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**SunRise University**

Approved by Govt. of Rajasthan vide Sunrise University Act, 2011  
Recognized by UGC Act, 1956 u/s 2 (f)

SRU NATUROPATHY MEDICAL COLLEGE & HOSPITAL  
SunRise University Campus, Alwar, Rajasthan, India

## SYLLABUS

### REGULATIONS AND CURRICULUM

M.D., Physician ( Clinical Dietology & Nutritiology) Programme  
Doctor of Medicine  
Post Graduate Medical Degree Course

## I SEMESTER

4

Paper Code	Subject	Internal	External	Total
1MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology I	40	60	100
1MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology I	40	60	100
1MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology I	40	60	100
1MDDN04	Clinical Rotations Practicals I	40	60	100

## II SEMESTER

Paper Code	Subject	Internal	External	Total
2MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology II	40	60	100
2MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology II	40	60	100
2MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology II	40	60	100
2MDDN04	Clinical Rotations Practicals II	40	60	100

## III SEMESTER

Paper Code	Subject	Internal	External	Total
3MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology III	40	60	100
3MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology III	40	60	100
3MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology III	40	60	100
3MDDN04	Clinical Rotations Practicals III	40	60	100

## IV SEMESTER

Paper Code	Subject	Internal	External	Total
4MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology IV	40	60	100
4MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology IV	40	60	100
4MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology IV	40	60	100
4MDDN04	Clinical Rotations Practicals IV	40	60	100

## V SEMESTER

4

Paper Code	Subject	Internal	External	Total
5MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology V	40	60	100
5MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology V	40	60	100
5MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology V	40	60	100
5MDDN04	Clinical Rotations Practicals V	40	60	100

## VI SEMESTER

Paper Code	Subject	Internal	External	Total
6MDDN01	Applied Medical Sciences, Concepts of Health & Diseases in Dietology & Nutritiology IV	40	60	100
6MDDN02	Diagnosis using Modern Medicine, Indicators of Disease Process in Dietology, Nutritiology & Therapeutic Management of Disorders through Dietology & Nutritiology VI	40	60	100
6MDDN03	Research Methodology & Recent Advances in Dietology & Nutritiology VI	40	60	100
6MDDN04	Clinical Rotations Practicals VI	40	60	100

## SECTION 1:

## Regulations for Post Graduate Medical Degree Course in Dietology &amp; Nutritiology

## 1. Branches of Study:-

Postgraduate Degree Course

M.D .,Physician / Doctor of Medicine [ Dietology & Nutritiology ]

## 2. Eligibility for Admission

A candidate who has passed final year BNYS examination after pursuing a study in any college of Naturopathy and Yogic sciences affiliated to any other university recognized as equivalent there to, and has completed one year compulsory rotatory internship in a teaching institution or other institutions and has obtained permanent registration from any college of Naturopathy and Yogic Sciences from any recognized university.

Degree/diploma in Yoga/Yoga & Naturopathy/Naturopathy obtained in distant mode/correspondence are not eligible for the said course

## 3. Obtaining eligibility certificate by the university before making admission

No candidate shall be admitted for any postgraduate degree course unless the candidate has obtained and produced the eligibility certificate issued by the university. The candidate has to make an application to the university with the following documents along with the prescribed fee:

- a) BNYS pass/degree certificate issued by the University.
- b) Marks cards of all the university examinations passed BNYS course.
- c) Attempt certificate issued by the principal.
- d) Completion of internship certificate.
- e) In case internship was done in a non-teaching hospital, a certificate that the hospital has been recognized for internship.
- f) Registration by any state government
- g) Proof of SC/ST or category 1, as the case may be
- h) Candidates should obtain the eligibility certificate before the last date for admission as notified by the university.
- i) A candidate who has been admitted to post graduate course should register his or her name in the university within a month of admission after paying the registration fee.

## 4. Intake of students

The intake of students to each course shall be in accordance with the ordinance in this behalf. The maximum number of post-graduate seats shall not exceed 50 per institution per academic year.

## 5. Duration of study

The course of study shall be for a period of three years.

6. Medium of instruction:  
Medium of instruction shall be English.
7. Method of Training:

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The training of postgraduate for degree course shall be residency pattern with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential

The candidates shall be trained in theory and practice of yoga relevant to therapy. The candidates shall be exposed to applied basic sciences and clinical training in different specialties.

Every candidate should take part in seminars, group discussions, grand rounds, case demonstrations, clinics, journal review meetings, CPC and clinical meetings. Every candidate should be required to participate in the teaching and training program of undergraduate students. Training should include involvement in laboratory, experimental work and research studies

**1. Attendance, Progress and Conduct:**

A candidate pursuing degree course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/nursing homewhile studying postgraduate courses. The PG is rotated through the sub-specialty departments of the conventional medicine during and part of the 1st year, part of the 3<sup>rd</sup> year, during second year of the three-years course. This roster is provided to PGs at the entry to the course. The department should select one faculty member and he or she should act as friend, guide, counselor and philosopher for PG throughout the training course.

Each year shall be taken as a unit for the purpose of calculating attendance.

Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself/herself from work without valid reasons. (Please see Section F for details)

Every candidate is required to attend a minimum of 80% of the training during each academic year of the postgraduate course. Provided further leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% of attendance of training period every year.

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the university examinations

**2. Monitoring Progress of Studies:**

- a) Work diary/log book: Every candidate shall maintain a work diary and record his/her participation in the training programs conducted by the department such as practical training in food preparation, menu planning, disease specific diet modules, diet counseling teaching sessions, journal reviews of papers relevant to diet & nutrition, seminars on concepts of diet & nutrition and management of diseases using diet & nutrition, etc. (Please see chapter IV for model check list and log book specimen copy).
- b) The candidate may make special mention in the presentations on the observations made on clinical or laboratory procedures if conducted

by the candidate. The work diary shall be scrutinized and certified by the head<sup>4</sup> of the department and head of the institution and presented in the university practical/clinical examination.

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- b) The candidate may make special mention in the presentations on the observations made on clinical or laboratory procedures if conducted

by the candidate. The work diary shall be scrutinized and certified by the head of the department and head of the institution and presented in the university practical/clinical examination.

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- c) Periodic tests: The department shall conduct three tests, two of them will be annual tests, one at the end of the first year and the other in the second year. The third test may be held three months before the final examinations. The tests may include written papers, articles/clinical and viva voce. Records and marks obtained in such tests will be maintained by the head of the department and sent to the university when called for.
- d) Records: Records and marks obtained in tests will be maintained by the head of the department and will be made available to the university.

## 12. Dissertation:

Every candidate pursuing M.D. degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such work shall be submitted in the form of dissertation.

The dissertation is aimed to train a postgraduate student in research methods and techniques which includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.

Every candidate shall submit to the registrar of the university in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of the course or before the dates notified by the university. The synopsis shall be sent through the proper channel.

Such synopsis will be reviewed and the university will register the topic. No change in the dissertation topic or guide shall be made without approval of the university.

The dissertation should be written under the following headings:

- Introduction
- Aims or Objectives of study
- Review of literature
- Material and Methods
- Results
- Discussion
- Conclusion
- Summary
- Limitations and Future directions

- References
- Tables
- Annexure

The written text of dissertation shall not be less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27 X 11.69") and bound properly. Spiral binding should be avoided. The guide, head of the department, and head of the institution shall certify the dissertation.

Four copies of dissertation thus prepared shall be submitted to the registrar six months before final examination or before the dates notified by the university.

Examiners appointed by the university shall evaluate the dissertation. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination.

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**13. Guide:**

The academic qualifications and teaching experience required for recognition by this university as a guide for dissertation work is as per the guidelines from the concerned board of studies. Minimum qualifications for teachers in medical institutions having a total of 8 years of teaching experience out of which at least 5 years teaching experience as Lecturer or Assistant. Professor gained after obtaining post graduate degree shall be recognized as postgraduate teacher.

Apart from this minimum requirement of staff, visiting Professors for the specified specialties shall be included as additional faculty for the MD program. For this, the persons with suitable qualifications and expertise illustrated by the research contributions made in the field are identified. However, no visiting faculty shall be considered as Guide.

A co guide may be included provided the work requires substantial contribution from a sister department or from another medical institution recognized for teaching/training by Rajiv Gandhi University of Health Sciences. The co guide shall be recognized postgraduate teacher of Rajiv Gandhi University of Health Sciences.

**Change of Guide:** In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

**14. Schedule of Examination:**

The examination for M.D. courses shall be held at the end of three academic years. The university shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

**15. Scheme of Examination:**

M.D. degree examinations shall consist of dissertation, written paper (theory), practical/clinical and viva voce.

**Dissertation:** Every candidate shall carry out work and submit a dissertation as indicated in SI.NO.9. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

**Written Examination:** A written examination shall consist of 4 question papers each of 3 hours duration. Each paper shall carry 100 marks. Out of the four papers; the first paper will be on applied aspects of Philosophy and Practice of Naturopathy and Yogic Diet, and Basic Nutrition and Applied Nutrition and Dietetics, Management of Diseases through Nutrition and Dietetics, and Research Methodology, and Recent Advances in Clinical Nutrition and Dietetics. Recent advances may be asked in any or all the papers.

Long essays	10x10	100 marks
Total marks		100 marks

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Practical/Clinical Examination: In case of practical examination, it should aim at assessing

(i) competence in the preparation & evaluation of Diet & Nutrition & teaching methods, (ii) Preparation of disease specific Diet & Nutrition modules based on clinical examinations, (iii) ability to make relevant and valid observations, interpretations, and inference of laboratory or experimental work relating to his/her subject.

In case of clinical examination, it should be aimed at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

The total marks for practical/clinical examination shall be 200.

Viva Voce: Viva voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 100 and the distribution of marks shall be as under:

- For examination of all components of syllabus           80marks
- For pedagogy   20 marks

Examiners: There shall be at least four examiners, two internal examiners from the university; and out of two external examiners, one from outside the University & the other from another state. The qualification and teaching experience for appointment as an examiner shall be as that of a post-graduate guide.

Criteria for Declaring as Pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) theory (2) practical including clinical and viva voce examination.

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidates may appear in any subsequent examinations upon payment of fresh fee to the registrar.

Declaration of Distinction: A successful candidate passing the university examination in first attempt will be declared to have passed the examination with distinction if the grand total aggregate marks are 75% and above. Distinction will not be awarded for candidates passing the examination in more than one attempt.

#### 16. Minimum Requirements:-

The post graduate education center for conducting M.D Diet & Nutrition shall satisfy the entire minimum requirements of undergraduate training (BNYS) as prescribed by the University and in addition shall fulfill additional requirements of post graduate training.

Only BNYS Degree colleges functioning with reputation and at least three batches would have been passed out are eligible to start the PG course.



Department:

Department of Dietology & Nutritiology with the staff structure defined under 13.4 will execute the M.D. programme along with the other departments as per the regulations for the BNYS program. The departments shall have adequate equipment and research facilities required for training in the related specialty.

Staff structure: Each department [mentioned above] shall have the following staffs:-

- Professor 1

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- Associate professor 1
- Asst. professor 2
- Demonstrator 1
- Attender 1
- Photographer cum Museum Keeper

Qualification for post graduate teachers: -

In the field of Diet & Nutrition in the branch of Yoga & Naturopathy, there is no M.D. course that exists in the country. However there are two MD courses (MD Naturopathy & MD Yoga) related to Diet & Nutrition started from 2010 & BNYS with prolonged teaching experience will be considered for PG guides in various cadres depending on the teaching experience as follows.

Sl. No	Qualification	Teaching Experience	Designation
01	BNYS, MD/ PhD	3 years	Assistant professor
02	BNYS, MD / PhD	5 years	Associate professor
03	BNYS, MD / PhD	8 years	Professor
04	BNYS	6 years	Assistant professor
05	BNYS	8 years	Associate professor
06	BNYS	12 years	Professor
07	BNYS, MSc (Food & Nutrition)	3 years	Assistant professor
08	MSc, PhD (Food & Nutrition)	3 years	Assistant professor
09	BNYS, MSc (Food & Nutrition)	5 years	Associate Professor
10	MSc, PhD (Food & Nutrition)	5 years	Associate Professor
11	BNYS, MSc (Food & Nutrition)	8 years	Professor
12	MSc, PhD (Food & Nutrition)	8 years	Professor

Apart from these faculties, the institution should have 'Visiting Consultants' for the following disciplines:

- Cardiology
- Neurology
- Endocrinology
- Psychiatry

- Clinical Immunology & Rheumatology
- Medical rehabilitation and
- Research consultants in Diet & Nutrition

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Note:

Infrastructural facilities:

Apart from U G ( B N Y S ) requirements, the Post Graduate Department shall have well designated lecture hall(s) with audio-visual facilities, established laboratories for basic medical sciences, diagnostic laboratories, laboratories for yoga research [basic and clinical] and a museum. Each department shall have separate staff room and departmental library. Separate Post Graduate Hostels for Male & Female students

The stipend and contingency shall be provided at the rates prevailing in the state for other medical PostGraduate students.

Teaching Hospital requirements: -

The hospital with minimum of 100 beds is required to start a M.D. program. By the end of the third year of PG admission, the hospital will have 150 beds.

The student:bed ratio in the hospital should be 1:5. The number of candidates permitted shall depend upon available bed strength over and above minimum 100 bed strength prescribed.

The Annual average bed occupancy in the hospital should be more than 60%.

## SECTION – 2

### Goals and General Objectives of Postgraduate Medical Education Program

#### Goal

- The goal of postgraduate medical education shall be to produce a competent specialist/medical teacher.
- Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
- Who shall have mastered most of the competencies, retraining to the specialty, that are required to be practical at the secondary' and the tertiary levels of the health care delivery system.
- Who shall be aware of the contemporary advances and developments in the discipline concerned.
- Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology.
- Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

#### General Objectives

- At the end of the postgraduate training in the discipline concerned the student shall be able to:
- Recognize the importance of the concerned speciality in the context of the health need of the community and the national priorities in the health sector.
- Practice the speciality concerned ethically and in step with the principles of primary healthcare.
  - i. Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality particularly to understand the physiological effects and clinical application of Diet & Nutrition.
  - ii. 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 promotive measures/strategies.
  - iii. Diagnosis and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriately selected and conducted traditional and conventional investigations.
  - iv. Plan and devise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the speciality.
  - v. Demonstrate skills in documentation of individual case details as well as morbidity data relevant to the assigned situation.
  - vi. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behaviors in accordance with the societal norms and expectations.
  - vii. Play the assigned role in the implementation of national health programs, effectively and responsibly.
  - viii. Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.

- ix. Develop skills as a self-directed learner; recognize continuing educational needs; select and use appropriate learning resources.
- x. Demonstrate competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature.
- xi. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- xi. Function as an effective leader of a health team engaged in health care, research training.

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### Objectives

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The objectives may be considered under the sub-headings:

- Knowledge (cognitive domain)
- Skills (psychomotor domain)
- Human values, ethical practice and communication abilities.

### Statement of Competencies:

Keeping in view the general objectives of postgraduate training, each discipline shall aim at development of specific competences, which shall be defined and spelled out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the program so that he or she can direct the efforts towards the attainment of these components.

### Components of PG curriculum

The major components of the PG curriculum shall be:

- Theoretical knowledge.
- Practical/clinical skills.
- Training in Thesis.
- Attitudes, including communication.
- Training in research methodology.

SECTION 3: COURSE CONTENTS

PAPER-1

Philosophy and Practice of Naturopathy and Yogic Diet and Basic Nutrition.

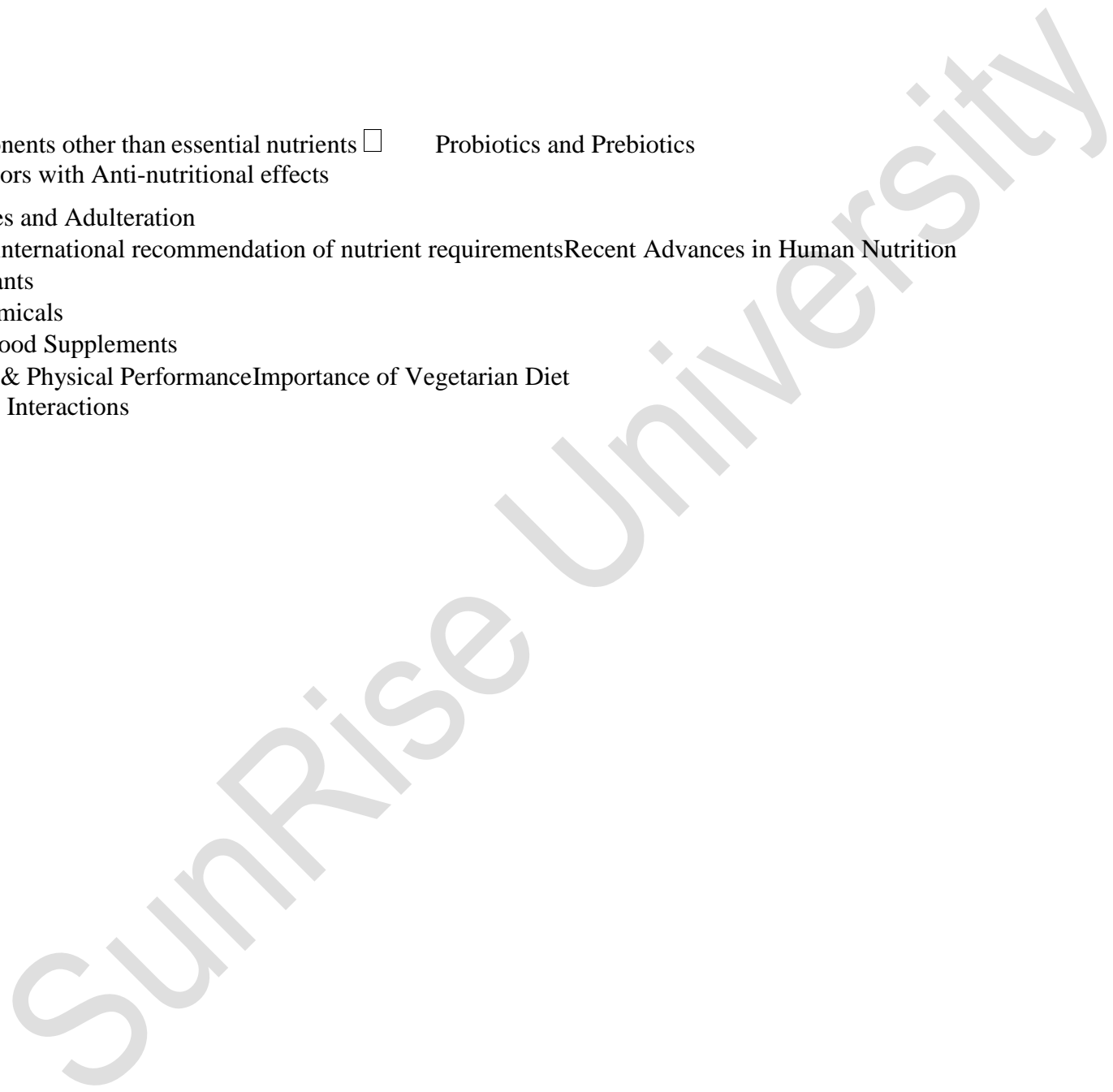
- Philosophy, Evolution and History of Naturopathic Diet
  - Eliminative diet
  - Soothing diet
  - Constructive diet
- Philosophy, Evolution and History of Juice Therapy (Fasting Therapy)
- Philosophy, Evolution and History of Yogic Diet
  - Sattvic Diet
  - Rajasic Diet
  - Tamasic Diet
  - TriDosh & Food
  - TriGunas & Food
- Philosophy, Evolution and History of Basic Nutrition
  - Energy yielding food
  - Body building food
  - Protective food
- Classification, functions, components, Requirements of Carbohydrates  Classification, functions, components, Requirements of Proteins
- Classification, functions, components, Requirements of Lipids  Water:
- Nutritional and naturopathic perspective of the organ systems detoxification. Naturopathic nutritional assessment.
- Free radicals and phytonutrients. Energy of food.
- Healing through nutrition – all planes of being. Biological rhythms and nutrition.
- Seasonal changes of food. Panchamahabhutas and food.
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- Introduction, physiological roles, bioavailability, requirements, food sources deficiency and toxicity of Minerals & Vitamins
- Human Energy Requirements
- Energy requirements and dietary energy recommendation.

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- Food components other than essential nutrients  Probiotics and Prebiotics
- Dietary Factors with Anti-nutritional effects
- Food additives and Adulteration
- National and international recommendation of nutrient requirementsRecent Advances in Human Nutrition
- Antioxidants
  - Phytochemicals
  - Natural Food Supplements
  - Nutrition & Physical PerformanceImportance of Vegetarian Diet
- Food & Drug Interactions
- 



PAPER -2

Applied Nutrition and Dietetics

Applied Nutrition and Dietetics

1. Menu Planning

Rationale for menu planning

2.

Factors affecting food choice

- Nutritional factors
- Other factors

Exchange list versus food composition tables for menu planning Steps in the development of exchange list

Planning for Adults

Based on Recommended daily allowances

Pregnancy and Lactation

Physical Changes During Pregnancy

Expansion in plasma volume and red cell mass Hormonal profile in pregnancy

Placental transfer of nutrients Maternal weight gain.

Nutritional Needs During Pregnancy

Maternal nutrition and fetal outcome:

Pre Pregnancy weight and fetal outcome Pre pregnancy height and fetal outcome

BMI and other anthropometric measures as applicable Weight gain during pregnancy and fetal outcome

Maternal dietary intake and fetal outcome.

Non-nutritional factors: Antenatal care, age, heavy physical work and intrauterine infections. Nutritional assessment and guidance in prenatal care.

Nutritional management of high risk pregnancies.

Lactation

Physiology

Human milk composition and infant growth and development Malnutrition- Effects on milk and effects on mothers.

Nutrient requirements during lactation Dietary management

- Other concern during breast feeding
- Infants and Preschool Children

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## Growth and development:

- Physiological changesGrowth monitoring Health monitoring
- Nutrient needs and recommended dietary allowances.Diet and feeding patterns
  - Feeding 0-6 months infant
  - Feeding 6-12 months infant
  - Feeding preschoolers
- Problems of infants and preschoolers nutrition.
- Older Children and Adolescents
  - Changes in physical development and body composition.Sexual maturity
  - Psychosocial changes.
- Nutrient needs and recommended dietary intakes.
  - Diet and dietary patterns
  - Problems of older children and adolescent nutrition.
- Geriatric Population
  - Definition of old age
  - Nutrition and ageing
  - Physiological changes associated with ageing.
  - Changing body composition and techniques for measuring body composition.
  - Nutritional requirements and dietary modification in the diet of the elderlyGuidelines for planning balanced diet for elderly
- Sports Nutrition
  - Introduction
  - Evaluation and growth of sports nutrition as a disciplineAnthropometric and physiological measurement.
    - O Various techniques for measuring body composition.
    - O Work capacity
- Physical Fitness Parameter of fitnessFitness tests
- Nutritional Requirements for Extreme Environments
  - ❖ General adaptive mechanisms to environmental extreme and role of nutrition in successfulacclimatization.
  - Health Hazards associated with high altitude
    - Nutritional requirements in high altitude
    - Nutritional requirements in high cold and polar envelopmentNutritional requirements in hot environment

- Nutritional requirements for space missions
- Nutritional regulation of Gene Expression, Epigenetic & Nutrigenomics
  - Introduction
  - Gene – Expression- An overview
  - Role of specific nutrients in controlling gene expression
    - Proteins
    - Lipids
    - Minerals
    - Vitamins
- Immunonutrition
  - Role of specific nutrients in immune suppression.
  - Role of nutrients in immune promotion
  - Functional foods and nutraceuticals in health and disease
    - History
    - Definition
    - Classification
  - Physiological effects, effects of human health and potential applications in risk reduction of diseases.
- Food Microbiology Nutrition Supplements
- Medical Nutrition Therapy
  1. Definition
  2. Nutritional screening
  3. Nutritional care process
    - Nutritional Assessment Nutritional diagnosis Nutritional Intervention
    - Monitoring and evaluation
- Nutritional Intervention – Diet Modification:
  - Adequate normal diet as basis for therapeutic diets Diet prescription
  - Modification of normal diet.
  - Nomenclature of diet adequacy in standard hospital diet. Psychological factors in feeding the sick person.
  - Interaction among drugs, food nutrients and nutritional status
    - Effects of drugs on food intake, nutrient absorption metabolism and requirements. Drugs affecting intake of food and nutrients

- Absorption
  - Metabolism and excretion
  - Nutritional status
- Effect of food, nutrients and nutritional status on absorption and metabolism of drugs.

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- Hospital Malnutrition
- Nutrition for General Conditions
  - Nutrition for Bone Health
  - Nutrition for Oral & Dental Health
- Nutritional Support Systems:
  - Enteral and parenteral nutrition support
  - Use of herbal supplementation in naturopathy Food as medicine
  - Nutritional support for healthy body and mind systems Environmental and dietary toxins
  - Role of water in healing the diseases
  - Treating the root cause of illness through natural foods.
- Enteral Nutrition
  - Site
  - Size of the tube Feed-types Complications
- Parenteral Nutrition
  - Type Composition Complications
- Set up of Nutrition Service Clinics
- Nutrition Counseling
  - Communication Skills
  - Designing & Counseling Plans
  - Counseling Approach, Implementation & Evaluation
- Management of Nutrition Unit in Hospital
  - Quantity Cooking & Patient Service
  - Food Management
- General Management of Nutrition Unit in Hospital
  - Financial Management
  - Record Maintenance
  - Principles of Hospital Management



## PAPER -3

## Management of Diseases through Nutrition and Dietetics

Nutritional Care in Disease Condition

- Nutritional Management in Infection and Fever
  - Defense mechanism
  - Metabolic changes during infection Classification and entity of fever infection Typhoid/ TB /
  - parasitic infestation/ Aids
- Nutritional Management of Physiological Stress
  - Nutrition in wound healing
  - Surgery: Pre and post surgical dietary management Burns:
    - Classification Complication Dietary management
    - Trauma: Dietary management Sepsis: Dietary management
    -
- Nutritional Management in Critical Care
  - Nutritional screening and nutritional status assessment of critically ill & ICU patient Nutritional requirements according to the critical condition
  - Feeding of Special groups
  - Feeding of Spastic, Dementia & Anorexia patients
  - Palliative Care & Rehabilitation Diet
  - Domiciliary Management & Long term Nutrition Support
  - Nutrition in patients with Organ Failure & Sepsis
  - Nutrition in patient with Solid Organ Transplant
- Nutritional Management of GI Diseases:
  - Physiological and functional changes and impact on Nutritional status
- Diseases of Esophagus and Stomach
  -

- Esophagitis(GERD)Dyspepsia
- Peptic ulcerGastritis
- Gastrectomy: Dumping syndrome
- 

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- Intestinal Diseases
  - FlatulenceDiarrhea
  - Constipation, Hemorrhoids, Diverticular diseaseDuodenal ulcer
  - Inflammatory Diseases of Bowel: Crohn’s disease and ulcerative colitisIrritable bowel syndrome
  - ColostomyIleostomy
- Malabsorption Syndrome
  - Celiac disease (Tropical sprue)Steatorrhea
  - Intestinal brush border diseases
- Protein Losing Enteropathy

Nutritional Management in diseases of the Liver, Pancreas and Biliary System Pathophysiology of Liver Diseases:

- Progression of liver disease, Metabolic and nutritional Implications, Role of specific nutrients and alcohol in liver diseases.
- Nutritional care in liver disease in the context of results of specific liver function tests, viral hepatitis, cirrhosis of liver, hepatic encephalopathy,Wilsons disease.
- Liver transplant.

Diseases of Gall Bladder and Pancreas –pathophysiologic changes, Metabolic and Nutritional implications:

- Biliary dyskinesiaCholelithiasis Cholecystitis Cholecystectomy
- Pancreatitis
- Zollinger Ellison syndrome (ZE syndrome)

Nutritional Management of Metabolic Disease 1: Diabetes andHypoglycemia

Prevalence and classification of DM Etiology

- Physiological symptoms and disturbancesDiagnosis and tests used
- Complications
-

Management of Diabetes Mellitus

❖ Nutritional Therapy

- Diet Plan Food exchange list, Glycemic index, CHO counting. Meal planning with and without insulin, during sickness
- Artificial sweeteners and sugar substitutes.
- Drugs and insulin
- Exercise

Hypoglycemia: Classification, symptoms, Fasting hypoglycemia, Postprandial or reactive hypoglycemia, early alimentary and late reactive hypoglycemia, Idiopathic hypoglycemia, Dietary treatment in reactive hypoglycemia.

Nutritional Management of Metabolic Disease: II Gout and inborn Error of Metabolism Gout:

- Role of proteins and purine Etiology
- Symptoms and complications
- Dietary management

Inborn Errors of Metabolism

- PKU MSUD
- Tyrosinosis Homocystinuria
- Glycogen storage disorders Galactosemia
- Organic acidurias
- Other types

Nutritional Management on Weight Imbalance

- Regulation of food intake and pathogenesis of obesity and malnutrition and starvation. Weight Imbalance: prevalence and classification.
- Guidelines for calculating desirable body weight.
- Control of appetite and food intake: Neural count, Hormonal count, Insulin, estrogen and other types of peptide hormones.

Obesity:

- Etiology
- Energy balance
- Health risks

Management

- Diet and lifestyle modification
- Evaluation of some common diet

- Preventive aspects
  - Underweight
    - Etiology
    - Diet management
  - Nutritional management of eating disorders
    - Anorexia Nervosa
    - Bulimia
  - Nutritional Management in Coronary Heart Disease
 

Pathogenesis, role of nutrients in prevention and management – Nutritional and metabolic implications of dyslipidemias.
  - CHD
    - Prevalence
    - Etiology and risk factors
    - Diagnostic tests
    - Nutrition management
  - Common Disorders of CHD and Nutrition Management
    - Dyslipidemias
    - Atherosclerosis
    - Hypertension
    - IHD
    - CCF
    - Rheumatic heart disease
  - Nutrition Management of Renal Disease
 

Diseases of Renal System: Etiology and pathogenesis: change in function with progression of diseases, metabolic and nutritional implications.

    - Clinical and metabolic manifestations
    - Diagnostic tests
- Types

- Acute and chronic nephritis
- Nephrotic syndrome
- Renal Failure: Acute and chronic
- ESRD

□

### Nutritional Management in Cancer

Cancer: Pathogenesis and progression of cancer

Role of Nutrients and food additives in cancer therapy and their nutritional implications.

- Types
- Symptoms

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- Diagnosis
- Cancer therapies: Nutritional implications
- Dietary management
- Nutrition Management in Diseases of Nervous System and Musculoskeletal System
  - Dysphagia
  - Epilepsy
  - Hyperkinetic behavior syndrome
- Etiology Dietary Treatment in Arthritis and Osteoporosis Nutritional Management in Allergy
  - Definition, symptoms and mechanism of food allergy Biochemical and immune testing (Brief)
  - Elimination diets Food selection
  - Food allergy in infancy: Milk sensitive enteropathy, intolerance to breast milk. Prevention of food allergy
  - 
  -

## PAPER -4

Research Methodology and Recent Advances in Clinical Nutrition and Dietetics.

### RESEARCH METHODOLOGY

- Basic principles of biostatistics and research methodology, sample size calculation analysis of data, types of study randomization, clinical trials,
- Basic reviewing quantitative and qualitative literature; carry out an appropriate, rigorous review of the literature; and understand the strengths and weaknesses of different methods of identifying, assessing and synthesizing literature.
- Planning the review: the role of the literature review and specification of the task.
- Identification of relevant literature both published and unpublished: developing a search strategy and using bibliographic databases.
- Appraising the literature: methods for assessing the quality of quantitative and qualitative research.
- Introduction to research methodology
- Planning a research study
- Research problem
- Research designs & sampling designs
- Data collection & data preparation
- Medical statistics - Descriptive statistics & assessment techniques
- Interpretation & Report writing
- Project proposal preparation.

### BIOSTATISTICS

- Introduction to Biostatistics
- Definition, role of statistics in health science and health care delivery system
- Sampling population, sample, sampling, reasons for sampling, probability and non-probability sampling
- Methods of probability sampling - simple random, stratified, systematic procedure, merits and demerits. Use of random number table.



- Organization of data
- Frequency table, histogram, frequency polygon, frequency curve, bar diagram, pie chart
- Measures of location Arithmetic mean, median, mode, quartiles and
- Percentiles – definition, computation (for raw data), merits, demerits and applications.

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- Measures of variation: Range, inter-quartile range, variance, standard deviation, coefficient of variation- definition, computation (for raw data), merits, demerits and applications. skewness and kurtosis.
- Basic probability distributions.
- Concept of probability distribution. Normal, Poisson and Binomial distributions, and application. Concept of sampling distributions. Standard error and confidence intervals.
- Tests of significance:
- Basic of testing of hypothesis – Null and alternate hypothesis, type I and type II errors, level of significance and power of the test, p value.
- Tests of significance (parametric) – t – test (paired and unpaired), Chi square test and test of proportion.
- Correlation and Regression :
- Scatter diagram, concept and properties of correlation coefficient, examples (No computation Simple correlation) Pearson's and Spearman's, testing the significance of correlation coefficient.
- Linear and multiple regressions.
- Synthesizing the evidence: integration of the evidence using both quantitative and qualitative methods; principles of meta-analysis.
- Formulating recommendations and writing the review.
- Recent Advances:
  - ❖ Psychoneuroimmunology [PNI] and psychoneuroendocrinology
  - ❖ Psychophysiology of biological rhythms, emotions, behavior and aging
  - ❖ Stress and its impact on health and disease: Physiological mechanisms underlying stress response.
  - ❖ Psychosomatic medicine
  - ❖ Role of human thinking, behavior and life style in the etiology, pathogenesis, clinical manifestations and management of non-

communicable life-style related diseases.

- ❖ Inherent healing capacities and concept of spontaneous regression; role of positive thinking, health behavior & clinical implications of acupuncture & energy medicine in eliciting inherent healing capacities.
- ❖ Natural and holistic medicine - integrating the physical, psychological, mental, social and spiritual needs of an individual in promotion of positive health, prevention of diseases and disabilities, management of diseases and overall improvement in quality of life.
- ❖ Advances in therapies used in Nutrition

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- ❖ Advances in medical & psychiatric rehabilitation.
- ❖ Integrative medicine.
- ❖ Antioxidants & Nutrition
- ❖ Free Radicals & Nutrition
- ❖ Research in Nutrition & Musculoskeletal Diseases, Cardiovascular diseases, Metabolic Disorders, Respiratory Diseases, Gastrointestinal, Endocrinal disorders, Central Nervous System disorders, Renal System diseases.

### Reference Books

1. Lubert Stryer 'Biochemistry'
2. Medical Textbook of Biochemistry Chatterjee.
3. Lehninger A. L. (1990) 'Principles of Biochemistry' New Delhi - CBS Publisher and Distributor.
4. Modern Nutrition in Health and Disease 10<sup>th</sup> edition by Maurice E. Shils
5. Alfred H. Katz, Prevention and health, the Haworth, Press, New York 1999.
6. Nutritional biochemistry of vitamins David a bendor.
7. Achayya, K.T.:(1998) A Historical Dictionary Of Indian Foods, Oxford Publishing Co.
8. Mahindru, S.N. (2002). Food Additives Characteristics, Detection and Estimation, TataMcGraw-Hill Publishing Co. Ltd. New Delhi.
9. Research Methodology By C.R Kothari
10. International Life Sciences Institute Present Knowledge in Nutrition – latest edition
11. Swaminathan S.: Advanced Textbook On Food & Nutrition Vol. 1 & N (2nd Ed. Revised Enlarged) Bapp Co. 1985.
12. Robinson. Basic Nutrition And Diet Therapy (8th Edition)
13. Robinson, Lawler: Normal & Therapeutic Nutrition (17th Ed.) Macmillan Publishing Co. 1986.
14. Davis J. and Sherer, K. (1994): Applied Nutrition and Diet Therapy for Nurses, 2<sup>nd</sup> edition, W.B. Saunders Co.
15. Davidson's Human Nutrition – Geissler.
16. Nutrition and Biochemistry for Nurses by Jacob Anthikad
17. Willims S. R.: Essentials of Nutrition and Diet Therapy, 4th ed., Mosby College Pub. S.Louis, 1986.
18. Thomas, B.: Manual of Dietetic Practice, 1996.
19. L. MatareseGottschlich Contemporary Nutrition Support Practice, Saunders 1998
20. ASPEN; Nutrition Support, Dietetics
21. Clinical dietetics and nutrition by F.P Antia and Philip Antia.

22. Modern Nutrition in Health and Disease 10<sup>th</sup> edition by Maurice E. Shils
23. Alfred H.Katz, Prevention and health, the Haworth, Press, New York 1999.
24. Nutritional biochemistry of vitamins David a bendor.
25. Achayya, K.T.:(1998) A Historical Dictionary Of Indian Foods, Oxford Publishing Co.
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27. Research Methodology By C.R Kothari
28. International Life Sciences Institute Present Knowledge in Nutrition – latest edition

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29. Swaminathan S.: Advanced Textbook On Food & Nutrition Vol. 1 & N (2nd Ed. Revised Enlarged) Bapp Co. 1985.
30. Robinson. Basic Nutrition And Diet Therapy (8th Edition)
31. Robinson, Lawler: Normal & Therapeutic Nutrition (17th Ed.) Macmillan Publishing Co. 1986.
32. Davis J. and Sherer, K. (1994): Applied Nutrition and Diet Therapy for Nurses, 2<sup>nd</sup> edition, W.B. Saunders Co.
33. Davidson's Human Nutrition – Geissler.
34. Nutrition and Biochemistry for Nurses by Jacob Anthikad
35. Willims S. R.: Essentials of Nutrition and Diet Therapy, 4th ed., Mosby College Pub. S.Louis, 1986.
36. Thomas, B.: Manual of Dietetic Practice, 1996.
37. L. MatareseGottschlich Contemporary Nutrition Support Practice, Saunders 1998
38. ASPEN; Nutrition Support, Dietetics
39. Clinical dietetics and nutrition by F.P Antia and Philip Antia.
40. Davidson and Passamore Human Nutrition – Passamore
41. Clinical Dietetics and Nutrition – FP Antia
42. Normal Therapeutic Nutrition – Corinne Robinson
43. Essentials of Food and Nutrition – Swaminathan
44. Sprouts – JD VaishYogaSamsthan
45. Science and Art of Food and Nutrition – Herbert Shelton
46. Nutritive Values of Indian Foods – NIN (Hyd)
47. Publications of NIN, Hyderabad
48. Herbs that Hheal – HK Bakhru
49. Charakaand Sushruta Samhita
50. Fundamentals of Ayurveda – MahadevShastri
51. Fasting for Healthy and Long Life – Carrington
52. Fasting Cure – Lakshman Sharma
53. Fasting - The Ultimate Diet - Allan Cott
54. Mucusless Diet Healing System - Arnold Ehret
55. The Fasting Cure (Classic Reprint) - Upton Sinclair
56. Fasting Can Save Your Life - Herbert M. Shelton
57. Davidson and Passamore Human Nutrition – Passamore
58. Clinical Dietetics and Nutrition – FP Antia
59. Normal Therapeutic Nutrition – Corinne Robinson
60. Essentials of Food and Nutrition – Swaminathan
61. Sprouts – JD VaishYoga Samsthan
62. Science and Art of Food and Nutrition – Herbert Shelton
63. Nutritive Values of Indian Foods – NIN (Hyd)
64. Publications of NIN, Hyderabad

## SECTION 4: TEACHING AND LEARNING ACTIVITIES

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinical/laboratory/nursing home while studying PG.

Teaching and learning activities: A list of teaching and learning activities designed to facilitate students to acquire essential knowledge and skills outlined are given below:

1) Lectures: are to be kept to a minimum. They may however be employed for teaching certain topics.

- Didactic lectures: recommended for selected common topics for PG
- Students of all specialties.
- Biostatistics
- Use of library
- Research methods
- Medical code of conduct and medical ethics
- National health and disease control programs
- Communication skills
- Integrated lectures: These are recommended to be taken by multidisciplinary teams for selected topics e.g. jaundice, DM, thyroid etc.

2) Journal club: recommended to be held once a week.

All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further, every candidate must make a presentation from the allotted journals, selected articles at least four times a year and a total of 12 seminar presentations in 3 years. The presentation would be evaluated using checklists and will carry the weightage for internal assessment (see checklist in Section F). A timetable with names of the students and the moderator should be announced at the beginning of every year.

3) Subject seminar: Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further every candidate must present on selected topics at least four times a year and the total of 12 seminar presentations in three year. The presentations would be evaluated using checklists and would carry weight age for internal assessment (see checklist in Section F). A time table for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

4) Student symposium: Recommended as an optional multidisciplinary program. The evaluation may be similar to that described for subject seminar.

- 5) Ward Rounds: Ward rounds may be service or teaching rounds
- Service rounds: PG students and interns should do the rounds every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.
  - Teaching Rounds every unit should have 'grand rounds' for teaching purpose. The students should maintain a diary for day-to-day entries of (3) and (4) should be made in the logbook.
- 6) Clinico-Pathological Conference: Recommended once a month for all postgraduate students. Presentation is done by rotation. If cases are not available due to lack of clinical programs, it could be supplemented by published CPCs.
- 7) Inter Departmental Meetings: Strongly recommended particularly with departments of pathology and clinical departments at least once a week. PG students should attend these meetings and relevant entries must be made in the logbook.
- Pathology. A dozen interesting cases may be chosen and presented by the PG students and discussed by them as well as the senior staff from the department of Natural Therapeutics and the visiting consultant in Medicine. The staff of Pathology Department would then show the slides and present final diagnosis. In these sessions, the advance immuno-histo-chemical techniques, the burgeoning markers other recent developments can be discussed so that the candidate is trained to make appropriate observations and interpretations.
  - Radio-diagnosis: Interesting cases and the imaging modalities should be discussed so that the candidate is trained to make appropriate observations and interpretations.
- 8) Teaching Skills: PG students must teach UG students (e.g. medical, para-medical) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty as well as students, (see model checklist in Section F). Record of their participation would be kept in logbook. Training of PG students in Educational Science and Technology is recommended.
- 9) Continuing Medical Education Programs (CME): Recommended that each student should attend at least 2 state level CME programs in 3 years.
- 10) Method of Training:
- Emphasis is on hospital training with candidates given graded responsibilities in the management and treatment of patients entrusted to them, while rotating in Natural medicine units and of subspecialty units. PG also attends respective units' outpatient and inpatient activities and consultations.
  - Didactic lecture and demonstrations by basic and clinical departments to orient all new PG house staff to various departmental services and also introduce basic concept of acute care management of medical/surgical emergencies involving laboratory, radiology, blood bank services and orientation to medical records and library facilities. Lectures are organized over a period of two months and serve as introduction to all new PGs to promote the need for integrated approach between various disciplines. Preferably these should be organized between 8 to 9 am / 3 to 4 pm, to minimize interference with the working of parent departments.
  - Special orientation to bio-statistics, research methodology, legal medicine and computer skills should be organized through lectures for all first year PGs during first 6 months.



- Clinical seminar once a week involving participation of all staff of the department of medicine to ensure combined staff moderated teaching.
- Beside clinics once a week involving one individual senior professor or associate professor or specialist.
- Hospital conference once in a fortnight involving multidisciplinary approach, case selection to be done by senior faculty members to emphasize current diagnostic- therapeutic advances.

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11) Inter Departmental Meetings: Strongly recommended particularly with departments of pathology and clinical departments at least once a week. PG students should attend these meetings and relevant entries must be made in the logbook.

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- Clinical seminar once a week involving participation of all staff of the department of medicine to ensure combined staff moderated teaching.
- Beside clinics once a week involving one individual senior professor or associate professor or specialist.
- Hospital conference once in a fortnight involving multidisciplinary approach, case selection to be done by senior faculty members to emphasize current diagnostic- therapeutic advances.

- Journal club once a week, three to four journals by PGs and junior faculty under supervision of senior faculty.
- Subject seminar once a week, topics to be selected carefully and should not be repeated unnecessarily within two years.
- Mortality-CPC once a week (instead of journal club). Two to three cases will be discussed and moderated by senior faculty. Other consultants invited based on the need.
- Traditional OHP and 35mm slide presentations are to be used wherever necessary, otherwise routinely the power point presentations should be used for all the academic activities.

#### 11. Dissertation work

- Every candidate pursuing degree course is required to carry out work on a selected research project under the guidance of a recognized PG teacher. The results of such a work shall be submitted in the form of a dissertation.
- The dissertation is aimed to train a PG student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
- Every candidate shall submit to the registrar (academic) RGUHS, in the prescribed proforma, a synopsis containing particulars of proposed dissertation work six months from the date of commencement of the course or before the dates notified by the university. The synopsis shall be sent through the proper channel.
- Such synopsis will be reviewed and the university will register the dissertation topic. No change in the dissertation topic or guide shall be made without prior approval of the university.
  - The dissertation should be written under the following headings:
    - Introduction
    - Aims or objectives of study
    - Review of literature
    - Material and methods
    - Results
    - Discussion
    - Conclusion
    - Summary
    - Limitations and Future directions
    - References (Vancouver style)
    - Tables
    - Annexure
- The written text of dissertation shall not be less than 50 pages and not exceed 150 pages excluding references, questionnaires, tables and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" X 11.69") and bound

properly. Spiral binding should be avoided. The guide, HOD and Head of the Institution shall certify the dissertation.

- Four copies of dissertation thus prepared shall be submitted to the registrar (Evaluation) 6 months before final examination or before the dates notified by the university.

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- Examiners appointed by the university shall value the dissertation. Approval of dissertation work is an essential precondition to appear in the university examinations.

## 12. ROTATION

Details of rotation including ancillary postings year wise as follows:

- PG I year

The candidates shall be posted to department of basic medical sciences and to the different departments of Diet & Nutrition at the parent teaching hospital. This would include laboratory duties, clinical duties and teaching assignments to under graduate students.

- PG II year

Apart from the clinical postings at the parent Naturopathy & Yoga Hospital, the candidates shall be posted to 'Specialty departments at the conventional medical hospital.' This is required to have 'an access to the large patient population and receive hands on experience related to the diagnosis, interpretation of the diagnostic procedures, knowledge about the conventional treatment and discussions on using Diet & Nutrition in the management'. This would train the candidates to use this knowledge while treating patients at the parent Naturopathy & Yoga Hospital. The specialties departments to which the two months clinical postings are done on rotation basis are [6 months]:

- Cardiology
- Gastroenterology
- Endocrinology
- Nephrology
- Metabolic & Life style disorders
- Respiratory & Pulmonary medicine
- Neurology
- Rheumatology & Immunology
- Oncology
- Psychiatry

The Department of Diet & Nutrition shall coordinate the postings through the institutional MOUs.

- PG III year

During the third year, following 10 months of external postings the candidate is expected to handle the patients with 'comprehensive care' along with the inputs from Senior Naturopathy and Yoga physicians and Visiting Consultants at the parent Naturopathy & Yoga Hospital, also assist the I<sup>st</sup> year residents and interns in wards, handle emergency rooms, and participate actively in teaching UG medical students and prepare himself for the role of Consulting Naturopathic Physician [specialist] and actively contribute to the integration on "Naturopathy and Yogic Diet" in the mainstream medicine leading to the practice of "evidenced based integrative medicine."

The students are encouraged to attend local, state and national level conferences of professional bodies etc. as part of CME program.

### 13. RESOURCE MATERIALS ON COMPLEMENTARY AND ALTERNATIVE MEDICINE

- Journals
  - Journal of Association of Physicians of India (JAP1)
  - British Medical Journal (BMJ)

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- New England Journal of Medicine
  - The Lancet
  - American Journal of Medicine
  - Issues in Medical Ethics
  - Indian Journal of Tuberculosis
  - Dermatology Clinics
  - GUT (Gastroenterology)
  - Postgraduate Medical Journal
  - Stroke
  - Blood
  - Neurologic Clinic
  - Indian Journal of Nephrology
  - Public Health Papers
  - Indian Journal of physiology and pharmacology
  - Indian Journal of Medical Research
  - Indian Journal of Medical Sciences
  - Journal of Alternative and Complementary Medicine
  - Advances in Mind-body Medicine
  - Perceptual and Motor skills
  - Psychological reports
  - International Journal of Food, Nutrition and Dietetics
  - Diabetics & prevention
  - Health & Nutrition
  - Obesity Life
- Specific:-
    - Indian Journal of physiology and pharmacology
    - Indian Journal of Medical Research
    - Indian Journal of Medical Sciences
    - Journal of Alternative and Complementary Medicine
    - Advances in Mind-body Medicine
    - Perceptual and Motor skills
    - Psychological reports

- Databases:-

- Cochrane Database of Systematic Reviews-CDSR. Collection of 'systematic reviews' summarizing the findings of completed metaanalyses of the evidence presented in their cited studies. Available via Ovid
- Ovid MEDLINE
- ALTMEDEX

Books

- 1) ABC of complementary Medicine By Catherine Zollman 2000, BMJ B<sup>^</sup>. London
- 2) The Guide to Complementary and Alternative Medicine on the Internet By Lillian R. Brazin 2004, The Haworth Information press, NY



- 3) Complementary and Alternative Veterinary Medicine Considered By David W Ramey & Bernard E Rollin. 2004 Iowa State Press, Iowa
- 4) Integrative Medicine By Benjamin Kligler & Roberta Lee. 2004. The McGraw Hill Companies.
- 5) The Scientific Basis of Integrative Medicine. By Leonard A. Wisneski & Lucy Anderson. 2005. The CRC Press. Boca Raton, FL, USA
- 6) Alternative advisor: the complete guide to natural therapies & alternative treatments. Reference WB 890 A4663 1997
- 7) Alternative health & medicine encyclopedia. Reference WB 890 M378a 1998
- 8) Alternative medicine- what works: A comprehensive, easy-to-read review of the scientific evidence, pro & con. Reference WB 890 F958a 1997
- 9) Complementary and alternative medicine: an evidence -based approach. Info Desk WB 890C7365 2003
- 10) Complementary and alternative medicine in rehabilitation. 5<sup>U</sup> floor WB 890 L629 2003
- 11) Complementary and alternative medicine secrets. Reserve WB 18.2 C737 2002
- 12) Fundamentals of complementary and alternative medicine. 5<sup>th</sup> floor WB 890 F981 2001
- 13) Integrating complementary medicine into health systems. 5<sup>th</sup> Floor WB 890 16065 2001
- 14) Integrative health care: complementary and alternative therapies for the whole person. 5<sup>th</sup> floor WB 890 S572i 2001
- 15) Mosby's complementary & alternative medicine, a research - based approach, 5<sup>th</sup> floor WB890 F855m 2004
- 16) Practical dictionary of Chinese medicine Reference W 13 W 814p 2002
- 17) Role of complementary and alternative medicine; accommodating Pluralism, 5<sup>th</sup> floor WB890 R745 2002
- 18) Textbook of complementary and alternative medicine. Reference WB 890 T355 2003
- 19) Basics Of Clinical Nutrition, Joshi Y K
- 20) Daily Bread , Agarwal Yatish
- 21) Maternal Nutrition, Rao, Kamini A And Subbiah Vindya
- 22) Jane Brody`S Nutrition Book, Brody, Jane E
- 23) Guide To Good Eating, Keshava Bhatt P
- 24) Advanced Text Book On Food And Nutrition Volume 1, Swaminathan M
- 25) Advanced Text Book On Food And Nutrition Volume 2, Swaminathan M
- 26) A Manual Of Nutrition, Nin
- 27) Vegetables For Vitality, Readers Digest
- 28) Juice, Gala D R
- 29) Cure By Juices, Preeti
- 30) Fresh Vegetable And Fruit Juices, Walker N.W
- 31) Juices For Health, Rajeev Jyoti
- 32) Miracle Juices, Chairmaine Yabsley & Amanda Cross
- 33) Fruit And Vegetable Juice Therapy, Saha N.N
- 34) Fruit And Vegetable Juice Therapy, Ahmad Syed Aziz
- 35) A New World Of Fruits And Vegetable, Desai D C
- 36) Cure By Fruits And Vegetables, Preethi

- 37) Fruits, C,J,Modhi
- 38) Encyclopedia Of Fruits Vegetable, Joseph M
- 39) Fruits, Gopalan Indira & Mohanram,M
- 40) Home Scale Processing And Preservation Of Fruits And Vegetables, Cftri
- 41) The Healing Powers Of Fruits And Vegetables, Jensen Bernard
- 42) Vegetables Spices & Fruits For Health, Albert
- 43) A Textbook Of Foods, Nutrition And Dietetics, Raheena Begum
- 44) Satvabaritha Naisargika Aaharagalu, Reddy A.V.G

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- 45) The Secret Benefits Of Onion And Garlic, Kumar Vijay
- 46) Food Hygiene And Sanitation, Roday S
- 47) A Dictionary Food And Nutrition, Sharma J L
- 48) A First Course In Food Analysis, Sathe.A.Y
- 49) Advantages Of Race Food, Julian P Thomas
- 50) Basic Food Preparation, Raina Usha
- 51) Fat -Burner Foods, Caroline M.Shreeve
- 52) Food Science Chemistry And Experimental Foods Swaminathan,M
- 53) Foods That Harm,Foods That Heal, Readers Digest
- 54) Foods That Heal, Bakhru H K
- 55) Foods That Heal, Sharma Rajeev
- 56) Diet And Diet Reforms, Gandhi M K
- 57) Diet And Diabetes, Ragurama T.C & Others
- 58) Diet And Digestion, Sundaram Yogacharya
- 59) Diet And Health,Robert Bell
- 60) Diet And Health Prevention Of Cancer, Bel,Robert
- 61) Diet And Heart Disease, Ghafoorunissa & Krishnaswamy, Kamala
- 62) Diet And Nutrition, Rudolph Ballentine
- 63) Diet, Nutrition And Prevention Of Chronic Disease, W.H.O
- 64) Airola Diet And Cook Book, Airola,Paavo
- 65) Key To Rational Dietetics, Carque, Otto
- 66) Rational Diet, Otto Carque
- 67) Raw Juice Therapy, Saha N.N
- 68) Food And Nutrition, Association Of Indian Universities
- 69) The Food Pharmacy, Jean Carper
- 70) A Drugless Treatment For Partial, Chas H Murray
- 71) Science And Fine Arts Of Food And Nutrition, Shelton, M. Herbert
- 72) Diet Cure For Common Ailments, Bakhru H K
- 73) Diet Management, Rekha Sharma
- 74) Diet Therapy, Das Sangita
- 75) Diet For A Strong Heart, Michio Kushi
- 76) Diet For Cultured People, Josiah Oldfield
- 77) Diet In Diseases, Bansal Sunita Pant
- 78) Diet Is Divine Part -2 :Modern, Ayurvedic And Spiritual Concept About Food, Althavale V.  
B. And Althavale Kamlesh V.
- 79) Diet Is Divine Part -1 :Modern, Ayurvedic And Spiritual Concept About Food, Althavale V.

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80) Diet And Salad, Norman Walker

81) Diet To Dissolve Kidney Stone, Singh S J

82) Diet: Nutrition & Life Style, Gupta , Padmini

83) Dietetics, Sri Lakshmi B

84) Dietetic Disappointments And Failures, George S Wegen

85) Child Nutrition And Poverty In South India, Barbara Harriss

86) Cancer And Nutrition, Simone, Charles B

87) Manual For Low Coast Ballanced Diet, National Institution Of Nutrition

88) Healthy Ageing, Dewan, A.P

89) Nutrition And Dietetics, Joshi Shubhanini A

90) Handbook Of Nutrition, Kiran N Udaya

91) Your Food And You, Achaya K.T

92) Your Family Guide To Good Nutrition, Food And Nutrition Department Of Amc India

93) Nutrition Handbook, Jensen Bernard

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- 94) Nutrients A To Z, Sharen, Michael
- 95) Nutrition And Child Development Ed.2, Elizabeth,K.E
- 96) Nutrition And Diet Therapy,Carolynn E.Townsend
- 97) Nutrition And Health: The Vegetarian Way, Ragunath,K.R
- 98) Nutrition : A Health Promotion Approach, Web ,Geoffrey P
- 99) Nutrition And Home Management, Suprit Malkhan
- 100) Nutrition In Children, Sachdev,H.P.S & Panna Choudhray Ed
- 101) Nutrition Science, Sri Lakshmi B
- 102) Nutrition Weight Control And Exercise, Frank Katch, & William D Mcardle
- 103) Nutritional Requirements And Recommended Dietary Allowances For Indians, I.C.M.R.Report
- 104) Nutritive Value Of Indian Foods, National Institution Of Nutrition
- 105) Nutritive Value Of Indian Foods, Gopalan G
- 106) Principles Of Nutrition Dietetics, Swaminathan,M
- 107) 101 Nutrition Tips For People With Diabetes, Geil Patti B
- 108) A Textbook Of Bio-Nutrition, Paul S
- 109) Manual Of Nutritional Therapeutics, David H.Alpers
- 110) Introduction To Human Nutrition, Michael J.Gibney
- 111) Khana Khazana, Kapoor Sanjeev
- 112) Simply Vegetarian Recipes For The Indian Kitchen, Kapoor Sanjeev
- 113) Simply Vegetarian Recipes For The Indian Kitchen; Kapoor Sanjeev
- 114) Simply Vegetarian Recipies For The Indian Kitchen, Kapoor Sanjeev
- 115) Fiber : The Vital Miising Nutrient, Miller,Bruce B
- 116) The Vitamin Book, Silverman Harold M
- 117) Fit Food For Humanity, Natural Hygenic Press
- 118) Better Food For Better Babies And Their Families, Gena Larsons
- 119) Food For Healing, Charlos Rachil
- 120) Food For Health, Dewan A P
- 121) Food For Life, Barnard Neal
- 122) Brain Food : The Essential Guide To Boosting Brain Power, Lorraine Perretta
- 123) Colostrum, Jenson Bernard
- 124) The Complete Book Of Vitamin Cures, Prevention Health Books
- 125) The Secret Benifits Of Juice Therapy, Kumar Vijay
- 126) Kick Your Sugar Habit, Gupta Sanjeev
- 127) Textbook Of Food And Nutrition, Fredrick Annie
- 128) You Are What You Eat, Victor H Lindlahr
- 129) You Are What You Eat, Poddar Tanushree

- 130) Healing Power Of Foods, Bansal Sunita Pant
- 131) Handbook Of Food And Nutrition, Swaminathan,M
- 132) Handbook Of Food And Nutrition, Chatterjee, Githanjali
- 133) Arrange Right Diet For Human Beings, Shivananda Saraswathi
- 134) In Pursuit Of Youth, Kamen Betty
- 135) The Buddhist Diet Book, Holloway L.C
- 136) Change One, The Diet And Fitness Plan, Foreyt John
- 137) Williams Basic Nutrition Diet Therapy, Nix,Staci
- 138) Textbook Of Human Nutrition, Bamji Mahtab S And Others
- 139) Basically Nutrition, Krishnaswamy Sheela
- 140) Herbs And Nutrients For The Mind, Meletis Chris D And Barker Jason E
- 141) Food Scienc For All, Bircher Bennar
- 142) Food Scienc For All, Health Reasearch
- 143) Food Science, Mudambi ,Sumathi R & Rajagopal M.V

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- 144) Food Storage And Preservation, Singh Bharat
- 145) Williams Nutrition For Health, Fitness And Sport, Williams Melvin H
- 146) Nutrition And Food, Veer Udai
- 147) Handbook Of Foods And Nutrition, Blank F.C
- 148) Lifelong Health And Vitality Through Food, Humbrat Smokey Sanitillo
- 149) Clinical Dietetics And Nutrition, Antia, F.P
- 150) Ant-Aging, Kumar
- 151) Handbook Of Wheat Grass, Vaman A Hodike
- 152) Diet: For Transcendence, Rosen(Steven)
- 153) Speaking Of Child Care And Nutrition, Raheena Begam M
- 154) Breast Milk : Nectar On Earth And Supplimentary Feed, Athavale, J.B & Athavale, K.J
- 155) Recommended Dietary Allowances, Frbnrc
- 156) Essentials Of Nutrition & Diet Therapy, Sue Rodwell Williams
- 157) Some Therapeutic Diet, National Institution Of Nutrition
- 158) High Blood Cholesterol Causes, Prevention And Treatment, Gupta, Krishna
- 159) The Z Factor: How Zinc Is Vital To Your Health, Graham Judy & Michael
- 160) A Cancer Therapy, Gerson, Max
- 161) Alternative In Cancer Therapy, Pelton, Ross & Overholser, Lee
- 162) The New Vegetarian, Michael Cox And Desada Crocket
- 163) Vegetarianism, Infant
- 164) Moral Basis Of Vegetarianism, Gandhi M.K
- 165) Vegetarianism, Jussawall J M
- 166) The Encyclopedia Of Healing Foods, Murray Michael
- 167) Metaphysics Of Raw Foods, Stella Me Dermnt
- 168) Raw Food And Health, St Louis A Estes
- 169) Mucusless Diet Healing System, Arnold Ehret
- 170) Juice Diet For Perfect Health, Gala , D.R & Others
- 171) Science And Fine Art Of Food, Vivian Virginia & Vetrana B.Sc
- 172) The Science Of Food, Gaman, P.M & Sherrington, K.B
- 173) Leafy Vegetables, Krishnamurthy K S
- 174) Medical Dietetics, Jussawall J M
- 175) Food Irradiation The Facts, Tony Webne And Tim Lang
- 176) Herbal Foods, Ramaswamy Pillai, N
- 177) The Hippocrates Diet And Health Program, Ann Wigmore
- 178) Helping Yourself With Food, Midred Corter
- 179) Complete Book Of Vitamins & Minerals, Mc Donald Airlon & Others

- 180) 30 Day Cholesterol Programme, Krans ,Barbara
- 181) Some Common Indian Recipes & Their Nutritive Value, Nin
- 182) Low Cost Nutrients Supplements, Nin
- 183) Menus For Low Cost Balanced Diets & School Lunch Programme: South India, Nin
- 184) Menus For Low Cost Balanced Diets & School Lunch Programme: North India, Nin
- 185) Complete Food Programme, Wigmora Ann
- 186) Economy And Food In Ancient India, Om Prakash
- 187) Food And Nutrition, Sumati R, Mudambi
- 188) Food And Nutrition Facts & Figures, Kushan Gupta
- 189) Food And Health, Potty Venkitakrishnan N.
- 190) Food That Harm Food That Heal, Reader" Digest
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- 192) Foods That Heal, Bernard, Jenson
- 193) Fundamentals Of Food And Nutrition, Mudambi ,Sumathi R & Rajagopal M.V
- 194) Krauses Food , Nutrition And Diet Therapy, Mohan Kathleen L & Escott-Stump ( Sylvania)



- 195) Medicinal Secrets Of Your Food, Aman
- 196) Miracle Foods 25 Supernutritious Foods For Great Health, Anna Selby
- 197) Power Food, Janette Marshall
- 198) Protective Foods In Health & Diseases, Mukherjee K R
- 199) Studies On Supplementary Foods, Indian Council Of Medical Research
- 200) The Food Medicine Bible A Self Help Guide, Mindell, Earl
- 201) The Saffola Food Check, Parekh, Rajesh
- 202) The Unfired Food Diet, James Faulkner N D
- 203) Calcium And Nutrition, Health Media Of America Nutrition
- 204) Cancer And Nutrition, Health Media Of America Nutrition
- 205) Cancer Nutrition Answer, Miller, Bruce B
- 206) Clinical Dietetics And Nutrition, Antia, F.P
- 207) Complete Guide To Health And Nutrition, Null, Gary
- 208) Diabetes Nutrition Help, Miller, Bruce B
- 209) Healing Through Nutrition, Werbach, Melvyn R
- 210) Human Nutrition And Dietetics, Swaminathan M
- 211) Human Nutrition And Dietetics, Passmore R & Others
- 212) Hypoglycemia : A Nutritional Approach, Tenny, Louise
- 213) Menopause Nutritional Help, Miller, Bruce B
- 214) Modern Nutrition In Health And Disease, Passmore R & Others
- 215) Newest Discoveries In Nutrition, Bernard R W
- 216) Nutrition For Mother And Child, Venkatachalam P S
- 217) Sports Nutrition For Women, Anitha Bean And Peggy Wellington
- 218) Superior Nutrition, Herbert M Shelton
- 219) Women Special Nutritional Needs, Bruce B Miller
- 220) Yoga Cookbook, Sivananda Yoga Vedantha Centre
- 221) Vegetarian Handbook, Null, Gary
- 222) Mental And Elemental Nutrients, Pfeffer, Carl C
- 223) Salads, Amritha Patel
- 224) Soups, Kasturi Ranghachari
- 225) The Miracles Of Live Juices, Kanti Bhatta & Manhar Shah
- 226) Cook Book, Tilden J H
- 227) Perfect Way In Diet, Anna Kingsford
- 228) Nutritional Sex Control And Rejuvenation, Raymond Bernad
- 229) Vital Foods For Total Health, Bernard Jensen
- 230) Wheat Millet And Other Grains, Beatrie Trum Hunter

- 231) The Wheat Grass Booh, Ann Digmare
- 232) Natural Foods, Otto Carque
- 233) Eat Naturist Food And Leave Long, Josian Oldfield
- 234) Health Through Scientific Nutrition, Rymond W Bernold
- 235) Mrs Richters Cook Less Book, Health Research
- 236) Food Science, Sri Lakshmi B
- 237) Why Not To Be A Vegetarian, Jain Kumar Arun
- 238) Vegetarian Indian Treasures, Mayuri Bhargava
- 239) Nutrition And Diet Therapy Evidence Based Applications, Lutz Carroll AndPrzytulski Karen
- 240) Vegetarianism, Chhajer,Bimal
- 241) Essentials Of Human Nutrition Encompassing Basic Applied And Clinical AspectsIn Nutrition, Majumdar D C
- 242) Vegetarian Varieties, Raghunath Shashi
- 243) Arthritis, Rhematism And Osteoporosis, Jenson Bernard

- 244) Apple Cider Vinegar, Paul C Bragg
- 245) Nimma Aharada Vyadakiya Rahasya, Amaana
- 246) Toxicless Diet: Body Purification & Healing System, Bragg,Paul,G & Bragg,Patricia
- 247) Your Diet In Health And Disease, Harry Benjamin
- 248) Dealing With Obesity, Das Sangita
- 249) The Secrets Of Onion And Garlic, Kumar Vijay
- 250) Nutrition And Biochemistry For Nurses, Anthikad Jacob
- 251) Nutrition And Child Care A Practical Guide, Ghosh Shanti
- 252) Nursing Manual Of Nutrition And Therapeutic Diet, Indrani T K
- 253) Essence Of Nutrition, Salins Onila
- 254) Hand Book Of Nutrition And The Kidney, E Mitch William And Ikizler T Alp
- 255) Food For Health, Anand Raj Mool
- 256) The Johnsons Baby Mothers Guide : Raising A Happy, Healthy And ConfidentChild,L Nagpal
- 257) Diabetic Bhoj,Ahuj,M.M.S & Rekha Sharma
- 258) Menues For Low Cost Ballanced Diet& School Lunch, National Institution OfNutrition
- 259) Studies On Free School Children, Indian Council Of Medical Research
- 260) Dr Anderson Hcf Diet, James Anderson
- 261) Vitamins Delights, Malini Bisen
- 262) Vitamins That Heal, Bakhru,H.K
- 263) Vitamins For Your Health, Mervyn, Len
- 264) Juice Therapy, Sharma S.K
- 265) Changing Dietary Pattern And Habits,Vidyarthi & Others
- 266) Hidden Food Allergies, Astor ,Stephen
- 267) Vitamin Analysis For The Health And Food Sciences, Eitenmiller (Ronald R) &Landen W.O
- 268) Nutrition A Practical Approach, Bijilani,R.L

#### E-books

- Integrative medicine. It provides the first definitive clinical reference, for the rapidly growing field of integrative medicine. Using a clinical, disease-oriented approach, integrative Medicine offers practical guidance for safely and effectively integrating complementary and alternative therapies into regular primary care practice. It covers therapies such as botanicals, supplements, mind-body, lifestyle choices, nutrition, exercise, spirituality, and more.
- Alternative Medicine Foundation. American Alternative Foundation Inc. Clearinghouse for CAM information and news, including the HerbMed database. Contains resource guides for a variety of CAM modalities
- Alternative Medicine Homepage, University of Pittsburgh Guide to CAM resource on the Internet Selected sites must meet the following criteria: 1) are authorized body for the CAM system;2) provides quality information in an objective manner, 3) are resources for locating quality CAM

literature; and 4) sites help individuals make Informed decisions

- Alternative Medicine Health Care Resources. McMaster University Mega-directory of CAM internet sites.
- NOAH (New York Online Access to Health): Complementary and Alternative Medicine. New York Academy of Medicine Library Information guide to CAM resources on the Web; includes sections on different CAM modalities.
- Cochrane Collaboration complementary Medicine Field University of Maryland School of Medicine Overview of the mission and activities of the Cochrane Collaboration Complementary Medicine Field includes links

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to the Complementary Medicine Field Newsletter, Complementary Medicine Reviews & Protocols and the Cochrane controlled Trials Registry.

- Educational Development for Complementary and Alternative Medicine (EDCAM) Curriculum Resources American Medical Student Association (AMSA)-Included are topical descriptions, research summaries; references in books, journals, and Newsletters; audiovisual materials, web- sites with commentary; suggested reading lists; And reference to CAM courses at other health professional programs
- Holistic Kids. Center for Holistic Pediatric Education and Research This web site provides information on diverse Complementary and Alternative Medicines, local practioners practicing CAM in the Boston area, resources available to providers, and other useful tools for learning about CAM
- Nutrition.gov. Clearinghouse for nutritional information put out by US government Agencies; includes food facts and safety, health management and lifecycles issues
  
- Government [INTERNATIONAL-US BASED]
- National Center for Complementary and Alternative Medicine- NCCAM National Institutes of Health. Supports rigorous research on CAM with a focus on research, training/career development, outreach, and integration of CAM practices in to conventional medicine Contains links to information on training, clinical trials, treatments, and alerts/ advisories
- Bed Watch U.S. Food and Drug Association FDA medical product reporting program. Contains safety information and ways of reporting adverse effects of herbs, nutraceuticals, prescription and over-the counter medication
- MEDLINE plus. Alternative Medicine. Contains overviews and research articles on various CAM modalities, including; acupuncture, chiropractic, naturopathy and homeopathy.
- Nutrition gov. Clearinghouse for nutritional information put out», government agencies; includes food facts and safety, health management and lifecycle issues.
  - Office of Cancer Complementary and Alternative Medicine-OCCAM National Cancer Institute Coordinates the activities of the National Cancer Institute (NCI) in the arena of complementary and alternative medicine. Information on clinical trails, funding opportunities, and general CAM is provided.
- Office of Dietary Supplements- ODS National Institute of Health Supports research and disseminates research results in the area of dietary supplements. Also provides advice to other Federal agencies regarding research results related to dietary supplements. Responsible for the International Bibliographic Information on dietary Supplements (IBIDS) database
- Health finder® U S Department of Health and Human Services Searchable guide to reliable consumer health information from the Federal Government.
- Food and Nutrition Information Center-FNIC. U.S Department of Agriculture Collects and disseminates information about food and human nutrition. Contains information on dietary supplements, food composition, and dietary guidelines.

## SECTION 5: MONITORING LEARNING PROGRESS

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching/learning activities. It may be structured and assessment be done using checklist that assess various aspects. Checklists are given in Section F.

The learning outcomes to be assessed should include:

- Personal attitudes
- Acquisition of knowledge
- Clinical and operative skills
- Teaching skills
- Dissertation

Personal Attitudes - The essential items are:

- Caring attitudes
- Initiative
- Organizational ability
- Potential to cope with stressful situations and undertake responsibility
- Trustworthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner that establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers

Acquisition of knowledge: the methods used comprise of "logbook" which records participation in various teaching/learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The supervisor should periodically validate the logbook. Sortie of the activities are listed. If the list is not complete, Institutions may include additional activities, if so desired.

- Journal Review Meeting (journal club): The ability to do literature search, in depth study, presentation skills, and use of audio-visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model checklist -1, section F)
- Seminars/.yympos/a: the topics should be assigned to the student well in advance to facilitate in-depth study. The ability to

do literature search, in-depth study, presentation skills and used audio-visual aids are to be assessed using a checklist.

- Clinico-pathological conferences: This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and

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therapeutic problems by using an analytical approach. The presenters are to be assessed using a checklist similar to that used for seminars.

- ❑ Medical audit: Periodic morbidity and mortality meeting to be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.
- ❑ Clinical Skills. Day to day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidate's sincerity and punctuality, analytical ability and communication skills (see Model checklist 3, Section F)
- ❑ Clinical Meetings: candidates should periodically present cases to his peers and faculty members. This should be assessed using a checklist (see Model checklist 4, Section F)
- ❑ Clinical and Procedural Skills: the candidate should be given graded responsibility to enable learning by apprenticeship. The guide by direct observation assesses the performance. The student in the logbook records particulars (see table no. 3, Section F).
- ❑ Teaching Skills: candidates should be encouraged to teach UG medical students and paramedical students if any. This performance should be based on assessment by faculty members of the department and from feedback from the UG students (see model checklist 5, Section F)
- ❑ Dissertation in the Department: Periodic presentations are to be made in the department. Initially, the topic selected is to be presented before submission to the University for Registration again before finalization for critical evaluation and another before final submission of the completed work (see model checklist 6 and 7, Section F)
- ❑ Periodic Tests: The departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce.
- ❑ Work Diary/Log Book: every candidate shall maintain a work diary and record his or her participation in the training programs conducted by the departments such as journal reviews, seminars, etc. The candidate as well as details of may make special mention of the presentations clinical or laboratory procedures if any conducted by the candidate.
- ❑ Records: Records, logbooks and marks obtained in tests will be maintained by HOD and will be made available to the university.

#### Logbook:

The logbook is a record of the important activities of the candidates during his training; internal assessment should be based on the evaluation of the logbook. Collectively, logbooks are a tool for the evaluation of the training program of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate. A format for the logbook for the different activities is given in tables 1 and 2 of Section F,

Every student must maintain a record book (diary/logbook) and the work carried out by him and the training program undergone by him during the training, including details of a rotations, night calls, procedure and consultations done as M.D. candidates. These record books should be checked and assessed by faculty members imparting the training and certified by the HOD.



PG student diary should include the following activities.

Format for PG diary (LOGBOOK)

- Cases seen on rounds - description of interesting cases and other miscellaneous topics discussed.
- Outpatient cases seen and details of interesting cases with follow up.
- Procedures done on inpatients and outpatients and consultations done.
- UG teaching done during the day with details.
- PG training programs attended - details of bedside clinics, basic sciences, subject and clinical seminars, journal clubs, and hospital conference.
- Night duties - details of patients managed and emergencies, consultations. Ward calls attended.
- Details of study with topics covered during off hours in library/home, Periodicals and journals reviewed with notes on interesting articles.
- Medical meetings, seminars, local professional meetings or other interesting CME, seminars attended.
- Diary should be reviewed on weekly basis by unit faculty and certified on monthly basis for PG's benefit at the end of each specialty rotation. Faculty should comment regarding absences and irregularities and make appropriate comments and suggest remedial measure for problematic prodigies.
- Satisfactory progress and 80% attendance mandatory before student allowed appearing for university examination.
- Size of notebook: 15cm x 21 cm with 200 pages. All notebooks should have seal of college and HOD's approval: Extra notebooks utilized as and when necessary. Diaries should be presented at the time of university clinical exam for review by examiners as per university regulations.

## INTERNAL EVALUATION OF P.G. STUDENTS PERFORMANCE DURING THREE YEARS

### I year of M.D. students

Assessment of students with multiple choice questions, multiple short notes covering wide range of topics and practical examination with attention to history taking, symptomatology, clinical skills, relevant diagnosis and therapeutic plans ascertained. Suggested time of evaluation is after six months and at the end of I<sup>st</sup> year.

### II year of M.D. students

Students should be evaluated at the end of cardiology, neurology, rheumatology & immunology postings with theory and practical examinations by concerned specialties along with one faculty from Natural Medicine and make appropriate recommendations to meet minimal satisfactory guidelines expected of 2<sup>nd</sup> year PG students. Other specialties with short rotations of one month should be evaluated with MCQ format and viva regarding candidates, comprehension of the subject.

### III year of M.D. students

PGs should be evaluated at the beginning of his/her 3<sup>rd</sup> year training by panel of senior PG teachers. Suggested pattern of assessment with two essay type theory papers and multiple choice questions, clinical skills, diagnostic and therapeutic skills evaluated intermittently by unit faculties. Mock examinations suggested -three to four months prior to final university exam should consist of two questionpapers each 3 hours duration, one MCQ with 200 questions and practical and viva voce similar to university examination under the supervision of senior faculty. Results of all evaluations should be entered into PGs diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

Procedure for Defaulters: Every department should have a committee to review such situations. The guide and HOD counsel the defaulting candidate. In extreme cases of default, the departmental committee may recommend that defaulting candidate be withheld from appearing from the examination if he/she fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

### SCHEME OF EXAMINATION

- Written papers (Theory)

There shall be four question papers, each paper of three hours duration. Each paper shall consist of two long essay questions, each question carrying 20 marks and six short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Details of distribution of topics for each paper will be as follows:

- Philosophy and Practice of Naturopathy and Yogic Diet and Basic Nutrition.
- Applied Nutrition and Dietetics
- Management of Diseases Through Nutrition and Dietetics
- Research Methodology and Recent Advances in Clinical Nutrition and Dietetics

NOTE: The distributions of chapters/topics shown against the papers are suggestive only

- |  |                 |
|--|-----------------|
| • Clinical examination   | Total marks 200 |
| • To elicit competence in clinical skills and one long case-   | 100 marks       |
| • Differential diagnostic formulations two short cases-<br>x 2 | 50              |
| • Viva voce Examination  | 100 marks       |

Aims to elicit candidate's knowledge and investigate therapeutic skills

- Viva-voce examinations: ( HO marks)

All examiners will conduct viva-voce conjointly on candidates' comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. Candidates may be also be given case reports, charts, gross specimens, histopatholog

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slides, x-rays, ultrasound, CT scan images, etc., for interpretation. In addition, the candidates may also be given specimens to evaluate the skills in Naturopathic diagnostic procedures and their interpretations. Questions on use of instruments will be asked. It includes discussion on dissertation.

- Pedagogy Exercise: (20 marks)

A topic is given to each candidate in the beginning of clinical examination. He/she asked to make a presentation on the topic for 8-10 minutes.

Maximum marks

Theory	Practical	Viva	Grand Total
400	200	100	700

Chapter -V (contd) Format of Model Check Lists

Check List-1.

Model check list for evaluation of journal review Presentations

Name of the Student:

Name of the Faculty/Observer:

Date:

SI. No	Items for observation during presentation	Poor 0	Below average 1	Average 2	Good 3	Very Good 4
1	Article chosen was					
2	Extent of understanding of scope & objectives of the paper by the candidate					
3	Whether cross references have been consulted					
4	Whether other relevant publications consulted					
5	Ability to respond to questions on the paper/subject					
6	Audio-Visual aids used					
7	Ability to defend the paper					
8	Clarity of presentation					
9	Any other observation					
	Total Score					

**Check List-45** List for Evaluation of seminar presentations

Name of the Student:

Name of the Faculty/Observer:

Date:

SI. No	Items for observation during presentation	Poor 0	Below average 1	Averag e2	Good 3	Very Good 4
1	Whether other relevant publications consulted					
2	Whether cross references have been consulted					
	Completeness of preparation					
4	Clarity of presentation					
5	Understanding of subject					
6	Ability to answer questions					
7	Time scheduling					
8	Appropriate use of Audiovisual aids					
9	Overall performance					
10	Any other observation					
	Total Score					

**Check List 46** for Evaluation of clinical work in ward / OPD  
 (To be completed once a month by respective Unit Heads including posting in other Departments)

Name of the Student: \_\_\_\_\_ Name of the Unit Head: \_\_\_\_\_ Date \_\_\_\_\_

SI. No	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very Good 4
1	Regularity of attendance					
2	Punctuality					
3	Interaction with colleagues and supportive staff					
4	Maintenance of case records					
5	Presentation of cases during rounds					
6	Investigations work up					
7	Beside manners					
8	Rapport with patients					
9	Counseling patients relatives for blood donation or postmortem and case follow up					
10	Overall quality of ward work					
	Total Score					

**Check List 47** for clinical presentation

Name of the Student

Name of the Faculty:

Date:

SI no	Points to be considered	Poor 0	Below average 1	Average 2	Good 3	Very Good 4
1	Completeness of history					
2	Whether all relevant points elicited					
3	Clarity of Presentation					
4	Logical order					
5	Mentioned all positive and negative points of importance					
6	Accuracy of general physical examination					
7	Whether all physical signs elicited correctly					
8	Whether any major signs missed or misinterpreted					
9	Diagnosis: Whether it follows logically from history and findings					
10	Investigations required • Complete list • Relevant order • Interpretation of investigations					
11	Ability to react to questioning Whether it follows logically from history and findings					
12	Ability to defend diagnosis					
13	Ability to Justify differential diagnosis					
14	Others					
	Grand Total					



**Check List** for evaluation of teaching skill practice

Sl.No		Strong point	Weak Point
1	Communication of the purpose of the talk		
2	Evokes audience interest in the subject		
3	The introduction		
4	The sequence ideas		
5	The use of practical examples and/or illustrations		
6	Speaking style(enjoyable, monotonous, etc. specify)		
7	Attempts audience participation		
8	Summary of the main points at the end		
9	Asks questions		
10	Answers questions asked by the audience		
11	Rapport of speaker with his audience		
12	Effectiveness of the talk		
13	Uses AV aids appropriately		

Check List -VI

Model check list for dissertation presentation

Name of the Student:

Name of the Faculty

Date:

Sl. No	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1	Interest shown in selecting a Topic					
2	Appropriate review of literature					
3	Discussion with guide & other faculty					
4	Quality of Protocol					
5	Preparation of proforma					
	Total Score					

Check List -VII

Continuous evaluation of dissertation work by guide / co-guide

Name of the Student:

Name of the Faculty.

Date:

SI No	Items for observation during presentations	Poor 0	Below average 1	Average 2	Good 3	Very Good 4
1	Periodic consultation with guide/co-guide					
2	Regular collection of case material					
	Depth of analysis/discussion					
4	Departmental presentation of findings					
5	Quality of final output					
6	Others					
	Total Score					







## Section 6: Medical Ethics Sensitization and Practice

### Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems to accomplish the Goal (1), General Objective (2) stated in section B and develop human values. It is urged that effective sensitization be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentation, bedside rounds and academic postgraduate programs.

### Course Contents

- Introduction to medical ethics.
  - What is Ethics?
  - What are values and norms?
  - Relationship between being ethical and human fulfillment
  - How to form a value system in one's personal and professional life?
  - Heteronomous Ethics and Autonomous Ethics
  - Freedom and personal responsibility.

#### Definition of Medical Ethics

- Difference of Medical Ethics and bio-ethics
- Major principles of medical ethics.
  - Beneficence =Fraternity
  - Justice =equality
  - Self-determination (autonomy) =liberty
- Perspective of Medical Ethics
  - The Hippocratic oath
  - The declaration of Helsinki
  - The WHO declaration of Geneva
  - International code of medical ethics (1993)
- Ethics of the Individual

- The patient as a person
- The right to be respected
- Truth and confidentiality
- The autonomy of decision
- The concept of disease health and healing
- The right to health
- Ethics of behavior modification
- The physician-patient relationship
- Organ donation

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