrate knowledge of invasive tests such as paracentesis, thoracocentesis, lumbar puncture, laparoscopy, endoscopy, biopsy, etc., take a case history with examinations and prepare a detailed case report.
6. Analyse and interpret any further investigations required for the provisional diagnosis made.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

7. TECHNIQUES IN SPA
COURSE TYPE- SKILL ENHANCEMENT COURSE COURSE CODE - BNY 313

1. INTRODUCTION TO ANATOMY & PHYSIOLOGY
   - Skeletal System,
   - Muscular System
   - Nervous System
   - Lymphatic System
   - Cardiovascular System
   - Digestive System
   - Skin System
2. HISTORY AND INTRODUCTION TO SPA
   i. Club spa
   ii. Cruise ship spa
   iii. Day spa
   iv. Destination spa
   v. Medical spa
   vi. Mineral spring's spa
   vii. Resort/hotel spa
3. Special Massage Therapy like Swedish Massage, Ayurveda Massage, Thai Massage, Aroma therapy
4. Spa Product Knowledge
   a) Herbs
   b) Essential Oils
   c) Aromatic Oils
   d) Preservatives
   e) Active Ingredients
   f) Carrier Oils & Base Creams
   g) Pre Blended Oils
   h) Pre Blended Creams, Soaps, Shampoos, Lotions
   i) Licensing (Drug Control)
   j) Product Testing
   k) Efficacy Shelf Life
   l) Storage Contamination
   m) Allergies
   n) Product Handling Dispensing
   o) Self-Protection.

FINAL YEAR
DURATION- ONE & HALF YEAR

S.No	SUBJECT	Theory CODE	Practical Code
1	Nutrition, Dietetics & Herbs	BNY-401	BNY-402P
2	Obstetrics & Gynecology	BNY-403	BNY-404P
3	Yoga Therapy	BNY-405	BNY-406P
4	Hydrotherapy –I	BNY-407	BNY-409P
5	Hydrotherapy- II	BNY-408	
6	Physiotherapy	BNY-410	BNY-411P
7	Holistic Practice Of Naturopathy & Yoga	BNY-412	BNY-413P
8	Hospital Management & Research Methodology	BNY-414	BNY-415P
9	Psychology & Basic Psychiatry	BNY-416	BNY-417P
10	Spa Management	BNY-419	-
11	Professional Ethics	BNY-418	-

1. NUTRITION DIETETICS AND HERBS

Course type- Core Course
Course code–BNY 401, BNY402P

Credits-4

OBJECTIVE:

The objective of teaching Nutrition and Medicinal Herbs to undergraduate students is to enable them to analyse nutritional profiles of their patients and prescribe diets to them based on nutritional requirements, as well as use herbs in the management of various diseases.

THEORY

I. Introduction of Nutrition:-
   a) History of Nutrition
   b) Progress in Food Science
   c) Basic Principles of Nutrition
   d) Food , Nutrition & Health
   e) Need of Complete Nutrition
   f) Nutritional Basis of Life and Life in Connection with Food
   g) Composition of Body in Relation to Nutrition

II. Components of Food and their Classification:-
   a) Carbohydrates
   b) Proteins
   c) Lipids
   d) Vitamins
   e) Minerals and Trace Elements
   f) Water and Electrolytes
   g) Metabolism and Energy Needs of the body
   h) Energy Balance and the regulation of the body weight
   i) Enzymes

III. A. Food Groups:-
   a) Cereals
   b) Millets and Coarse grains
   c) Pulses
   d) Green leafy Vegetables
   e) Other Vegetables
   f) Roots & Tubers
   g) Fruits
   h) Milk & Milk Products
   i) Sugar & Jaggery
   j) Honey
   k) Nuts & Oil-seeds
   l) Spices & Condiments

B. Nutritive Values of Food ingredients commonly used in India

IV. The Science & Fine Art of Food & Nutrition:-

1. Philosophy of Nutrition
2. Calories: Measuring what we eat.
3. Law of the Minimum
4. Organic foods & Organic acids
5. Organic Vs. Inorganic Foods
6. Salt Eating, Salt Stimulation Vs. Good Diet
7. Fruitarianism and Vegetariansm
8. Nature's Food Refinery
9. The Digestibility of Foods
10. Mental Influences in Nutrition
11. Enjoying our Food
12. Absorption of Food
13. Uses of Food
14. How much shall we eat?
15. How to Eat?
16. Correct Food Combining - Food Combining Charts
17. Effects Of Cooking
18. Uncooked Foods (Raw Eating)
19. Salads
20. Conservative Cooking
21. Effects of Denatured Foods
22. Under Nutrition
23. Hypo-Alkalinity
24. Diet Reform Vs. Supplemental Feeding
25. Beginning the Reform Diet
26. Building the teeth
27. The Eliminating Diet
28. Feeding In Disease
29. The Three Year Nursing Period
30. Cow"s Milk
31. Pasteurization
32. Mother's Milk
33. Should Baby Be weaned?
34. No Starch for Infants
35. Three Feeding a Day
36. Feeding of Infants
37. Feeding Children From Two to Six Years
38. Man Shall Not Diet With Food Alone
39. Our Denatured Soil

V. Food as Medicine - Known Facts
   1. Proteins are Body Builders
   2. Proteins can be Body Killers
   3. Fats -Concentrated Body Fuels
   4. How Foods May Poison?
   5. Vegetables as Do It- Yourself Therapy
   6. Solid foods: When, What Kind, How Much?
   7. Vitamins and Supplements for all ages
   8. The Vitamins: Proof of natural food instincts
   9. Facts about common foods
   10. The Stimulant Delusion

VI. Food & Toxins
   1) Infective agents & Toxins in food
   2) Food Adulteration and Consumer Protection.
   3) Food additives
   4) Health hazards of added chemicals in foods
   5) Nutrition & Infection
   6) Study about adverse effect of Alcohol & Tobacco

VII. Nutritional Diagnosis

VIII. Public Health and Nutrition-
   1) Education in Nutrition
   2) Nutritional Program
   3) Nutrition Survey and Methodology
   4) Balanced Diets
   5) Nutritional assessments, Social aspects of the Nutrition
   6) Fortification and Enrichment
   7) Exercise in Balanced Diet
   8) Nutrition in relation to disaster management
   9) Nutritional requirements of special groups

IX. Nutrition in Health-
   1) Human Nutritional requirements
   2) Nutrition in Pregnancy , Lactation , Infancy, Childhood, Adolescence and Old Age
   3) Nutrition and Immunity

X. Nutritional deficiency diseases, Preventive and Curative approach

XI. The Optimum Nutrition Program for Correcting Disease & Restoring , Building and Maintaining Health

DIETETICS-THEORY

1. Concept of Health in Naturopathy
2. Dietetic principles in Naturopathy
3. Concept of wholesome diet
4. Medicinal values of Foods
5. Natural qualities / properties / character foods in Naturopathy / Ayurveda / Modern Nutrition
6. Natural food and health-
   a) Importance of Green Vegetables, other vegetables, fruits and the ingredients
   b) Chemical Composition of different raw juices , their effects and uses- Ginger,

Raddish, Bottlegourd,Wheat grass, Beetroot, Cabbage, Carrot, Cucumber, Lettuce, Garlic, Onion, Lemon, Papaya,Knol-kol,Pineapple, Mango, Tomato, Pomegranate, Grapes, Apple, Bittergourd, Ashgourd, Bael fruit , Spinach,Pumpkins, Watermelon, Indian Gooseberry , Orange , Sweet Lime, whey water & Neera etc.

c) Sprouts, their Nutritive Values and Methods of Sprouting

d) Food Values in Raw states, germinated form and Cooked form

e) Comparison with raw and cooked foods

7. Diet for Physical Labor & Mental work
8. Arguments from comparative Anatomy , Physiology, Chemistry & Hygiene
9. Naturopathic Hospital dietetics and their classification
10. Disease management with diet:-

    Diabetes, Renal diseases, Anaemia, PEM, Peptic Ulcer, Constipation, Malabsorption syndrome, Liver diseases like Jaundice, Fatty liver etc. HBP, LBP, Atherosclerosis, Gall Bladder disease, Cancer and arthritis
11. Liver & Gall bladder detox
12. Food allergy and dietary management
13. Diet for Weight Reduction & Weight Gaining
14. Dietary modification for specific condition
15. Dietary reaction for a different population groups with special reference to pregnancy, lactation,Infancy
16. Seasonal changes in the dietary pattern inAyurveda/Naturopathy and Modern nutrition
17. Food ,Sanitation, hygiene and health
18. Naturopathic approach towards vegetarian and non-vegetarian food
19. Harmful effects of the food colours, preservatives, pesticides, artificial manures
20. Dietary fibre and its therapeutic effects (e.g. constipation, ano-rectal disorders, colonic disorders, GIT disorders, D.M. etc.)
21. Geriatric nutrition and diet
22. Diet in exercise, sports, games and athletics
23. Paediatric Nutrition
24. Nutrition and life Span: How to Prolong Life & Postpone Death?
25. Diet, Fasting and Disease.
26. Vegetarianism: Its Positive and Negative aspects in Naturopathy
27. Customs and manners of eating:Different views, Effect of emotional state on food utilization
28. Kalpa therapy in Naturopathy: Grapes, Mango, Matha, Milk Etc.
29. Ideal Diet, China study & Genuine Health Care
30. Food , Eating , Self-Healing , Recovery of vigor
31. Drugs Increase Nutritional Requirements
32. Toxicless Diet, Body Purification & Healing System
33. How Vitamin-C keeps you Young, Natural Anti-oxidants
34. Question of Quality & Quantity of Food
35. Hygienic Food & Hygienic Cookery
36. Physio-Pharmacology of Foods :-
    1. Anti-Bacterial/Anti-Septic Foods
    2. Anti- Coagulant Foods
    3. Anti- Depressant Foods
    4. Anti- Diabetic Foods
    5. Anti- Diarroheal Foods
    6. Anti-Inflammatory Foods
    7. Anti-Oxidant Foods

8. Anti-Viral Foods
9. Anti- Hypertensive Foods
10. Calming & Sedative Foods
11. Anti-Cancerous Foods
12. Carminative Foods
13. Cholesterol Lowering Foods
14. Diuretic Foods
15. Immunity Enhancing Foods
16. Life Prolonging Foods
17. Memory Enhancing Foods
18. Expectorant Foods
19. Oestrogenic Foods
20. Analgesic Foods
21. Aphrodisiac Foods
22. Anti-UlcerFoods
23. Anti-PyreticFoods
24. Anti-Spasmodic Foods
25. Spoliative & Sudorific / Diaphoretic Foods
26. Eliminative Foods
27. Cooling & Heating Foods
28. Anti- Emetic Foods
29. Purgative & Laxative Foods

HERBOLOGY THEORY

a) Introduction to Herbology. The following herbs are to be studied with respect to their source and therapeutic uses.
b) Botanical details shall be avoided.
c) Botanical Name :-

Emblica Officinalis.	Psoralea Corylifolia
Cassia Fistia.	Taxus Baccata .
Ficus Glomerata.	Aegle Marrnelos
Veliverta Zizanodies	Semecarpus Anacardium
Cinnamomum Camphora	Phyllanthus Niruri
Monardica Charantia	Piper Nigrum
Tribulus Terrestris	Santhalum Album
Myristiba Fragrans	Santhalum Album
Cuminim Cyminum	Allium Sativam
Sesamum Indicum	Mimosa Pudica
Ocimum sanctum	Acorus Calamus
Punica Granatum.	Asparagus Racemosus
Coriandrum Sativum.	Rauwoffia Serpentina
Azadirachta Indica.	Curcuma Longa
Allium Cepa.	Terminalia Chebula
Piper Longum	Ferula Narthex
Syzygium Aramaticum	Terminalia Belerica
Gingiber Officinalis	

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

a) Describe fundamentals of nutrition, with respect to different nutrients and food groups;

b) Illustrate details of nutritional requirements for different age groups, as well as pregnant and lactating women;

c) Classify modern nutrition to traditional Naturopathic diets;

d) Illustrate the use of specific herbs in common diseases, with therapeutic values.

e) Analyse the nutritional status of a patient; Plan, implement and evaluate nutritional advice for people of different ages and patients of different diseases, including the use of herbs.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

NUTRITION DIETETICS AND HERBS PRACTICALS

1. Visits to the dietetic department of the hospital
2. Menu planning using natural foods and raw foods in general patients
3. Demonstration of sprouts
4. Preparation of low cost balanced diet for different population groups using natural foods
5. Modification of normal diet in consistency-liquid full soft
6. Canteen duties at nature cure hospital
7. Knowledge of Sathvic food preparation at nature cure hospital
8. Visit to different nutrition centres like NIN - Hyderabad, CFTRI (Mysore)

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

a) Understand the procedures and nuances in approaching a patient and taking a detailed history and writing a case report;
b) Illustrate examination procedures and techniques generally as well as for specific systems and make provisional diagnoses of common diseases;
c) Describe laboratory investigations used for supporting the provisional diagnosis made after history taking and examinations;
d) Analyse and interpret any further investigations required for the provisional diagnosis made

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Recommended Text Books-

1	Davidson and Passamore Human Nutrition and dietetics	By Passmore, Eastwood
2	Cinical Dietetics and Nutrition	By F.P. Antia
3	Normal and Therapeutics nutrition	By Corinne H. Robinson Marilyn R. Lawler
4	Essentials of Food and Nutrition	By Swaminathan
5	Foundations of Normal and Therapeutic Nutrition	By Randall Teltal
6	Nutrition and dietetics	By Subhangini Joshi
7	Sprouts	By J.D. Vaish, Yoga Samsthan
8	Medical Secrets of Your Food	By Aman
9	Mucusless Diet healing System	By Prof. Arnold Ehret
10	Raw Eating	By Aterhov
11	The Science and Fine Art of Food & Nutrition	By Herbert M. Shelton
12	Nutritive value of Indian foods	By NIN B.S. Narsinga Rao
13	Text book of Nutrition and Dietetics	By Sri Lakshmi
14	All publications of NIN, Hyderabad	

Reference Book-

1	Food and Nutrition	By Gupta
2	Modern Nutrition in Health and Disease	By Shills
3	Human Nutrition	By Maxine E.Mc. Divit and Sumati Rajgopal
4	Superior Nutrition	By Herbert M. Shelton
5	All publications on Nutrition	By National institute of Nutrition, Hyderabad.
6	Periodicals of Indian Journal of Medical Research.	
7	Indian Journal of Nutrition and Dietetics	
8	Nutrition survey of India	
9	A Complete Guide to Vitamins	Edited By J.I. Rodele and Staff.
10	Nutrition	By Chaney and Ross.
11	The Complete Book of Food and Nutrition	By J.I. Rodele and staff.
12	Food Remedies	By S.J.Singh.
13	The Sprouting Book	By Ann Wigmore
14	Dictionary of Natural Foods	By William L.Esser
15	Healing through Natural Foods	By H.K. Bakhru
16	Food Combining Made Easy	By Herbert M. Shelton
17	Encyclopedia of Fruits, Vegetables, Nuts & Seeds for Healthful Living	By JosephM.Cadans
18	Nutritive Value of Indian Food Stuffs	By S.J. Singh
19	Diet & Nutrition	By Rudolph Ballentine
20	Nature's Healing Grasses	By H.E. Kirschner
21	Diet to Dissolve Kidney Stones	By Dr. S.J. Singh
22	The Vitamin & Health Encyclopedia	By Jack Ritchason
23	Food is Your Best Medicine	By Henry G. Bieler
24	Natural Dietetics	By Dr.J.M. Jussawala
25	The Grape Cure	By Johanna Brandt
26	Aahar hi Aushadhi hai	By Dr. Hiralal
27	The Hippocrates Diet and Health Program	By Ann Wigmore
28	The Natural Food of Man	By Hereward Carrington
29	Sugar - The Curse of Civilization	By J.J.Rodale
30	Foods That Heal	By H.K. Bakhru
31	Anubhav aur Sar	By Dr. Sohanlal Nishkam Karmyogi
32	Protective Foods in Health &Disease	By Kulranjan Mukherjee
33	Miracle of Garlic	By Dr. Paavo Airola
34	Old age, its causes &prevention	By Sanford Bennett
35	The Encyclopedia of Health and Physical Culture (Vol 2)	By Bernarr Macfadden

HERBOLOGY BOOKS:

1	Fundamentals of Ayurveda	By K.N. Udupa
2	Fundamentals of Ayurveda (ISM, Bangalore Publication)	By Mahadev Shastri M.
3	Swastha Vriptta Vignana	By R.H. SINGH
4	Arogya Prakash	By Ramnarayana Vaidya
5	Astaanga Hirudaya	By Vagbhatta
6	Charak Samhita	By Charak
7	Sushrut Samhita	By Sushrut
8	Herbs that Heal	By H.K. Bakhru

2. OBSTRETRICS AND GYNAECOLOGY

Course type- Core Course
Course code–BNY-403, BNY-404P
Credits -6

OBJECTIVES

The objective of teaching Obstetrics and Gynecology to undergraduate students is to provide them with the comprehensive knowledge of anatomy, physiology and pathophysiology of the reproductive system and gain the ability to optimally manage common problems.

- **Knowledge:**

After the completion of the course, the student shall be able to:

1. Delineate the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it;
2. Detect normal pregnancy, labor, and puerperium;
3. Elucidate the leading causes of maternal and perinatal morbidity and mortality;
4. Understand the principles of contraception and various methods employed, methods of medical termination of pregnancy, sterilization and their complications;
5. Recognize the use, abuse and side effects of drugs in pregnancy, pre-menopausal and post-menopausal periods;
6. Explain the national programmes of maternal and child health and family welfare and their implementation;
7. Assess different gynecological diseases and describe principles of their management;
8. Explain the indications, techniques and complications of procedures like Caesarean section, laparotomy, abdominal and vaginal hysterectomy, and vacuum aspiration for Medical Termination of Pregnancy (MTP).

- **Skills:**

After the completion of the course, the student shall be able to:

1. Examine a pregnant women, recognize high risk pregnancies and make appropriate referrals;
2. Recognise complications of delivery and provide postnatal care;
3. Recognize congenital anomalies of newborn;
4. Advise a couple on the use of various available contraceptive devices;Perform pelvic examination, diagnose and manage commongynaecological problems including early detection ofgenital malignancies;
5. Interpret data of investigations like biochemical, histopathological, radiological, ultrasound etc

- **Integration**

  At the completion of training, the student should be able to integrate knowledge of Obstetrics and Gynaecology to manage related ailments and educate masses on family planning norms.

OBSTRETRICS AND GYNAECOLOGY THEORY

SECTION- A

1. Basic anatomy and Physiology
    - Anatomy and Physiology of female genital organs and pelvis.
    - Maturation and fertilization of ovum.
    - Development of placenta.
    - Embryology of uterus.

2. Physiology of Pregnancy
    - Maternal changes due to pregnancy
    - Diagnosis of pregnancy
    - Differential diagnosis of pregnancy
    - Foetus in normal pregnancy
    - Ante-natal care.

3. Physiology of Labour :-
    - Causation and stages of labour
    - Mechanisms of labour
    - Conduct of Delivery - the Natural means.

4. Physiology of Puerperium
    - Phenomena of normal puerperium
    - Care of Pureperium
    - Care of new-born child

5. Pathology of Pregnancy
    - Hyperemesis gravidarum
    - Anaemia in pregnancy
    - Diseases of urinary system
    - Diabetes in pregnancy
    - Abortion
    - Ectopic pregnancy
    - Ante-partum haemorrhage
    - Placenta previa

6. Pathology of Labour
    - Occipital - posterior position
    - Breech presentation
    - Multiple pregnancy
    - Contracted pelvis
    - Management of labour in contracted pelvis
    - Complications of 3rd stage of labour

7. Affection of New –Born
    - Asphyxia neonatorum
    - Preterm baby

8. Obstetrical Operations
    - Forceps

- Cessarean section
- Induction of abortion and labour

9. Pathology of Puerperium
    - Puerperal infections
10. Miscellanencous
    - Perinatal mortality and Maternal mortality
    - Post-dated pregnancy
    - Placenta insufficiency.
    - Control of contraception
    - Medical Termination of Pregnancy.
    - Pre-term labour.
11. Naturopathic Application:
    - Hydrotherapy in Pregnancy
    - Importance of Naturopathic Diet in Pregnancy & Puerperium
    - Underwater delivery
12. Yogic application:
    - Exercises in –
        - Ist Trimester
        - IInd Trimester
        - IIIrd Trimester
        - Puerperium
    - Pelvic Floor Exercises
13. Natural Childbirth
14. Birth Control: Natural and Unnatural
15. Holistic Approach to menstrual Problems
16. Vaginitis: A Natural Approach
17. Breast Cancer Can Be Prevented
18. Varicose Veins: Prevention and Treatment
19. Understanding the Pregnancy: The Miracle of Creation
20. What Smoking Does to Women?
21. Depression : A New Epidemic
22. What Woman Should Know About Anaemia?
23. Overweight: Must It Be A Lifetime Struggle?
24. Menopause: Dreadful Affliction or Glorious Experience?
25. Uterine Tumors can Be Prevented

Section - B

1. Gynaecological diagnosis
2. Malformation of Female genital organs
3. Diseases of vulva
4. Diseases of vagina
5. Sexually transmitted diseases in female
6. Diseases of urinary system
7. Trophoblastic diseases

8. Disorders of menstruation
9. Prolapse of uterus
10. New Growths of uterus
11. Endometriosis and adenomyosis
12. Diseases of ovary
13. Pelvic inflammatory diseases

COURSE OUTCOME

After the completion of the course, the student shall be able to:

a) Illustrate the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it, Detect normal pregnancy, labor, and puerperium;

b) Classify the leading causes of maternal and perinatal morbidity and mortality;

c) Understand the principles of contraception and various methods employed, methods of medical termination of pregnancy, sterilization and their complications;

d) Describe the national programmes of maternal and child health and family welfare and their implementation;

e) Analyse different gynecological diseases and describe principles of their management, different techniques.

f) Analyse a pregnant women, recognize high risk pregnancies and make appropriate referrals;

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

OBSTETRICS & GYNAECOLOGY PRACTICALS

1. History taking of ante-natal and gynaecological cases.
2. Demonstration of physical examination of ante-natal and gynaecological cases.
3. Demonstration of conductive labour, normal delivery and use of minor instruments during delivery.
4. Demonstration of various equipments used in obstetrics and gynaceology
5. Case -history writing of ante-natal and gynaecological cases (25)

COURSE OUTCOME

After the completion of the course, the student shall be able to:

a) Illustrate the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it, Detect normal pregnancy, labor, and puerperium;

b) Classify the leading causes of maternal and perinatal morbidity and mortality;

c) Understand the principles of contraception and various methods employed, methods of medical termination of pregnancy, sterilization and their complications;

d) Describe the national programmes of maternal and child health and family welfare and their implementation;

e) Analyse different gynecological diseases and describe principles of their

management, different techniques.

f) Analyse a pregnant women, recognize high risk pregnancies and make appropriate referrals;

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

Recommended Text Books -

1	Clinical Obstetrics	By Mudaliar and Menon
2	Text Book of Obstetrics	By C.S. Dawn
3	Shaw‟sText Book of Gynaecology	By Shaw
4	Text Book of Gynaecology	By Dr. Dutta
5	Text Book of Obstetrics	By Dr. Dutta
6	Text Book of Gynaecology	By Nina & Michael Shandler
7	Yoga for Pregnancy & Natural child Birth	
8	Women Disease & Easy Child Birth	By J.H.Tilden
9	Every women‟s book.	By Dr. Paavo Airola

Reference Books-

Illustrated Book of Obstetrics & Gynaecology - By Dr. Gevan

3. YOGA THERAPY

COURSE TYPE- CORE COURSE
COURSE CODE- BNY-405, BNY-406P
CREDITS- 5

The objective of teaching *Yoga* Therapy to undergraduate students is to provide them with comprehensive knowledge of *Yoga* and the physiological effects of various *yogic* practices and utilization of the same for therapeutic purposes.

THEORY

1. Introduction to Yogic Therapy / Basis of Yogic Therapy.
2. Role of Asanas in curing various diseases.
3. Specific importance of Pranayama in curing various diseases.
4. Vital role of Bandhas, Mudras, Drishtis, in curing various diseases.
5. Role of Shat-kriyas in curing various diseases particularly digestive disorders.
6. Role of general exercises.
7. The effects of various Yogic practices on different systems

   Viz : Skeletal system, Endocrine System, Nervous system, Digestive System, Respiratory system, Excretory system, Cardio-vascular system, Muscular system, Reproductive system
8. Research methods in yogic therapy, statistical analysis etc.
9. Yogic therapy for:
   - Cardio-Vascular diseases
   - Psychiatric diseases
   - Mental retarded diseases
   - Neuro-Muscular diseases
   - Gastro-intestinal diseases
   - Hormonal disease
   - Respiratory disorders
   - Metabolic disorders
   - Opthalmologic disorders
   - Paediatric disorders
   - E.N.T. Disorders
   - Obstetrics & Gynecology disorder
10. Meditation and its applications on psycho-somatic disorders.
11. Yoga & Relaxation Techniques
    - QRT-Quick Relaxation Technique
    - IRT - Instant Relaxation technique
    - DRT-Deep Relaxation technique
12. Teaching methods of Yoga to Public, Students and patients. Model lesson planning and adoption of Yoga in education system, limitations, vidhi and Nisheda (right and wrong).
13. Workshop on Yogic therapy.
14. Dessertations.
15. Advanced techniques of Yoga therapy.
16. Pranic Healing & Reiki Therapy.
17. Yoga and Mental health-Total integration of personality, correct mental behaviour and attitude, harmonial relationship of body and mind, self content tranquilising effect, psychology of spiritual growth and spiritual value, toning judgement, pure consciousness, mode of living and disciplined life.

18. Applied psychology :-

    I. Stress -Its causes, effects and control

II. Historical perspective, Identifying psychological disorders

- Anxiety Disorders
- Dissociative Disorders
- Somato form Disorders
- Sexual Disorders
- Mood Disorders
- Personality Disorders
- Schizophrenia

III. Therapy for psychological disorders

Psychotherapy, therapy of Interpersonal relations, behavioral therapy

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Describe the physiological effects of various *yogic* practices like *kriyas*, *asanas*, *pranayamas*, *mudras*, *bandhas* , *drishtis*, Guided relaxation and Meditation;
2. Dfine rules and regulations of *Yoga* to be followed;
3. Understand the therapeutic aspects of *Yoga* as applied to different disease conditions;
4. Illustrate the concept of health and disease in *yogic* lore and role of stress in disease causation and management of the same with *Yoga*;
5. Analyse knowledge of *Yoga* therapy in managing various diseases;
6. Demonstrate usage of therapeutic aspect of *Yoga* in promotive, preventive, curative and rehabilitativetherapy.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

YOGA THERAPY PRACTICAL

Demonstration and instructions of advanced yoga posture, kriyas, meditation, and advanced yoga practices.

Case discussion -25

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Demonstrate basic understanding of procedures of stretchingand exercises;
2. Deliver a meditative session using any of the meditative styles;
3. Describe fundamentals of yoga, with respect to its principles;
4. Analyse the patient, and modulate a yoga session for the same.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

REFERENCE BOOKS:-

1	Yogic therapy	By Dr. Vinekar, Govt. of India. Publication
2	Yogic therapy	By Dr. Giarde
3	Treatment of common	By Swami Satyananda Saraswati
4	Diseases through yoga	
5	Seminars on Yoga, Science & Man	By CCRYN, Delhi Publication.
6	Yoga Nidra	By Swami Satyananda Saraswati Bihar School of Yoga
7	The Ancient Science and Art of Pranic Healing.	By Choa Kok Sui
8	Pranic Psychotherapy	By Choa Kok Sui.
9	Psychology	By Robert A Baron.
10	Garifeld Special Psychotherapy	By John Wiley & Sons.
11	Hand Book of Behavior Modification& therapy	By Plenum press.
12	Stress & Mental Disorders	By Crarrett J.E. Raven Press, Newyork
13	Counseling and evidences	By Adams J.T. moe. Million co.
14	Stress Management Research papers	By V.K. Yoga Bangalore.

4. HYDROTHERAPY

Course type- Core Course
Course code – BNY-407, BNY-408, BNY-409P
Credits-4

OBJECTIVE:

The objective of teaching Hydrotherapy and Mud Therapy to undergraduate students is to provide them with comprehensive knowledge of treating diseases using water and mud, and the physiological effects of various kinds of such applications, and utilisation of the same for therapeutic purposes.

- **Knowledge:**

After the completion of the course, the student shall be able to:

a) Describe the properties and chemical composition of water and mud used for therapeutic purposes, physiology of the skin, production of heat and body temperature regulation, which are essential as a foundation for hydrotherapy.
b) Illustrate physiological effects of hot and cold water upon the different systems of the body and applications to reflex areas**;**
c) Explain action and reaction mechanisms and physiology, with their effects and uses
d) Demonstrate use of water in preservation, acute diseases, chronic diseases;
e) Show in-depth knowledge of general principles of hydrotherapy, therapeutic applications of water, along with therapeutic actions, indications and contra-indications; and classification of mud, storing of mud, modes of mud treatment, cosmetic uses of mud and research updates in hydrotherapy and mud therapy;
f) Demonstrate techniques and procedures of various types of hydriatic applications;

- **Skills:**

After the completion of the course, the student shall be able to:

a) Utilise knowledge of hydrotherapy and mud therapy in managing various diseases;
b) Demonstrate usage of therapeutic aspect of hydrotherapy and mud therapy treatments in promotive, preventive, curative and rehabilitative therapy.
c) Institute and evaluate remedial measures in hydrotherapy for various disease conditions in clinical as well as research settings.

- **Integration**

At the completion of training, the student should be able to integrate knowledge of hydrotherapy in various diseases and efficiently utilise the same for therapeutic purposes.

THEORY

PAPER-I

1. Introduction and History.
2. Physical properties and chemical composition of water.
3. Physiological basis of Hydrotherapy:- The Skin and its anatomical construction, functions of the body production of heat and its distribution in the body, regulation of the body temperature, conditions that increase and decrease heat production in the body, body heat and body temperature
4. Importance of water to human body.
5. Physiological effects of water on different systems of the body
   i. General and Physiological effects of heat upon:-
      a) Skin

b) Respiration
c) Circulation
d) Nervous System
e) Heat and its production, dissipation etc.
f) Tactile and temperature sense

ii. General and physiological effects of cold upon skin, respiration, circulation, nervous system, G.I.T., Body temperature and its maintenance.

6. Reflect areas of the body, results of the application of hot and coldover reflex areas.
7. Action and reaction, incomplete reaction, Conditions that encourage and discourage reaction, internal reaction, thermic reaction, modified thermic reaction.
8. Place of water in preservation.
9. Place of water in Acute diseases.
10. Place of water in Chronic diseases.
11. Magnesium sulphate - use in Hydrotherapy

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

PAPER - II

1. General Principles of Hydrotherapy.
   a) General rules of hydrotherapy
   b) Therapeutic significance of reaction
   c) Adaptation of individual cases
   d) Exaggeration of symptoms under treatment, the untoward effects and how to avoid them
   e) General indications and contra- Indications.
2. Therapeutic actions and use of Hydrotherapy:
   a) Classification of Hydriatic effects, General principles excitation and Depression.
   b) Primary excitant effects when to apply and when not to apply.
      I. Local haemostatic effects.
      II. Cardiac effects Hydratic heart tonics
      III. Uterinc excitations, emanogogic effects
      IV. Vesical excitations
      V. Intestinal excitations, peristalitic effects
   c) Secondary excitant effects:-
      1. Restorative effects.
         - Tonic effects of cold water, physiological effects of cold water, Cold water Vs. Medical tonics, application diseases.
         - Anaemia, Neurasthenia, Hypochondria Cerebral congestion, Rheumatism, Diabetes mellitus, Valvular heart diseases.
      2. Calorific effects.
      3. Diaphoretic effects.

- Importance of attention to the skin in Chronic diseases - alternative & qualitative effect - Hot bath in brights diseases, Sweating baths in dropsy and obesity, Depurative or eliminative effects, Toxemia in Rheumatism.

4. Expectorant effects.
5. Diuretic effects - Brights disease, Uremia – eclampsia, Atonic Dyspepsia, Hyperacidity.
6. Revulsive and derivative effects, flexion, revulsive methods for Combating superficial anaemia and for relief of deep congestion method adopted to anaemia of deep seated organs revulsion on analgesic measure.
7. Resolvent effects

IV. Sedative effects- general sedatives - local sedatives.

1. Sedatives of the circulatory system- antiphlogestic effects, inflammation, pneumonia, pleurisy and other acute disorders.
2. Nerve sedatives, hypnotic, calmative analgesic, anesthetic, antispasmodic, insomnia, chorea, spastic paralysis, exophthalmic goiter, mania, epilepsy and various painful conditions.
3. Anti- thermic and antipyretic effects, relation of heat production and heat elimination to antipyretic methods, principles that govern the application of hydriatic measures for the reduction of temperature in fevers , methods that may be efficiently employed in various morbid conditions and effects, indications and contra- indications.
4. Secretory and sedative effects - prophylactic uses.

f. Cold bathing in infancy and early childhood.
g. The cold bathing for Adults.
h. The cold baths for women.
i. The cold bath in old age- precautions.

3. The techniques of Hydrotherapy:-
   - Plain water bath
   - Cold hip bath - Kellog's & Kuhne's sitz bath
   - Shallow bath - for males & females
   - hand and arm Graduated bath,
   - foot bath,
   - hot and cold natural bath
   - alternative leg bath
   - Non revulsive bath
   - Immersion bath
   - Cold plunge bath
   - Whirl pool bath
   - Aeration bath
   - Vichy spray massage
   - Rapid bath
   - Brand –bath
   - Fever bathing, Sea bathing.
   - Various baths and air baths, Russian bath, Turkish bath, Steam inhalation, Hot air bath, Local hot air bath, Super-hot air bath, Cold air bath, Indoor and out-door baths.
4. Pool Therapy:-
   a) Introduction
   b) Principles of treatment Part I and Part II.

c) Physiological and Therapeutic effects of exercise in warm water.
d) Indications and contra - indications.
e) Dangers and precautions.

5. **Douches :-** Cold Douche ,Hot Douche, Neutral Douche, Alternative Douche, Underwater Douche, Contrast Douche, Horizontal Jet Cephalic Douche, Lumbar Douche, Fan Douche, Rain Douche or Shower Douche Heptic Douche, Circular Douche and Semi Circular Douche, Cerebrospinal Douche, Plantar Douche Percussion Douche, Scotch Douche, Revulsive Douche, Ascending Douche, Calliper Douche, Filiform Douche Fog Douche Massage Douche, Shoulder Douche, Thoracic Douche, Abdominal Douche Anal Douche, Perineal Douche Pulmonary Douche, Cardiac Douche, Gastric Douche, Enteric Douche, Renal Douche Articular Douche Vapour Douche.

6. **Fomentation and Stupes:-**The hot water bag, the siphon hot water bag, the thermopore, the mustard Fomentation, clay and glycerin poultice, charcoal poultice, cotton poultice.

7. **Compresses and Packs :-**

   The wet sheet pack, cooling pack, cold shower pack, sweating pack, very cold compress, proximal compress, neutral compress, alternate compress, repulsive compress, compress of ten days for injuries and eruptions, alternative ten applications to the head and spine, local packs, wet girdle pack, dry abdominal bandage. Abdominal heating compress, Head pack, Spinal pack Hot and cold heat compress, Hot and cold lung compress Hot and cold gastro-hepatic compress,Hot and cold renal compress Hot and cold intestinal compress Hot and cold pelvic compress Hot and cold abdominal pack Hot and cold spinal pack Hot and cold pancreatic pack.

   SPECIAL FORMS OF COMPRESS:-Cephalic compress, Chest pack, Triangular chest Pack, Half chest compress, Joint compress, Pelvic pack, Foot pack, Cold spinal compress, Towel chest Pack, Pericardial or cardiac compress, Hip pack, Perineal compress, Prone Packs , Lumbar compress.

8. **Internal Use of Water:-**Irrigations and enema (Colon Flushing) Cold water drinking, Hot water drinking. Water emetic, irrigation of ear, Nasal Irrigation, Vaginal irrigation, Intra-uterine irrigation, rectal irrigation. Enema :- Hot, warm, Cold, graduated enema. Coloclyster, Retentive enema, Tonic Enema.

9. **Hydriatic Prescription Making:-**
   a) The natural defense of the organism.
   b) Procedures for increasing vital resistance.
   c) Procedures which excite the central ganglia.
   d) Procedures that increase oxidation.
   e) Measures that encourage general and local metabolic activity.
   f) Procedures that increase general blood movement and local blood supply.
   g) Measures that increase heat production.
   h) Measures that increase the elimination of heat.
   i) Measures that combat bacterial development of blood.
   j) Measures that increases/ lessen heat elimination.
   k) Hydratic incompatibility.
   l) Hydrotherapy as a means of rehabilitation and health promotion.
   m) Emergency treatments in Hydrotherapy.

10. Mud Therapy:-

a. Introduction to Mud Therapy.
b. Classification of mud for therapeutic use.
c. Precautions for storing mud.
d. Methods of treatment of mud - applications, packings hot poultices, effect of mud on different system of body.
e. Natural mud bath, full and partial mud packs, mud plaster, thermal bath, dry pack, sand pack and sand baths.
f. Cosmetic uses of mud.

COURSE OUTCOME

After the completion of the course, the student shall be able to:-

i. Describe the properties and chemical composition of water and mud used for therapeutic purposes, physiology of the skin, production of heat and body temperature regulation, which are essential as a foundation for hydrotherapy.
ii. Illustrate physiological effects of hot and cold water upon the different systems of the body and applications to reflex areas**;**
iii. Explain action and reaction mechanisms and physiology, with their effects and uses.
iv. Demonstrate use of water in preservation, acute diseases, chronic diseases;
v. Corelate general principles of hydrotherapy, therapeutic applications of water, along with therapeutic actions, indications and contra- indications; and classification of mud, storing of mud, modes of mud treatment, cosmetic uses of mud and research updates in hydrotherapy and mud therapy;
vi. Demonstrate techniques and procedures of various types of hydriatic applications.

Assessment Scheme:

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

HYDROTHERAPY PRACTICALS

1. Demonstration of various therapeutic Procedure and treatments inHydrotherapy during clinical classes at the hospital.
2. At the end of final B.N.Y.S. Course, candidate should be in a position to give treatments independently.

COURSE OUTCOME

After the completion of the course, the student shall be able to

1. Demonstrate use of water in preservation, acute diseases, chronic diseases;
2. Correlate general principles of hydrotherapy, therapeutic applications of water, along with therapeutic actions, indications and contra- indications; and classification of mud, storing of mud, modes of mud treatment, cosmetic uses of mud and research updates in hydrotherapy and mud therapy;
3. Demonstrate techniques and procedures of various types of hydriatic applications.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

TEXTBOOKS:-

1	Baths	By S.J.Singh.
2	My Water Cure	By Sebastian Keneipp.
3	Rational Hydrotherapy	By Dr. J.H. Kellogg
4	The Healing Clay	By Michel Adserra.
5	Our Earth and Cure	By Raymond Dextroit.

REFERENCE BOOKS:-

1	Hand Book of Hydrotherapy	By Shew, Joel.
2	Hydrotherapy in Practice	By Davis, B.C.& Harrison, R.A.
3	Medical Hydrology	By Sideny Licht.

5. PHYSIOTHERAPY

COURSE TYPE- CORE COURSE

COURSE CODE- BNY-410, BNY-411P

CREDITS-1.5

Objective:-

The objective of teaching physical medicine and rehabilitation to undergraduate students is to provide them with the knowledge and skills needed for utilization of Physical medicine for therapeutic, rehabilitative purposes.

THEORY

I. Basic Physics in exercise therapy:-

1. Mechanics : Force. Gravity, Line of gravity, center of gravity in human body, base, Equilibrium. And planes.

1.1 Mechanical Principles :- Lever, Order of Lever, examples in human body, Pendulum, Spring.

2. Introduction to Exercise Therapy:-

2.1 Starting Position :- Fundamental Starting positions, derived position, Muscle work for all the fundamental starting positions.

2.2 Classification of movements in detail :-

- Voluntary movements.
- Involuntary movements.

2.3 Active movements

2.4 Passive movements

2.5 Muscle strength: - Anatomy and physiology of muscle tissue, causes of muscle weakness/paralysis, preventing of muscles weakness/ paralysis, types of muscle work and contractions, range of muscle work, muscle assessment. Principles of muscle strengthening / re-education, early re-education of paralyzed muscles.

2.6 Joint movement :- Classification of Joint movements, causes for restriction of joint movement, prevention of restriction of joints range of movements , Principles of mobilizations of joint in increasing the range of motion. Technique of mobilization of stiff joint.

3. Relaxation:-Techniques of relaxation, Principles of obtaining relaxation in various positions

4. Posture:-Types, factor responsible for good posture, factor for poor development of good posture.

5. Co-ordinadion exercises:-Definition of co-ordinated movements, in- coordinated movements. Principles of co-ordinated movements, technique of co-crdination exercise.

6. Gait- Analysis of normal gait with muscles work, various pathological gaits.

7. Crutch Gait :- Introduction, crutch measurement, various types of crutch gait (in details)

8. Neuro- musculer facilitation techniques, functional re-education.

9. Suspension Therapy :- Principles of suspension, types of suspension therapy, effects and uses of suspension therapy , their application either to mobilize a joint or to increase joint range of motion to increase muscle power, explaining the full details of the components used for suspension therapy

ELECTROTHERAPY THEORY

1. Electrical fundamentals:-

a. Physical principles, structure and properties of matter, molecular atom, proton, neutron, electron, ion, etc., Electrical energy: Nature of electricity current, static electricity current, Electric potentials generated by cell, ohm"s law, joule"s law, Magnetic Energy: Nature and property of a magnet, magnetic induction, Show rule, maxwell"s cork-screw rule.

Electro-magnetic induction, principle and working of choke, coil, transformer, rectification of A.C. to D.C., Metal oxide Rectifier, semiconductor, Diode and triode, valves, principles of working in a capacitor, details of charging and discharging etc.

b. Transistors, measurement of current intensity,EMS and power, moving coil milometer and voltmeter.

2. Low Frequency Currents:-Nature and principle of production of muscles stimulating currents, types of low frequency currents used for treatment, Therapeutic electric stimulation, Intophoresis.
3. Preparation for electro therapy, preparation of apparatus, patient treatment technique. Stimulating the muscles of extremity, back and face through the motor points.
4. Faradic and galvanic currents.
5. High frequency current treatments :-Physics of high frequency currents, production of high frequency currents, principles, Bio Physics of heat, Physiology of heat and cold , Production, Physiological and therapeutic effects and uses. Technique of Treatments, Dangers and precautions, contra-indications of the following.
    a) Shortwave Diathermy
    b) Microwave Diathermy
    c) Ultrasonic Therapy
6. Principles of radiation therapy, physics of radiation therapy, laws governing radiation, Production. physiological and therapeutic effects, uses, techniques of treatment, dangers and precautions, contraindication, etc. of the following.
    a) Infrared radiation therapy.
    b) Ultraviolet radiation therapy
7. Laser therapy: Introduction, dosage, indication, contraindication.
8. Pneumatic pressure therapy: introduction, usage, indication, contraindication.
9. Chest physical therapy: indication and methods
10. Basic principles of transcutaneous nerve stimulation and interferential therapy.
11. Wax therapy-physics-physiological and therapeutic effect and uses, Techniques of application.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Illustrate principles of basic physics that act as a foundation for physical medicine
2. Describe exercise therapy in detail, including starting positions, movements and their types, muscle strength, joint movement, relaxation, posture, co-ordination, gait, walking aids, neuromuscular facilitation, suspension therapy and their therapeutic applications, including allied modalities like heat treatments and cryotherapy;
3. Understand electrotherapy in terms of fundamentals, principles, laws of electricity and magnetism, practical and theoretical aspects of electrotherapeutic applications, such as faradic and galvanic currents, high frequency currents, laser, ultrasound, radiation therapy (IR & UV), TENS and IFT.
4. Demonstrate usage of therapeutic applications of physical medicine in promotive, preventive, curative and rehabilitative therapy, focusing on rehabilitation.
5. Analyse remedial measures in *Yoga* for various disease conditions.

PRACTICALS I

1. Interrupted/modified D.C.
2. Stimulation of muscles directly.
3. Diagnostic tests:-
   a) F.G.Test.
   b) S.D.Curve
   c) Fatigue Test.
4. Uses of surged faradism and interrupted galvanism in various peripheral nerve lesions.
   - Neuroproxia
   - Axonotomosis.
   - Neurotomosis

PRACTICALS II

- High frequency current treatment

(a) Shortwave diathermy-setting up of apparatus including selection of method and electricity, Techniques, preparation of patient, checking, contra indications, application of SWD for various conditions and various parts of the body. Those must be practiced by the students.

(b) Microwave diathermy-setting up of apparatus including selection of method and electricity, Techniques, preparation of patient, checking, contra indications, application of MWD for various condition and various parts of the body. Those must be practiced by the students.

(c) Ultraviolet radiation: setting up of apparatus including selection of lamps technique of application of UVR for various conditions like test dose, general body bath, acne vulgaris, alopecia areata and total is, ulcers, psoriasis, rickets and general debility patients.

(d) Ultrasonics: setting up of apparatus, selection of dose, technique of application in various Condition and to various parts of the body.

PRACTICALS III

1) Demonstration and practice of Active and passive movements.
2) Demonstration and practice of putting suspension to shoulder joint, Elbow joint in upper limb, hip joint and knee joint in lower limbs for all movements. Demonstration of total suspension.
3) Muscle strength: Demonstration and practice of strengthening, re- education of weak/paralysed muscles of both upper and lower extremity, individual group muscles, abdominal muscle exercises.
4) Joint movements: Demonstration and practice of techniques to improve joint range of motion of hip joint, knee joint, ankle and foot in lower limb, shoulder joint, elbow joint, radio-ulnar joint, wrist joint & upper limb.
5) Demonstration and practice of free exercise to improve joint range of motion (Small joints, eg. hand, finger, toes etc.) Demonstrationandpracticeof all crawlingexercises, faulty posture. Correcting techniques.
6) Demonstration of various pathological gaits.
7) Measurement of crutches, walking aids, strengthening of crutch muscles, crutch balance, Demonstration and practice of all crutch gaits.
8) Breathing Exercises: Demonstration and practice of Diaphragmatic breathing, localised expansion exercises.
9) Passive stretching: Techniques of passive streching to sternomastoid muscle, shoulder abductors. flexors elbow flexors, supinator, wrist and finger flexors in

upper limbs passive streching to hip flexors,Adductors, ilio-tibialband, tensor fascia lata, quadriceps, knee flexors, tendoachillies etc.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

1. Illustrate principles of basic physics that act as a foundation for physical medicine
2. Describe exercise therapy in detail, including starting positions, movements and their types, muscle strength, joint movement, relaxation, posture, co-ordination, gait, walking aids, neuromuscular facilitation, suspension therapy and their therapeutic applications, including allied modalities like heat treatments and cryotherapy;
3. Understand electrotherapy in terms of fundamentals, principles, laws of electricity and magnetism, practical and theoretical aspects of electrotherapeutic applications, such as faradic and galvanic currents, high frequency currents, laser, ultrasound, radiation therapy (IR & UV), TENS and IFT.
4. Demonstrate usage of therapeutic applications of physical medicine in promotive, preventive, curative and rehabilitative therapy, focusing on rehabilitation.
5. Analyse remedial measures in *Yoga* for various disease conditions.

Assessment Scheme

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

BOOK REFERENCE (BOTH THEORY AND PRACTICALS)

1	Principles of Exercise Therapy	By Dena Gardiner.
2	Tidy's physiotherapy	
3	Cash text book of physiotherapy	
4	Clayton's Electrotherapy and Actinotherapy.	
5	Kisner's Theraupetic Exercise Foundation and techniques.	
6	Maggie's text Book of Physiotherapy	

6. HOLISTIC PREACTICES OF NATUROPATHY & YOGA

Course type- Core Course

Course code – BNY-412, BNY-413P

Credits-3.5

1. Objective:

The objective of teaching Holistic practices of naturopathy & yoga to undergraduate students is to train them to provide well integrated clinical service in Naturopathy & Yoga.

THEORY

I. Diseases of Various Systems:-

1. Cardiovascular Disorders
2. Gastrointestinal Disorders
3. Blood related Disorders
4. Respiratory Disorders
5. Neurological Disorders
6. Psychiatric Disorders
7. Musculoskeletal Disorders
8. E.N.T. Disorders
9. Ophthalmology Disorders
10. Obstetrics & Gynaecology Disorders
11. Paediatric Disorders
12. Metabolic Disorders
13. Hormonal Disorders
14. Neuromuscular Disorder
15. Mental Retardation Disorder
16. Psychological Disorder
17. Sexual Disorder
18. Post surgical Rehabilitation
19. Post Chemotherapy Rehabilitation
20. Skin Disorders
21. Tumors & Cancers
22. Affections due to Parasites
23. Affections due to Physical agents & Intoxicants
24. Care of Wounds, Burns, Bites & Stings
25. Accidents & Emergencies

II. Cure of Surgical Disorders:-

1. Deviated Nasal Septum
2. Tonsillitis
3. Appendicitis
4. Uterine Fibroid
5. Uterine Prolapse
6. Hernia
7. Intervertebral Disc Prolapse
8. Cervical Spondylosis & Slip disc
9. Calcaneal Spur
10. Osteoarthritis
11. Hydrocele etc.
12. Prostate
13. Hemorrhoids (Piles)
14. Fistula
15. Pyorrhea
16. Gall Stone & Renal Stone
17. Breast tumor.

COURSE OUTCOME

After the completion of the course, the student shall be able to:

a) Illustrate decision making in Naturopathy ;
b) Understand the basic principles of screening and prevention of disease;
c) Comprehend the scope of practice- patterns of use, fields of practice, regulations, limitations;
d) Understand the concept of healing and disease crises and management of the same.
e) Understand the pathogenesis of the disease in Naturopathy basis and preventive measures of the same;
f) Deduce and form a specific module of therapy for the particular patient with varied presentations.

Assessment Scheme: Theory

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

Assessment Scheme: Practical

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

7. HOSPITAL MANAGEMENT AND RESEARCH METHODOLOGY

Course type- Core Course Course code – BNY-414, BNY-415P

Credits-5.5

Objective:

The objective of teaching Research Methodology and Recent advances to undergraduate students is to provide them with the latest updated scientific, knowledge in the field of Naturopathy and *Yoga* and introduce them to research methodology.

The Course covers 3 aspects:

I) Medical Jurisprudence, Forensic Medicine & Toxicology,
II) Hospital Management (Naturopathy & Yoga) (Hospital Administration)
III) Research Methodology

THEORY

I - Medical Jurisprudence, Forensic Medicine & Toxicology

A. FORENSIC MEDICINE:

1. Definition of Forensic medicine and its scope.
2. Procedure of giving medical evidence with reference to Indian evidence act.
3. Methods of identification of living and dead body, race, age, sex etc.
4. Death:- Medico-legal aspects, certification of death, sudden death, causes, Medico- legal importance, sign of death, changes due to death and calculating time of death.
5. Medico legal autopsy.
6. Medico-legal wounds, their classification and study and medico-legal aspects.
7. Examination of blood stains, hairs and seminal stains.
8. Miscellaneous causes of death from heat, cold, electricity , Starvation etc.,
9. Violent asphyxia deaths: - Hanging, Strangulation, Suffocation and drowning.
10. Sexual Offences: - Impotency and sterility, Virginity, legitimacy, un-natural Offences, Medico-legal aspects, Anesthetic death.
11. Infanticide.
12. Medico-legal aspects of insanity.
13. Forensic Psychiatry.
14. Definition, Police inquest, difficulties in detection of crime, legal procedure in Criminal courts and their powers, oath, medical evidence, medical certificate, Dying declaration.
15. Rules of giving evidence, professional secrecy.
16. Post mortem examinations.
17. Death - signs of death cadaveric rigidity and spasm, putrefaction, estimation of Time since death.
18. Death from asphyxia, differences between hanging and strangulation, suffocation and Drawing.
19. Death from burns and scalds and lighting.
20. Rape and unnatural offences.
21. Abortion, pregnancy and delivery, miscarriage.
22. Law in relation to a medical man, medical ethics, duties, professional privilege and responsibilities.

B. TOXICOLOGY:

1. General considerations of poisoning and classification.
   a) Actions of poisons, factors modifying their action.
   b) Diagnosis of poisoning.
   c) Treatment of poisoning in General.

2. Poisons:-

- Corrosives
- Nonmetallic poisons
- Insecticides and weed killers
- Metallic poisons
- Organic Irritant poisons
- Somniferous poisons.
- Inebriant poisons
- Delibriant poisons
- Drug Dependence
- Food poisoning
- Spinal poisons
- Cardiac poisons
- Asphyxiants
- Miscellaneous

3. Legal responsibilities: Medical ethics.
4. Responsibilities and duties of the medical practitioners to the state, Professional secrecy and privileged communication.
5. Un-professional conduct and malpractice.
6. The rights and privilege and duties of medical practitioners.
7. The functions of state-medical council and its relationship to Indian Medical Council.
8. Medical ethics approved by Indian Medical council.

PRACTICALS

1. Age estimation.
2. Autopsies
3. Skeleton remains.
4. Spotters.
5. Examination of injured.
6. Alcoholic.
7. Psychiatric.
8. Toxicology.

TEXT BOOKS:-

1	Medical jurisprudence	By Modi
2	A Text Book of Forensic Medicine	By Narayana Reddy
3	A Text Book Of Forensic Medicine	By M.R.K. Krishna

REFERENCE BOOKS:-

1	The essential of forensic medicine	By Dr. C.J. Polson, D.J. Gee and B. Knight
2	Forensic Medicine	By Corden and Shapiro
3	Principles and practice of medical jurisprudence	By Taylor's
4	Legal Boundaries of Nature Cure	By Advocate (Dr.) Ashok Kumar Sharma

II - Hospital Management (Naturopathy & Yoga) (Hospital Administration)

SECTION 1- HOSPITAL ADMINISTRATION

a. The Hospital administrator - Role and Responsibilities
b. Profile of an effective Hospital Administrator

SECTION 2- MANAGERIAL SKILLS

a. Planning
b. Information System
c. Communication
d. Decision Making
e. Monitoring and Evaluation
f. Managing Time
g. Meetings

SECTION 3- HOSPITAL ORGANISATION

a. Hospital Organisation - Structure and Function
b. Hospital Committees

SECTION 4- THE HOSPITAL

a. Role of Hospital in Health Care.
b. Hospital Planning and design.
c. Special Features of Nature cure Hospital, Qualities of Therapist, Hospital Atmosphere, Scientific Attitudes, Awareness of Scope, Limitations ofnature cure.
d. Newer Technology in Treatment Through Naturopathy

SECTION 5- THE CLINICALSERVICES & CLINICALSUPPORTIVE SERVICES

a. The Medical Staff Organisation, interaction with patients.
b. Radiological Services
c. Laboratory Services

SECTION 6- THE NURSING SERVICES

SECTION 7- SPECIALISED SERVICE AREAS

a. Casualty Services
b. Disaster Services
c. Out-patient Services
d. Day Care
e. Diagnostic Services
f. Medical Records

SECTION 8- HUMAN RESOURCES

a. Personnel

SECTION 9- MATERIALS MANAGEMENT

SECTION 10 FINANCES

a. Finances
b. Activity based costing in Hospital
c. Economics of H.M.

SECTION 11- QUALITY ASSURANCE

a. Quality Management in our Hospitals
b. Medical Audit
c. Infection control:- Control of Hospital acquired infection.
d. ETHICS & LAWS
   - Ethics
   - Law applicable to Hospitals
   - Consumer Protection act 1986

SECTION I2- INDIAN HEALTH POLICY

PRACTICAL

1. Visit to the different Hospitals.
2. Project work in Planning & Designing the Hospital

REFERENCE BOOKS

1	Hospital Planning & Administration	By Llewellyn Davies Macaulay , H.M.C
2	Hospital Administration	By Francis C.M & Maria C.Desouza
3	Hospital ward Management	By Kusum Samant
4	Text Book of Social & Preventive Medicine	By Park. K.
5	Economics of Health care	By Martin Green
6	Hospital Planning	By Dr. Ashok Sahni
7	Principals of Hospital Administration & Planning	B.M. Sakharkar

III. Research Methodology in Naturopathy & Yoga

1. Introduction
2. Planning a research Project
3. Design of the study
4. Statistics
5. Parameters to be recorded for specific diseases :-
    - Obesity
    - Diabetes mellitus
    - Hypertension
    - Asthma
    - Lumbago
    - Rheumatoid Arthritis
6. Project Preparation for Clinical Research
7. Bioethics
8. Ethical Issues in Clinical Trials
9. Recent Research Update in Naturopathy &Yoga
10. Psychological Aspects in Yoga Research
11. Status of Research in India on naturopathy and yoga RECOMMENDED BOOKS

1. Research Methods - By Dr. H.R. Nagendra
3. Fundamentals of Evidence based Medicine - By Kamleshwar Prasad
4. Research Reports From 1981 to 2006 - By INYS(Jindal Nature Cure Institute)

COURSE OUTCOME

After the completion of the course, the student shall be able to;

a. Describe research methodology under process, materials and methods, design of a study, literature review, ethics, sampling, measurement tools, data organisation, statistics, data analysis, reliability and validity, etc, and implement this knowledge in practically designing, conducting, evaluating and publishing a study.

b. Illustrate statistics and probability theory;

c. Use technological aids for preparing research reports;

d. Demonstrate knowledge about inter-disciplinary research

Assessment Scheme: Theory

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	30
End- Semester Examination (ESE)(Final Exams)	70
Total	100

Assessment Scheme: Practical

Continuous Comprehensive Assessment (CCA)	10 marks
End- Semester Examination (ESE)-Practical	60 marks
End- Semester Examination (ESE)-Viva	30 marks
Total	100 marks

7. PSYCHOLOGY AND BASIC PSYCHIATRY

Course type- Core Course
Course code – BNY-416, BNY-417P
Credits-1.5

Objective:

The objective of teaching Psychology and Basic Psychiatry to undergraduate students is to provide them with comprehensive knowledge of normal and abnormal psychology and assessment of the same for therapeutic purposes.

THEORY

1. Definition and brief history of Psychology.
2. Biology of Behaviour: Typical behaviour patterns, Sociobiology, Brain and Behaviour.
3. Sensory process and Perception.
   - Vision, Hearing, Smell, Taste, Skin senses.
   - Perceptional Process - Attention from perception, visual depth perception, Consultancy, Movement perception, Plasticity, individual difference.
4. Principles of Learning: Classical conditioning, Instrumental conditioning, cognitive learning etc.
5. Memory: Theories about memory, Forgetting and Amnesia, ImprovingMemory
6. Thinking and Language: The thinking process, concepts,Problems solving, Decision making, Creative thinking, Language Communication.
7. Motivation: Theories of motivation, Biological motivation, Social motives, Motives to know and to be effective, Frustration and conflict of motives.
8. Emotion and Stress: Expression and perception ofEmotions, physiology of emotion, Stress Theories of Emotion.
9. Social Perceptions, Influence and Relationship: Social perception social influence, social relationship.
10. Attitudes: The Nature of attitudes, the measurement of attitudes, attitude theories, Factor in attitude change, attitudes and behaviour, behaviour & Attitudes.
11. Development during infancy and childhood: Methods of studying development, infancy, early childhood and later childhood.
12. Development during Adolescence, Adulthood and Old age: AdolescI ence, Youth, Early and Middle adulthood, Old age.
13. Psychological Assessment and Testing: Psychological tests, The Nature of intelligence and assessing intelligence, Individual difference in intelligence, Testing for special aptitudes, Personality Assessment, Behavioural Assessment.
14. Personality: Type and Trait theories of personality, Dynamic personality theories, humanistic theories, learning and behavioural theories of personality.
15. Abnormal Psychology: (Psychiatry)
    - Abnormality in everyday life
    - The language of Abnormality
    - General causes of abnormal Behaviour
    - Classifying Psychological Disorders: Clinical syndromes, Brain Syndrome, Psychoses, Neuroses, and Personality disorders
    - Psychoneuroses
    - Hysteria, Anxiety state and Neurasthenia.
    - Other forms of Psychoneuroses (OCD, Phobias etc.)
    - Treatment of Psychoneuroses - Psychotherapy and its procedures,Other therapies.
    - Psychoanalysis and related school.

- Psychoses
- Schizophrenia
- Mania - Depressive Psychoses
- Involutional Melancholia and Paronia
- Alcoholic Mental Disorders
- Toxic and Organic Psychoses
- Epilepsy
- Mental Deficiency
- Antisocial personalities and crime.

16. Therapy for Psychological distress:
- Positive Psychotherapy & other Psychotherapies: Psychoanalysis, Behaviour therapy, Logo therapy, Conversation therapy, Gestalt therapy and Primal therapy, Transactional analysis.
- Positive Psychotherapy and its practical application for various conditions.

17. Co-relation of Psychology, Mental health and Yoga.

COURSE OUTCOME-

After the completion of the course, the student shall be able to:

1. Describe the evolution of Psychology from speculation to science;
2. Illustrate mechanisms of sense and perception, states of consciousness and their functions;
3. Understand basic and complex functions such as learning, memory, thinking, language, motivation, emotion, intelligence, development of psychology across lifespan, personality, stress coping, social psychology, attitudes, etc.
4. Explain abnormal psychology and describe aetiology and psychopathology along with classification of disorders;
5. Demonstrate knowledge of therapies aimed at psychological health, such as psychotherapy, *Yoga*, etc;

Assessment Scheme: Theory

Continuous Comprehensive Assessment (CCA) (Internal Assessment)	20
End- Semester Examination (ESE)(Final Exams)	50
Total	70

Assessment Scheme: Practical

Continuous Comprehensive Assessment (CCA)	05 marks
End- Semester Examination (ESE)-Practical	15 marks
End- Semester Examination (ESE)-Viva	10 marks
Total	30 marks

Books Recommended:

1	Introduction to Psychology	By Clifford T. Morgan & Richard A. King
2	Abnormal Psychology	By James D Page
3	Positive Psychotherapy	By Nossrat Pesseschkian
4	Psychologies, Mental Health and Yoga	By A.S. Dalal
5	General Psychology	By J.P. Guilford
6	A brief Introduction to Psychology	By Clifford T. Morgan

8. PROFESSIONAL ETHICS

COURSE TYPE: - ABILITY ENHANCEMENT COURSE
COURSE CODE – BNY-418

Unit 1: Defining Ethics

- Medical Ethics:-Introduction
- The History of Medical ethical systems
- The role of codes

Unit 2: Theories of Healthcare Ethics
Unit 3: Principles of health care Ethics
Unit 4: Clinical ethics and organization ethics
Unit 5: The physician-patient relationship
Unit 6: Patient's Right and Ethical issues
Unit 7: Research in human Subjects: Ethical issues
Unit 8: Ethics Committees
Unit 9: Introduction to Yoga and meditation for professional excellence and stress management

Books

1. Health care ethics: Critical issues for the 21st century, second editions by Eileen E. Morrison
2. Organization Ethics in Health Care by Edward M. Spencer, Ann E. Mills, Mary V Rorty
3. Medical Ethics by Robert M. Veatch

9. SPA MANAGEMENT

COURSE TYPE – SKILL ENHANCEMENT

COURSE COURSE CODE – BNY-419

1. SPA MARKETING

- Developing a Marketing plan
- Essentials of selling to women, men and teen Generating Good Publicity
- Building and Maintaining contacts Using Technology in business' aid
- Building and managing a result oriented team
- Effective financial management
- Corporate tie ups

2. ROLE OF A SPA MANAGER

- Effective financial management
- Understanding spa concepts and its operations
- Effective planning – short term as well as long term.
- Leadership & management
- Human resources
- Financial planning and management
- Therapy designing
- Menu designing
- Live spa training
- Spa recruitment
- Development Operations Spa and Hospitality

3. FRONT OFFICE & GUEST HANDLING

- Telephone handling
- Guest appointments & booking procedures
- Guest orientation Guest intake forms Guest comments.

4. SPA AS A CAREER

- Basic RRequirements
- Remuneration/Earning Drive & Motivation Commitment Spa Career Options
- Typical Career Path.
- How to Start Your Own Spa Business Job Opportunities-India and abroad

JAI HIND