

**NANDHA NATUROPATHY AND YOGA MEDICAL
COLLEGE AND HOSPITAL**



NANDHA EDUCATIONAL INSTITUTIONS

**BACHELOR IN NATUROPATHY AND
YOGIC SCIENCES**

Program Outcome & Course Outcomes

PROGRAM OUTCOMES

Students of B.N.Y.S. degree Program at the time of graduation will be able to:

PO.1

Demonstrate Comprehensive Knowledge & Understanding of the basis of Health & Disease & its management – 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

Demonstrate Skill Competency & 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

Work with 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

Treat with Empathy, Moral & 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

Research attitude with Evidence Based Practice &Life-long Learning Approach 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

Behave ethically & in Tune with the Laws of the Land - 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

Be Environment friendly, Encourage Sustainability and have Individualized approach-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.

FIRST YEAR

PART 1

1. BIOCHEMISTRY

SUBJECT CODE - 1501

COURSE OUTCOME:

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

- a) Explain the molecular and functional organization of a cell and list its sub cellular components;
- b) Correlate the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
- c) Illustrate digestion and assimilation of nutrients and consequences of malnutrition;
- d) Explain biochemical basis of inherited disorders with their associated sequelae;
- e) Describe mechanisms involved in maintenance of body fluid and pH homeostasis;
- f) Analyze the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine
- g) Demonstrate conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
- h) Analyze and interpret investigative data;
- i) Demonstrate the skills of solving scientific and clinical problems and decision making.
- j) 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.

2. PHILOSOPHY AND PRACTICE OF YOGA

SUBJECT CODE - 1502

COURSE OUTCOME:

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

- a) Explain the various definitions of *Yoga*, history of *Yoga* and branches of *Yoga*;
- b) Describe kinds of *Yogasanas*, its importance, methods, rules, regulations and limitations;

- c) Illustrate the various limbs of *Ashtanga Yoga*;
- d) Demonstrate knowledge of *pranayamas*, *prana* and lifestyle, breathing and lifespan.
- e) Demonstrate various types of *Yogasanas* in their correct method of performance;
- f) Demonstrate different *pranayamas*.
- g) Explain about the definitions, origin, branches of *Yoga*.

PART 2

3. HUMAN ANATOMY

SUBJECT CODE – 1503, 1504

COURSE OUTCOME:

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

- a) Illustrate histological structures of various tissues and organs and co- relate structure and function in order to understand diseased states;
- b) 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;
- c) Describe developmental basis of variations and abnormalities with respect to sequential development of organs and systems, teratogens, genetic mutations and environmental hazards.
- d) Identify body structures including topography of living body;

4. HUMAN PHYSIOLOGY

SUBJECT CODE – 1505, 1506

COURSE OUTCOME:

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

- a) Explain the normal functioning of all the organ systems and their interactions for well co-ordinated body function;

- b) Correlate the relative contribution of each organ system to the homeostasis;
- c) Describe the physiological aspects of normal growth and development;
- d) Illustrate the physiological response and adaptations to environmental stresses;
- e) Analyze physiological principles underlying pathogens and disease management.
- f) Conduct experiments designed to study physiological phenomena;
- g) Interpret experimental/investigative data;
- h) Differentiate between normal and abnormal data from results of tests, which he/she has done and observed in the laboratory.
- i) Demonstrate the practical's efficiently.

5. PHILOSOPHY OF NATURE CURE

SUBJECT CODE – 1507, 1508

COURSE OUTCOME:

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

- a) Illustrate the history of Naturopathy including major contributors to the field and their work;
- b) Correlate the evolution and composition of the human body according to different schools of medicine such as Naturopathy, *Yoga*, *Ayurveda*, Homeopathy, Modern Medicine, etc.
- c) Concepts of health and disease according to Naturopathy
- d) Classify and Correlate Ten basic principles of Naturopathy
- e) Describe foreign matter, toxin accumulation, theory of Toxemia, Unity of disease and Unity of Cure.
- f) Explain the history of Naturopathy including major contributors to the field and their work;
- g) Correlate the evolution and composition of the human body according to different schools of medicine such as Naturopathy, *Yoga*, *Ayurveda*, Homeopathy, Modern Medicine, etc.
- h) 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
- i) Analyze Principles behind using the diagnostic procedures of Naturopathy, like spinal diagnosis, facial diagnosis, iris diagnosis, and chromo diagnosis.

- j)** Demonstrate knowledge of recent advances and research in Naturopathy principles/theories.
- k)** Understand Principles behind using the diagnostic procedures of Naturopathy, like spinal diagnosis, facial diagnosis, iris diagnosis, and chromo diagnosis.
- l)** Demonstrate knowledge of recent advances and research in Naturopathy principles/theories.
- m)** Demonstrate basic knowledge of the various therapeutic modalities utilized in Naturopathy;
- n)** Describe the various principles of Naturopathy with respect to the body, health, disease and therapy, diagnosis and management.

SECOND YEAR

1. PATHOLOGY

SUBJECT CODE – 1509, 1510

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) Analyze 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.

2. MICROBIOLOGY

SUBJECT CODE - 1511

COURSE OUTCOME:

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

- a) Describe all the infectious micro-organisms of the human body and host- parasite relationship
- b) Describe parasitic micro-organisms (viruses, fungi, bacteria, parasites) with the pathogenesis of the diseases they cause;
- c) Illustrate sources and modes of transmission, including insect vectors, of pathogenic and opportunistic organisms;
- d) Describe the pathways and mechanisms of immunity to infection

3. YOGA & PHYSICAL CULTURE 1

SUBJECT CODE - 1512

COURSE OUTCOME:

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

- a) Illustrate the basic understanding of *Yoga* as a philosophy
- b) Explain the various schools of philosophy which had an influence on *Yogic text* like Buddhism, *samkhya*, *mimamsa* etc.
- c) Describe spiritual values of pranayama and kriyas
- d) Correlate the concept of *Brahman* according to *Vedanta*.

4. DIAGNOSTIC METHODS IN NATUROPATHY

SUBJECT CODE - 1513

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) Analyze 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 *muthrapariksha*;
- f) Analyze 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.

5. DIAGNOSTIC METHODS IN MODERN MEDICINE

SUBJECT CODE - 1514

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) Analyze and interpret radiological investigations, biochemical investigations, sonography, EEG, ECG, EMG, echocardiography, CT, PET, MRI, etc for diagnostic and prognostic purposes.
- e) Analyze and interpret any further investigations required for the provisional diagnosis made.

6. BASIC PHARMACOLOGY

SUBJECT CODE - 1515

COURSE OUTCOME:

- a) Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels.
- b) Define the different classes of drugs and identify representative drugs from each class for treatment of various disease conditions.
- c) Describe the various receptor actions.
- d) Discuss the concepts of absorption, distribution, metabolism and excretion.
- e) Describe the pharmacological actions of different categories of drugs.
- f) Describe routes of administration of different classes of drug

THIRD YEAR

1. FORENSIC MEDICINE AND TOXICOLOGY

SUBJECT CODE - 1516

COURSE OUTCOME:

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

- a) Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
- b) Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
- c) Ability to manage medical and legal issues in cases of poisoning /overdose,
- d) Understanding the medico-legal framework of medical practice and medical negligence,
- e) Understanding of codes of conduct and medical ethics. Integration: The teaching should be aligned and integrated.

2. COMMUNITY MEDICINE

SUBJECT CODE - 1517

COURSE OUTCOME:

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

- a) Describe the health care delivery system including rehabilitation of the disabled in the country;
- b) Describe the National Health Programs with particular emphasis on maternal and child health programs, family welfare planning and population control;
- c) Classify and List epidemiological methods and describe their applications to communicable and non-communicable diseases in the community or hospital situation;
- d) Illustrate the demographic pattern of the country and appreciate the roles of the individual family, community and socio-cultural environment in health and disease;
- e) Explain the health information systems;
- f) 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”.

3. PSYCHOLOGY AND BASIC PSYCHIATRY

SUBJECT CODE - 1518

COURSE OUTCOME:

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

- a) Describe the evolution of Psychology from speculation to science;
- b) Illustrate mechanisms of sense and perception, states of consciousness and their functions;
- c) 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.
- d) Explain abnormal psychology and describe etiology and psychopathology along with classification of disorders;
- e) Demonstrate knowledge of therapies aimed at psychological health, such as psychotherapy, *Yoga*, etc;

4. OBSTETRICS AND GYNAECOLOGY

SUBJECT CODE - 1519

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) Analyze different gynecological diseases and describe principles of their management, different techniques.
- f) Analyze a pregnant women, recognize high risk pregnancies and make appropriate referrals;

5. YOGA AND PHYSICAL CULTURE 2

SUBJECT CODE - 1520

COURSE OUTCOME:

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

- a) Illustrate the knowledge of traditional texts like *Patanjali Yoga Sutras, Hatha Yoga, Shiva Samhita* and *Gheranda Samhita*;
- b) Explain the principles behind various meditative practices like *Yoganidra, Om* meditation, *cyclic* meditation, *Vipassana* and so on;
- c) Explain about *Yoga* in relation to its application in education, sports;
- d) Demonstrate basic understanding of procedures of stretching and exercises;
- e) Describe basic physiological changes of *asanas* and *shat kriyas* and their adverse effects
- f) Describe the concept of *Yoga* as explained in the traditional texts;
- g) Deliver a meditative session using any of the meditative styles;

6. NUTRITION AND HERBOLOGY

SUBJECT CODE - 1521

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) Analyze 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.

7. MASSAGE, CHIROPRACTICE, AROMOTHERAPY AND OSTEOPATHY

SUBJECT CODE - 1522

COURSE OUTCOME:

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

- a) Understand the principles and history of massage therapy.
- b) Description and therapeutic uses of different types of oils.
- c) Analyze the application of manipulative therapy in clinical practice.
- d) Analyze the research based new development in manipulative therapy.

FINAL YEAR

1. YOGA THERAPY

SUBJECT CODE - 1523

COURSE OUTCOME:

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

- a) Describe the physiological effects of various *yogic* practices like *kriyas*, *asanas*, *pranayamas*, *mudras*, *bandhas*, *drishtis*, Guided relaxation and Meditation;
- b) Define rules and regulations of *Yoga* to be followed;
- c) Understand the therapeutic aspects of *Yoga* as applied to different disease conditions;
- d) Illustrate the concept of health and disease in *yogic* lore and role of stress in disease causation and management of the same with *Yoga*;
- e) Analyze knowledge of *Yoga* therapy in managing various diseases;
- f) Demonstrate usage of therapeutic aspect of *Yoga* in promotive, preventive, curative and rehabilitative therapy.

2. HYDROTHERAPY

SUBJECT CODE - 1524

COURSE OUTCOME:

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) 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;
- f) Demonstrate techniques and procedures of various types of hydriatic applications.

3. FASTING & DIET THERAPY

SUBJECT CODE - 1525

COURSE OUTCOME:

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

- a) Illustrate definitions and historical highlights of fasting therapy through the centuries, including fasting employed in different religions, the concept of dietetic principles in Naturopathy.
- b) Classify fasting according to duration, purpose, type, etc.
- c) Explain the metabolism of fasting, Calorie Restriction: Concept, Method, Prevailing basic-Clinical-applied evidence.
- d) Describe importance of various components of diet, such as dietary fiber, vitamins, minerals, etc.
- e) Analyze fasting therapy in managing various diseases

4. MAGNETOTHERAPY AND CHROMO THERAPY

SUBJECT CODE - 1526

COURSE OUTCOME:

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

- a) 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;
- b) 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;
- c) 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;
- d) Deduce various diseases and disorders of the body and mind using the principles of colour diagnosis;
- e) Analyze the therapeutic values of colours and magnets in treatment of various diseases
- f) Analyze latest research finding in improving his/her professional practice

5. PHYSIOTHERAPY

SUBJECT CODE - 1527

COURSE OUTCOME:

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

- a) Illustrate principles of basic physics that act as a foundation for physical medicine
- b) 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 cryo therapy;
- c) 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.
- d) Demonstrate usage of therapeutic applications of physical medicine in promotive, preventive, curative and rehabilitative therapy, focusing on rehabilitation.
- e) Analyze remedial measures in *Yoga* for various disease conditions.

6. ACUPUNCTURE, ACCUPRESSURE, REFLEXOLOGY, REIKI & PRANIC HEALING

SUBJECT CODE - 1528

COURSE OUTCOME:

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

- a) Demonstrate basic understanding of procedures of different styles of Acupuncture and related therapeutic modalities, such as Traditional Acupuncture, Scalp Acupuncture, Auriculo therapy, Acupuncture Anesthesia, Reflexology, Zone Therapy, Acupressure, etc;
- b) Illustrate case discussion and the techniques to be used.
- c) Analyze evidence based acupuncture and its application.

7. EMERGENCY MEDICINE, MINOR SURGERY & FIRST AID

SUBJECT CODE – 1529

COURSE OUTCOME:

- a) Obtain an accurate and complain directed medical history and perform a physical examination for each patient encountered
- b) Develop a differential diagnosis for these presentations
- c) Present accurate and succinct case presentations in a clear, concise and organized fashion and appropriately document such information
- d) Adequately interpret commonly performed diagnostic studies used in the Emergency Department
- e) Command a fund of knowledge and basic understanding of pathophysiologic principles of disease and apply this knowledge appropriately to each clinical encounter
- f) Develop appropriate management plans for patients and monitor patient response to therapy and follow up on all studies ordered in a timely fashion

8. HOSPITAL MANAGEMENT

SUBJECT CODE - 1530

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 organization, 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.