

**National Education Policy – 2020**  
Sri Dev Suman Uttarakhand University Badshahithaul,  
Tehri Garhwal

**TWO-YEAR DIPLOMA  
COURSE  
IN**

**PUBLIC HEALTH AND GENERAL HYGEINE**



**Proposed & Recommended By:**

**DEPARTMENT OF ZOOLOGY**  
PT. L.M.S. CAMPUS RISHIKESH  
SRI DEV SUMAN UTTARAKHAND UNIVERSITY  
RISHIKESH – 249201, DEHRADUN  
UTTARAKHAND  
BoS Held on 11-07-2023

**Board of Studies (BoS) Member**  
**Department of Zoology**  
**Pt. Lalit Mohan Sharma Campus, Rishikesh**  
**Sri Dev Suman Uttarakhand University**

<b>S. No.</b>	<b>Name</b>	<b>Designation &amp; Address</b>	<b>Sign.</b>
1.	Prof. G.K. Dhingra	Dean, Faculty of Sciences	

<b>S. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Sign.</b>
1.	Prof. D. M. Tripathi	Professor & Head	
2.	Prof. Surman Arya	Professor	
3.	Prof. Ahmad Pervez	Professor	
4.	Prof. Smita Badola	Professor	

**Director from Research Institute**

<b>S. No.</b>	<b>Name</b>	<b>Designation &amp; Address</b>	<b>Sign.</b>
1.	Prof. Anita Rawat	Director, USERC, Dehradun	

**Subject Experts**

<b>S. No.</b>	<b>Name</b>	<b>Designation &amp; Address</b>	<b>Sign.</b>
1.	Prof. M. S. Rawat	Principal, Pt. Lalit Mohan Sharma Campus, Rishikesh Sri Dev Suman Uttarakhand University	
2.			

## Invited Principal from Govt. Post Graduates College

<b>S. No.</b>	<b>Name</b>	<b>Designation &amp; Address</b>	<b>Sign.</b>
1.	Prof. Pushpa Negi	Principal, Govt. P.G. College, Tehri	
2.	Prof. Pankaj Pant	Principal, Govt. P.G. College, Nagnath Pokhari	
3.	Prof. Kuldeep Negi	Principal, Govt. P.G. College, Khanpur, Haridwar	

**SYLLABUS OF**

**HEALTH AND HYGIENE**

**AS PART OF LIFE SKILLS COURSES**  
**UNDER CBCS FRAMEWORK w.e.f. 2023-24**

## Theory and Practical Examination Pattern

Theory (External) each theory paper carrying maximum marks 75 and shall consist two sections A and B. Examination duration shall be 03 hours.

**a) Section A: (short answers type, 200 words).**

Section A will consist of 08 questions, each of 6 marks in which 5 have to be answered.

**Total:  $6 \times 5 = 30$**

**b) Section B: (long answers type, 500 words).**

Section B will consist of 05 questions, each of 15 marks in which 3 have to be answered.

**Total:  $3 \times 15 = 45$**

For each theory paper internal assessment shall be conducted periodically (in the form of class tests and/or assignments/ group discussion/ oral presentation/ overall performance) during the semester period. Total marks allotted to internal assessment shall be 25(assignment 10 marks, written test / viva 10 marks and regularity 5, marks). The evaluated answer sheets/ assignment have to be retained by the Professor In-charge for the period of six months and can be shown to the students if students want to see the evaluated answer sheets. The marks obtained by the students shall be submitted to the head of the concerned department/ the Principal of the college for uploading on to the University examination portal.

**Practical:** The laboratory work of the students has to be evaluated periodically.

The internal assessment (in the form of lab test, lab record, internal evaluation, assignment/ home assignment and attendance) of total 10 marks per each semester shall be conducted during the semester.

All kinds of exercises have to be conducted during a semester. Maximum 5 marks of attendance can be given to the students.

In each semester practical examination of 75 marks has to be conducted by two examiners (external and internal) having duration of 4 hours. The total number of the students to be examined per batch should not be more than sixty. Marks obtained in the practical examination have to be submitted to head of the concerned department/ the Principal of the college. The Head of the department/ the Principal of the college will make necessary arrangement for uploading the marks on to the University examination portal. The hard copy of the award list from portal has to be submitted to the Controller of Examination, Sri Dev Suman Uttarakhand University, Badshahithaul, New Tehri.

The breakup of marks for practical examination for each semester would be as follows:

Practical exam:	50 Marks (Exercises)
Lab Record and Collection:	15 Marks
Viva voce:	10 Marks
Sessional (Internal):	25 Marks
<b>Total:</b>	<b>100 Marks (each semester)</b>

# **PUBLIC HEALTH AND GENERAL HYGEINE**

## **IV Semester/ Optional**

(Total teaching hours – 120 Hrs. @ 04 Hrs. per Week)

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The course is designed to provide a complete guidance on health and hygiene systems, guidelines for implementing and role of government and public in maintaining a healthy life. At the end of the course the student shall be able to understand –

- the importance and significance of health and hygiene in life
- the importance of nutrition for a healthy life
- different health care programmes of India
- basic concept of health impact assessment as a means of assessing the policies, plans and projects using quantitative and qualitative techniques
- importance of community and personal health & hygiene measures
- Importance of food, social tenets, mental condition, physical activity on health
- Contagious and Non-contagious diseases: Impact and Control

### **Learning Objectives:**

- To provide knowledge on different health indicators and types of hygiene methods
- To impart knowledge on different health care programmes taken up by India
- To make student understand the latest concepts of health such as HIA, EIA, SIA and SEA
- To enable student with disaster mitigation strategies
- To create awareness on community health and hygiene
- To enrich knowledge on communicable and non-communicable diseases and their control
- To aware the student on the importance of food, social strategies, mental status and physical activities on health
- To introduce different community-based mobile apps on health to student and thereby to the community

**Learning / Course Outcomes:** On completion of this course, the students will be able to understand -

- What is a balanced diet?
- How to apply the current knowledge to optimize our diet?
- Can nutrition be used for a healthy life?
- Is there a one-size-fits-all “good” diet or should we individualize our dietary goals?
- Disaster management and responsiveness of public in pandemic and epidemic diseases
- Assess the impact of policies on health and hygiene Health measures to consider while travelling
- Awareness in public through digital media viz., mobile apps

## **SEMESTER I**

### **Basics of Nutrition**

**30 Hrs.**

- Nutrition – definition, importance, Good nutrition and mal nutrition; Balanced Diet: Basics of Meal Planning
- Carbohydrates –functions, dietary sources, effects of deficiency.
- Lipids –functions, dietary sources, effects of deficiency.
- Proteins –functions, dietary sources, effects of deficiency.
- Vitamins- functions, food sources, effects of deficiency,
- Macro and micro minerals –functions, effects of deficiency; food sources of Calcium, Potassium and Sodium; food sources of Iron, Iodine and Zinc
- Importance of water– functions, sources, requirement and effects of deficiency.
- Spectrum of malnutrition, Micronutrient malnutrition, Prevention and control of malnutrition, IEC on food and nutrition at different levels, Importance of investment in nutrition.

## Practical (First Semester)

- Biochemical tests for carbohydrates (glucose, fructose, sucrose, starch), lipids, proteins and ketones.
- Calculate Exchanges of different food groups (starch, fruits, vegetable, milk, etc.).
- Prepare diet plan for healthy and malnourished persons.
- Perform sensory evaluation of food.
- Determine the saponification of lipid from food sample
- Qualitative analysis of Proteins
- Qualitative analysis of Carbohydrates

## SEMESTER II

### Health

30 Hrs.

- Health - Determinants of health, Key Health Indicators, Environment health & Public health; Health-Education: Principles and Strategies
- Health Policy & Health Organizations: Health Indicators and National Health Policy of Govt. of India-2017; Functioning of various nutrition and health organizations in India viz., NIN (National Institution of Nutrition), FNB (Food and Nutrition Board), ICMR (Indian Council of Medical Research), IDA (Indian Dietetics Association), WHO-India, UNICEF-India
- National Health Mission: National Rural Health Mission (NRHM) Framework, National Urban Health Mission (NUHM) Framework
- Women & Child Health Care Schemes: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+); Janani Shishu Suraksha Karyakaram (JSSK); Rashtriya Bal Swasthya Karyakram(RBSK); India Newborn Action Plan (INAP); Adolescent Health- Rashtriya Kishor Swasthya Karyakram (RKSK)
- Disaster Management – Containment, Control and Prevention of Epidemics and Pandemics – Acts, Guidelines and Role of Government and Public
- Occupational Health: Risk factors for disease Diseases and occupational relevance  
Drugs, Tobacco and Alcohol: Chemical agents, Effects and Side effects.



## **Practical (Second Semester)**

- Study of laboratory instruments
- Determination of individual overall health level.
- Assess the nutritional status by weight and height of a person (BMI)
- Calculate Ideal Body Weight (IBW), Total energy expenditure, physical activity level (PAL), etc.
- Collection and interpretation of local data on diseases prevalence
- Case study on recent disease outbreak
- Demonstration of medically important entomological specimens
- Preparation and examination of peripheral blood smear for Malarial parasite
- Microscopic examination of Fungi

## **SEMESTER III**

### **Hygiene and Diseases**

**30 Hrs.**

- Hygiene – Definition; Personal, Community, Medical and Culinary hygiene; WASH (WATER, Sanitation and Hygiene) programme
- Rural Community Health: Village health sanitation & Nutritional committee (Roles & Responsibilities); About Accredited Social Health Activist (ASHA); Village Health Nutrition Day, Rogi Kalyan Samitis
- Community & Personal Hygiene: Environmental Sanitation and Sanitation in Public places
- Public Awareness through Digital Media - An Introduction to Mobile Apps of Government of India: NHP, Swasth Bharat, No More Tension, Pradhan Mantri Surakshit Mantritva Abhiyan (PM Suman Yojana), My Hospital (Mera aspataal), India fights Dengue, JSK Helpline, Ayushman Bhava, Arogya Setu, Covid 19AP
- Contagious (Covid, AIDS, Hepatitis, Influenza, Measles, Malaria, Rabies) and Non-contagious / Non-communicable diseases and disorders (Cancer, Obesity, hyperglycemia/ Diabetes, Angina, osteoarthritis, osteoporosis, Alzheimer's disease, etc.).
- Concepts of Vaccines, Antibiotics, Venom-Antivenom, First-Aid, etc.

### **Practical (Third Semester)**

- Explain bacterial morphologies with the help of diagrams.
- Observe the effects of organoleptic properties of white bread during storage.
- Determine Mould growth at varying degree of moisture, light and temperature for storage period of seven days.
- Identify allergens from the different allergenic ingredients used in industry.
- Make an exercise showing various pathogens (bacteria/ virus / protozoa) causing major communicable diseases.

## **SEMESTER IV**

### **Clinical Research & Health Legislation**

**30 Hrs.**

- Drug development and Clinical Trials Response
- Variables and Biomarkers, Risk identification and Informed consent
- Clinical Trial Phases I to V
- Planning and design of Clinical study
- Concept of Bioavailability and Bioequivalence
- PK/PD Modelling Clinical Research Operations Management
- Clinical study reports and its structure
- Guidelines for Reporting, Publication Bias, Suppression, Delays and Conflicts of Interest
- Clinical Data Management and Biostatistics: Study Population, Sample size, Baseline, Issues in data analysis Tools and Software used in Clinical studies
- Regulations in Clinical Research, Drug Accountability, Financial Disclosure Ethical issues, the Belmont Report, Conflict of Interest
- Politics of Research: Women, Religion, Race, Gender, Developing Countries Current regulatory requirements and overview for New Drug Application, Abbreviated NDA,
- Study of Sample case studies
- Public Health laws: need and scope. Historical development

- Municipal Acts / Birth and Death Registration Act
- Prevention of Food Adulteration Act / Indian Drugs and Cosmetics Act
- Role of community participation for effectively enforcing these laws and R.T.I. - 2005.
- Consumer Protection Act. / MTP, PNDT Acts, age at marriage.

### Practical (Fourth Semester)

- Microscopic examination of normal histological specimen
- Diagnosis of Diabetes by Sugar analysis
- Measurement of Body temperature, Heart-beats, Pulse rates and Blood pressure
- Measurement of respiratory function
- Physical, Chemical and Microscopic analysis of urine
- Drawing conclusion from clinical data using statistical tools
- Study of Bioequivalence profile from sample data
- Visits to laboratories/ Pathology Centres / OPD/ IPD of Institutes/ Dissertation work.

### REFERENCES

- **Bamji, M.S., K. Krishnaswamy & G.N.V. Brahmam (2009)** *Textbook of Human Nutrition(3rd edition)* Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
- **Swaminathan (1995)** *Food & Nutrition(Vol I, Second Edition)* The Bangalore Printing &Publishing Co Ltd., , Bangalore
- **Vijaya Khader (2000)** *Food, nutrition & health*, Kalyan Publishers, New Delhi
- **Srilakshmi, B., (2010)** *Food Science, (5th Edition)* New Age International Ltd., New Delhi
- India Institute of Hygiene and Public Health: <http://aiihph.gov.in/healthin-india-2016/> Page 5 of 10 –
- Dunn, C. L. & Pandaya D. D. (1925). *Indian Hygiene and Public Health*. Calcutta: Butter Worth Co. (India) Ltd. – Ministry of Ayush: <http://ayush.gov.in/> – Ministry of Health and Family Welfare: <https://mohfw.gov.in/> –
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- Park, W. H. (2019). *Public Health and Hygiene: In Contributions by Eminent Authorities*. Germany: Forgotten Books. –
  - Sharma, M. Branscum, P. & Atri, A. (2014). *Introduction to Community and Public Health*. USA: John Wiley & Sons. – Swachh Bharat Mission: <http://swachhbharatmission.gov.in/sbmcms/index.htm>

**WEBLINKS:** <https://nhm.gov.in/>

- National Rural Health Scheme:
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=969&lid=49>
- National Urban Health Scheme:
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=970&lid=137>
- Village health sanitation & Nutritional committee
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=149&lid=225>
- About Accredited Social Health Activist (ASHA)
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=150&lid=226>
- Village Health Nutrition Day
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=152&lid=228>
- Rogi Kalyan Samitis
  - <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=153&lid=229>
- Health Impact Assessment - <https://www.who.int/hia/about/faq/en/>
- (suggested information only)
- [http://www.euro.who.int/data/assets/pdf\\_file/0011/261929/Health-in-Impact-Assessments-final-version.pdf?ua=1](http://www.euro.who.int/data/assets/pdf_file/0011/261929/Health-in-Impact-Assessments-final-version.pdf?ua=1)
- WASH <https://www.unicef.org/wash/> and [https://www.unicef.org/wash/files/UNICEF Strategy for WASH 2016 2030.PDF](https://www.unicef.org/wash/files/UNICEF_Strategy_for_WASH_2016_2030.PDF)
- Healthy Living <https://www.nhp.gov.in/healthylivingViewall>