

**Regulations and Curriculum for  
Master of Public Health (MPH)  
(Semester Scheme)**

**For Batch Admitted from 2019-20**



(Deemed to be University under Section 3 of UGC Act, 1956)

(Placed under Category 'A' by MHRD, Govt. of India, Accredited with 'A' Grade by NAAC)

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## **VISION**

*To build a humane society through excellence in education and healthcare*

## **MISSION**

*To develop  
Nitte (Deemed to be University)  
as a centre of excellence imparting quality education,  
generating competent, skilled manpower to face the scientific and social  
challenges with a high degree of credibility, integrity,  
ethical standards & social concern*



## CONTENTS

### Notification

01-20

### Regulations

Preamble

Introduction

Definitions

Duration of the Program

Medium of Instruction and Examination

Maximum period for completion of the program

Eligibility for admission

Selection of eligible candidates

Withdrawal -Temporary and Permanent

Conduct and Discipline

Graduation Requirements

Convocation

Structure of the Program

Courses of Study and Training

Guide, Schedule, Preparation of Dissertation, Internship

Attendance

Examination and Assessment

Scheme of Examination, Continuous Internal Evaluation (CIE),  
Semester End Examination (SEE), Assessment Procedure,  
Criteria for Pass, Scheme of Evaluation of Dissertation

Academic Performance Evaluation

Grading System, Grade Point Averages, Conversion of Grades  
into Percentage, Award of Class, Carry over, Number of attempts,  
Re-totalling

Supplementary Examinations

Award of Merit Certificates

Programme Outcomes

**Curriculum**
**Semester I**

Principles and Practices of Public Health	22 – 23
Introduction to Health System and Policy in Developing Countries	24 – 25
Health Management: Principles and Practices	26 – 27
Basic Epidemiology	28– 30
Basic Biostatistics	31 – 32
Demography and Population Sciences	33-35

**Semester II**

Introduction to Health Economics	36 – 37
Health Promotion Approaches and Methods	38– 39
Introduction to Financial Management and Budgeting	40- 41
Social and Behaviour Change, Effective Communication in Health Care	42 – 44

**Semester III**

Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH +A)- Basics	45-49
Introduction to Health Programs and Evaluation	
Principles of Social Research Methods	50-51
Environment and Occupational Health	52-54
Law and Ethics in Public Health	55-56

**Semester IV**

<b>Elective Stream:</b> (Advanced Epidemiology or Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH +A)- Advanced Course)	57-62
--	-------

**Dissertation**

63



**No. F.9-13/2007-U.3 (A)**  
**Government of India**  
**Ministry of Human Resource Development**  
**(Department of Higher Education)**  
**U.3(A) Section**

Shastri Bhawan, New Delhi,  
Dated the 4<sup>th</sup> June, 2008

**NOTIFICATION**

1. Whereas the Central Government is empowered under Section 3 of the University Grants Commission (UGC) Act, 1956 to declare, on the advice of the UGC, an institution of higher learning as a deemed-to-be-university;
2. And whereas, a proposal was received in February, 2007 from Nitte Education Trust, Mangalore, Karnataka seeking grant of status of deemed-to-be-university in the name of Nitte University under Section 3 of the UGC Act, 1956;
3. And whereas, the University Grants Commission has examined the said proposal and vide its communication bearing No. F.26-10/2007(CPP-I/ DU) dated the 10th March, 2008 has recommended conferment of status of 'deemed-to-be-university' in the name and style of Nitte University, Mangalore, Karnataka, comprising A.B. Shetty Memorial Institute of Dental Sciences, Mangalore;
4. Now, therefore, in exercise of the powers conferred by section 3 of the UGC Act, 1956, the central Government, on the advice of the University Grants Commission (UGC), hereby declare that Nitte University, Mangalore, Karnataka, comprising A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore, shall be deemed to be a University for the Purposes of the aforesaid Act.

Sd/  
**(Sunil Kumar) Joint**  
**Secretary to the Government of India**

(True Extract of the Notification)







**UNIVERSITY GRANTS COMMISSION  
BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110002**

No. F.26-5/2008(CPP-1)

Dated: 24th March, 2009

**OFFICE MEMORANDUM**

1. Whereas the Government of India, Ministry of Human Resource Development, Department of Higher Education vide Notification No. F.9-13/2007-U.3(A) dated 4th June, 2008 declared Nitte University, Mangalore, Karnataka comprising A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore as Deemed to be University under Section 3 of UGC Act, 1956.
2. And whereas now, the University Grants Commission, on the recommendation of an Expert Committee constituted by the Chairman, UGC has agreed for bringing (i) K.S. Hegde Medical Academy, Deralakatte, Mangalore, (ii) Nitte Usha Institute of Nursing Sciences, Deralakatte, Mangalore, (iii) Nitte Gulabi Shetty Memorial Institute of Pharmaceutical Sciences, Deralakatte, Mangalore, (iv) Nitte Institute of Physiotherapy, Deralakatte, Mangalore under the ambit of Nitte University, Deralakatte, Mangalore.

Sd/

**(K.P. Singh)**

**Joint Secretary  
University Grants Commission**

(True Extract of the Notification)



Ref: NU/REG/AC-MPH/2018-19/854 B

Date: 25-06-2019

## **NOTIFICATION**

### **Sub: Curriculum revision of MPH program**

In exercise of the powers conferred under Rule No.R.9 of the MoA, the Academic Council in its 39<sup>th</sup> meeting held on 11-06-2019 under the agenda item no. AC/4-39/19 is pleased to approve the curriculum revision of MPH program for the batch of 2019-2020 onwards.

By Order,

**REGISTRAR**

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Mangaluru, Karnataka, India

## **Regulations and Curriculum for Master of Public Health [MPH] (Semester Scheme) For Batch Admitted from 2019-20**

### **Preamble**

Master of Public Health (MPH) program is instituted in K S Hegde Medical Academy in the year 2013-14. The regulations for MPH program have been modified and are formulated as under:

### **1. Introduction:**

- 1.1. These regulations shall be called the Nitte (Deemed to be University) Regulations for Master of Public Health (MPH) Program and govern the policies and procedures including selection, admission, imparting of instructions, conduct of examinations, evaluation and certification of candidate's performance and all amendments thereto, leading to the award of Master of Public Health (MPH) degree. The regulations shall come into effect from the academic year 2019-20 and is applicable to the batch admitted from 2019-20 and onwards.
- 1.2. This set of regulations shall be binding on all the candidates undergoing the said degree program.
- 1.3. These regulations may be modified from time to time as mandated by the statutes of the University.
- 1.4. This set of regulations may evolve and get refined or updated or amended or modified or changed through appropriate approvals from the Academic Council or the Board of Management from time to time and shall be binding on all parties concerned including the Candidates, Faculty, Staff, Departments and the Institution Authorities.
- 1.5. All disputes arising from this set of regulations shall be addressed to the Board of Management. The decision of the Board of Management is final and binding on all parties concerned. Further, any legal disputes arising out of this set of regulations shall be limited to jurisdiction of Courts of Mangaluru only.

## 2. Definitions:

Unless the context otherwise requires

- Academic year means two consecutive (one odd + one even) semesters
- BoM means Board of Management of Nitte (Deemed to be University)
- BoS means Board of Studies in Medical Sciences (Clinical)
- College/Institution means K S Hegde Medical Academy
- Course means a subject or a paper. A course may comprise lectures/ tutorials/ laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/ term papers/assignments/ presentations/ self-study etc. or a combination of some of these.
- Credit means a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to 35 teaching/practical/field visit hours (one month means at least 120 teaching/practical hours at 6 hours/day with 5.5 days in a week).
- Choice Based Credit System (CBCS): means a system wherein the requirement for awarding the degree is prescribed in terms of mandatory core modules and elective modules which is chosen by the candidate.
- Cumulative Grade Point Average (CGPA) means a measure of overall cumulative performance of a student over all the semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.
- Department means Department of Public Health
- Grade Point means a numerical weight allotted to each letter grade on a 10-point scale.
- He/him/his/himself includes all genders as the case maybe.
- Head of the Institution means the Dean / Principal of the College (K S Hegde Medical Academy)
- Head of the Department means a full-time faculty appointed/nominated by the Head of the Institution / University for managing the Department, authorized

and responsible for the implementation of the rules and procedures pertaining to the Department

- Letter Grade: It is an index of the performance of a candidate in a said course.
- Grades are denoted by letters O, S, A+, A, B, C, F and I
- Program means an educational program leading to award of a Degree (MPH)
- Regulations means this set of academic regulations
- Semester Grade Point Average (SGPA) means a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.
- Teaching Hospital means Justice K S Hegde Charitable Hospital or any other Hospital owned by or under the management of Nitte (Deemed to be University).
- University means Nitte (Deemed to be University)

### **3. Duration of the Program:**

The candidate shall undergo a period of study extending over 2 academic years (4 semesters), including two months of internship.

### **4. Medium of Instruction and Examination:**

The medium of instruction and examinations shall be in English.

### **5. Maximum period for completion of the Program:**

The maximum period for completion of Master of Public Health (MPH) program is four (4) academic years.

### **6. Eligibility for admission:**

Graduates in Medicine / AYUSH / Dentistry / Veterinary Sciences / Public Health / Allied Health Sciences / Life Sciences/ Statistics /Biostatistics / Demography / Population Studies / Nutrition / Sociology / Psychology / Anthropology / Social Work from a recognized Indian University with a minimum of 50% marks in the aggregate.

*Although highly recommended, candidates need not be restricted to the above disciplines and graduates from selected backgrounds other than these may be taken by the University when considering the overall aptitude and eligibility of the candidate.*



**Demonstrated work experience in a healthcare-related field is highly desirable.**

For SC/ST candidates the minimum percentage of marks shall be 45% of the aggregate marks in the qualifying examination.

Foreign Nationals and candidates who have qualified from a Foreign University/ Board should obtain permission from Nitte (Deemed to be University) prior to the admission for equivalence of the qualification.

**7. Selection of Eligible candidates:**

Selection to the MPH program shall be based on merit obtained in the qualifying examination.

**8. Withdrawal -Temporary and Permanent:**

**8.1. Temporary:**

8.1.1 A candidate who has been admitted to the program may be permitted to withdraw temporarily for a period of six months or more up to one year on the grounds of prolonged illness, grave calamity in the family etc, provided:

- a. He applies stating the reason of withdrawal with supporting documents and endorsement by parent/guardian.
- b The University is satisfied that the candidate is likely to complete his requirement of the degree within maximum time specified.
- c There are no outstanding dues or demands with the department, library, hostel, institution etc.

8.1.2 The tuition fee for the subsequent year may be collected in advance based on the severity of the case before giving approval for any such temporary withdrawal.

8.1.3 Scholarship holders are bound by the appropriate rules applicable.

8.1.4 The decision of the Institution/University regarding withdrawal of a candidate is final and binding.

**8.2. Permanent:**

- 8.2.1. A candidate who withdraws admission before closing date of admission for the academic session is eligible for the refund of the deposit only. The fees once paid will not be refunded on any account.
- 8.2.2. Once the admission for the year is closed and if a candidate wants to leave the Institution, he will be permitted to do so and take the Transfer Certificate from the Institution / University, if required, only after remitting the tuition fees for the remaining years.
- 8.2.3. Those candidates who have received any scholarship/stipend/other forms of assistance from the Institution shall repay all such amounts in addition to those mentioned in the clause above.
- 8.2.4. The decision of the Institution/University regarding withdrawal of a candidate is final and binding.

**9. Conduct and Discipline:**

- 9.1 Candidates shall conduct themselves within and outside the premises of the Institution in a manner befitting a student.
- 9.2 As per the order of Honourable Supreme Court of India, ragging in any form is considered as a criminal offence and is banned. Any form of ragging will be severely dealt with.
- 9.3 The following acts of omission and /or commission shall constitute gross violation of the code of conduct and are liable to invoke disciplinary measures.
  - 9.3.1 Ragging as defined and described by the Supreme Court/Government.
  - 9.3.2 Lack of courtesy and decorum, indecent behaviour anywhere within or outside the campus.
  - 9.3.3 Willful damage or stealthy removal of any property/belongings of the Institution/Hostel or of fellow students/citizens.
  - 9.3.4 Possession, consumption or distribution of alcoholic drinks or any kind of hallucinogenic drugs.
  - 9.3.5 Mutilation or unauthorized possession of library books.

- 9.3.6 Noisy or unseemly behaviour, disturbing studies of fellow students.
- 9.3.7 Plagiarism of any nature.
- 9.3.8 Hacking of computer systems (such as entering into other person's domain without prior permission, manipulation and/or damage to the computer hardware and software or any other cyber crime, etc.)
- 9.3.9 Any other act of gross indiscipline as decided by the Board of Management from time to time.
- 9.4 Commensurate with the gravity of offence, the punishment may be: reprimand, fine, expulsion from the hostel, and debarment from an examination, disallowing the use of certain facilities of the Institution, rustication for a specific period or even outright expulsion from the institution, or even handing over the case to appropriate law enforcement authorities or the judiciary as required by the circumstances.
- 9.5 For any offence committed in- (i) a hostel, (ii) a department (iii) a class room, and (iv) elsewhere, the Chief Warden, the Head of the Department/ Head of the Institution/ Authorities of the University respectively, shall have the authority to reprimand or impose fine.
- 9.6 All cases involving punishment other than reprimand shall be reported to the Vice-Chancellor.
- 9.7 Cases of adoption of unfair means and/or any malpractice in an examination shall be reported to the Controller of Examinations for taking the appropriate action.

## **10. Graduation Requirements:**

Candidate shall be declared eligible for the award of the degree if he has: Fulfilled the degree requirements.

- No dues to the University, Institution, Departments, Hostels, Library, etc.
- No disciplinary action pending against him.
- The award of the degree must be recommended by the Board of Management.

## **11. Convocation:**

Degrees will be awarded in person to all the eligible candidates who have graduated during the preceding academic year at the annual convocation. For eligible candidates who are unable to attend the convocation, degree will be sent by post. Candidates are required to apply for the convocation along-with prescribed fee within the specified date, after satisfactory completion of all degree requirements.

## 12. Structure of the Program

The Program is structured on Choice Based Credit System (CBCS) and continuous evaluation based on semester pattern. A candidate shall have earned a total of 54 credits to be eligible for the award of MPH degree of the University.

### 12.1 The program consists of the following:

<b>A. Core modules (44 credits)</b>	
28 credits	1. Principles and Practices of Public Health 2. Introduction to Health System and Policy in Developing countries 3. Health Management: Principles & Practices 4. Basic Epidemiology 5. Basic Biostatistics 6. Demography and Population Sciences 7. Introduction to Health Economics 8. Health Promotion Approaches and Methods 9. Introduction to Financial Management and Budgeting 10. Social and Behaviour Change, Effective Communication in Healthcare 11. Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH +A)- Basics 12. Introduction to Health Programmes and Evaluation 13. Principles of Social Research Methods 14. Environment and Occupational Health 15. Law and Ethics in Public Health
16 credits	16. Internship 17. Dissertation
<b>B. Elective streams (any one stream to be selected by the candidate by the end of 2nd Semester)</b>	
10 credits	1. Advanced Epidemiology or 2. Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH +A) - Advanced Course

**13. Courses of study, training and Scheme of Examinations**

No.	Course	Credits	Total teaching hours	Marks		
				CIE	SEE	Total
<b>SEMESTER I</b>						
1	Principles and Practices of Public Health	1.0	35	30	70	100
2	Introduction to Health System and Policy in Developing Countries	1.5	53	30	70	100
3	Health Management: Principles and Practices	1.5	53	30	70	100
4	Basic Epidemiology	1.5	53	30	70	100
5	Basic Biostatistics	1.5	53	30	70	100
6	Demography and Population Sciences	1.0	35	30	70	100
7	Practical/Viva-Voce I	4	140	30	70	100
<b>Total</b>		<b>12</b>	<b>422</b>	<b>210</b>	<b>490</b>	<b>700</b>
<b>SEMESTER II</b>						
1	Introduction to Health Economics	1.0	35	30	70	100
2	Health Promotion Approaches and Methods	1.0	35	30	70	100
3	Introduction to Financial Management and Budgeting	1.5	53	30	70	100
4	Social and Behaviour Change, Effective Communication in Health Care	1	35	30	70	100
5	Practical/Viva-Voce II	2	70	30	70	100
<b>Total</b>		<b>6.5</b>	<b>228</b>	<b>150</b>	<b>350</b>	<b>500</b>
<b>SEMESTER III</b>						
1	Reproductive, Maternal, New born, Child, and Adolescent Health (RMNCH +A)- Basics	1	35	30	70	100
2	Introduction to Health Programmes and Evaluation	1.5	53	30	70	100
3	Principles of Social Research Methods	1.5	53	30	70	100
4	Environment and Occupational Health	1	35	30	70	100

5	Law and Ethics in Public Health	1	35	30	70	100
	Elective (Part I) (RMNCH+A- Advanced course or Advanced Epidemiology)	2	70	-		-
6	Internship	6	210	30	70	100
7	Practical/Viva-Voce III	3.5	123	30	70	100
	<b>Total</b>	<b>17.5</b>	<b>614</b>	<b>210</b>	<b>490</b>	<b>700</b>
<b>SEMESTER IV</b>						
1.	Elective Streams (Part I) (RMNCH+A- Advanced course or Advanced Epidemiology)	3	105	30	70	100
2	Elective Streams (Part II) (RMNCH+A- Advanced course or Advanced Epidemiology)	5	175	30	70	100
	Dissertation (Including data collection)	10	350	100	200	300
	<b>Total</b>	<b>18</b>	<b>630</b>	<b>160</b>	<b>340</b>	<b>500</b>
	<b>Grand Total</b>	<b>54</b>	<b>1894</b>	<b>730</b>	<b>1670</b>	<b>2400</b>

### 13.1. Dissertation:

As a partial requirement of the program, a candidate is required to carry out a research study in a select topic of his study, under the supervision of a faculty Guide. The results of such a study shall be submitted to the University in the form a dissertation as per the prescribed format and within the date stipulated by the University. Only a candidate who has put in a minimum of 80% of attendance in the fourth semester shall be eligible to submit the dissertation.

The dissertation is aimed at training a postgraduate candidate in research methodology and techniques. It includes identification of the problem, formulation of a hypothesis, 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.

The preparation of dissertation will start from II Semester where the candidate needs to conceptualize the public health issues he wants to study. The schedule of activities will be notified by the Department.

**13.1.1. Guide:**

A Guide shall be a full time post graduate teacher in the department and recognized by the University as a Guide for supervision of dissertation work. However, a co-guide can be opted wherever required with prior permission of the College and University. The Co-Guide should be either a post graduate teacher or an expert in the specialized area in public health recognized by the University following recommendation of the Head of the Department. This co-guide can be a field level supervisor who will monitor the study progress at field level. In the event of registered Guide leaving the Institute or in the event of the death of the Guide, a change of Guide shall be permitted by the University, on the specific recommendation of the Institution.

**13.1.2. Schedule: Ethical clearance**

Ethical clearance should be obtained for any study on public health issues of relevance. The candidate should apply for the certificate to the Ethics Committee of K S Hegde Medical Academy, through the Guide.

The submission to IEC should include covering letter, synopsis, tools, consent form, approval by Guide/ HoD and consent of co-guide if any. All such clearances should be sought before at least one month of the commencement of the actual study/field work. A copy of the IEC approval certificate should be attached along with the synopsis and forwarded to the University for registration and approval of the research topic.

**Submission of the synopsis:**

The synopsis of the proposed study with the clearances from the Ethics Committee shall be submitted to the University through the Guide, HoD and Head of the Institution as per the prescribed format. The synopsis should be submitted one month before the end of the III Semester or the date specified by the Department. Once the synopsis is approved and registered by the University no change in the topic or Guide shall be made without the prior approval of the University.

**Final submission of the Dissertation:**

The dissertation complete in all respects and duly certified by the Guide/Co-Guide, HoD and Head of the Institution should be forwarded to the Controller of Examinations as per the date specified by the University.

**13.1.3. Preparation of Dissertation:**

The written text of dissertation shall be in the range of 14000-16000 words excluding tables, charts and diagrams. It should be neatly typed with double line spacing in Times New Roman font on one side of the A4 size bond paper (size: 8.27” x 11.69”) and properly bound. Spiral binding should be avoided.

The dissertation should be written under the following headings and in the order.

- a. Introduction [Background, Statement of Problem, Literature Review, Rationale of the Study, Scope of the Study, Conceptual Framework]
- b. Aims or Objectives
- c. Material and Methods [Study Design, Study Settings, Sample Size, Sample Selection Procedure, Data collection techniques and Tool, Operational definitions, Outcome variable, Limitations, Duration of study, Data storage and management, Expected outcome, Ethical Consideration]
- d. Results (including tables and figures/diagrams, graphs)
  - i. Sample Characteristics
  - ii. Analysis of variables
- e. Discussion
- f. Summary and Conclusions
- g. References
- h. Annexure

**13.2. Internship:**

A candidate has to mandatorily complete a two months’ internship in any recognized organization/agency engaged in public health activities. The internship will be done during the III Semester. This will carry six (6) credits. The aim of the internship is to enable the candidate to gain an in-depth insight into the working culture of various organizations before taking up job following completion of MPH program. Further, an internship completion certificate issued by the organization/agency will have to be produced by the candidate, failing which his degree shall be withheld.

**13.3. Elective Stream:**

A candidate has to mandatorily select any one of the elective streams at the end of Second Semester. The electives carry 10 credits and the student can choose “Advanced Epidemiology” or “Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH +A) – Advanced Course” The objective of the



elective stream is to enhance the knowledge and skills of the candidate in any one stream of their choice to enable them gain additional expertise and specialization in the particular stream. The elective stream is a comprehensive learning method that includes in-house lectures, group works, problem – based learning, presentations, home assignments, computer-based analysis, field assignments, practical hands-on training, attending workshops and symposium, registration for webinars, online educational courses, etc.

The minimum number of students enrolling to any of the two streams shall be at least 1/3rd of the total strength of the batch failing which the student will be allotted the elective stream by the Department.

#### **14. Attendance:**

- 14.1 A candidate shall study in the concerned department of the Institution for the entire period as a full time student. No candidate is permitted to work in any outside laboratory/college/hospital/ pharmacy etc. while studying.  
No candidate should join any other program of study or appear for any other degree examination conducted by this University or any other University in India or abroad during the period of registration.
- 14.2 Each semester shall be taken as a unit for the purpose of calculating attendance.
- 14.3 A candidate who has put in a minimum of 80% of attendance in the theory and practical separately and who has fulfilled other requirements of the program shall be permitted to appear for University examinations.

#### **15. Examination and Assessment:**

There shall be a University examination at the end of each semester.

##### **15.1 Scheme of Examination:**

Evaluation is based on formative evaluation (Continuous Internal Evaluation) and summative evaluation (Semester End Examination- Theory & Practical/Viva-voce).

##### **15.1.1 Continuous Internal Evaluation(CIE)**

30% of the marks (30 out of 100 marks) is allotted for internal assessment in each course. Two sessional examinations each carrying 20 marks will be conducted and the average of the two will be considered for internal assessment out of 20 marks. The second component of CIE is internal assessments consisting of 10 marks in

the form of seminars, journal clubs, assignments and viva-voce. This is applicable for theory and practical examinations.

A Candidate must secure at least 50% of total marks fixed for internal assessment in particular course in order to be eligible to appear for the Semester End Examination of that course.

### **15.1.2 Semester End Examination:**

A candidate who satisfies the requirements of attendance, progress and conduct shall be eligible to appear for the university examinations. There shall be a University Examination at the end of each semester.

To be eligible to appear for University examination a candidate should fulfil all the following conditions:

- a Undergone satisfactorily the approved program of study in the course/courses for the prescribed duration;
- b 80% attendance separately in theory and in practical, in each course
- c Shall have the minimum attendance requirement in all courses of that semester for the first appearance;
- d Secure at least 50% of total marks fixed for internal assessment in a particular course; and
- e Fulfill any other requirement that may be prescribed by the University from time to time.

### **15.2 Assessment Procedure:**

The academic performance is assessed on the basis of both Continuous Internal Evaluation (CIE) assessment and Semester End Examination (SEE) in each semester. CIE: SEE weightage will be in the ratio of 30:70.

It is mandatory for a candidate to appear for the semester-end examination / supplementary examination in each of the prescribed courses for taking up of dissertation.

In case of dissertation the final evaluation will be based on the content of the report, presentation by the candidate and a viva-voce examination. If the dissertation is not satisfactory the student/s will be given grade F (Fails) and shall continue the dissertation and appear for assessment in the next semester.

### 15.3 Criteria for Pass:

A candidate is declared to have passed in a course if he secures 50% of the marks separately in the Semester End Examination (SEE) and Continuous Internal Evaluation (CIE) fixed for the course. A candidate who fails in any course shall have to appear only in that course in the subsequent examination.

### 15.4 Scheme of Evaluation

#### 15.4.1: Practical & Viva-voce

A comprehensive practical & Viva-voce will be conducted by an internal and external examiner appointed by the University. This shall aim at assessing the depth of knowledge, practical skills, logical reasoning and oral communication skills pertaining to all the courses during the semester. The practical and Viva-voce marks shall be allotted as illustrated below:

Sl No	Exercise	Marks
1	Spotters	15
2	Problem Solving	15
3	Pedagogy	20
4	Viva-Voce	20
<b>Total</b>		<b>70</b>

#### 15.4.2: Evaluation of Internship

The student shall mandatorily complete 2 months of internship as described in the calendar of events to complete the course. The student shall submit the internship completion certificate issued by the concerned Organization along with a detailed report of the internship. This will be evaluated at the end of III Semester with 30% Internal Assessment based on the internship report and 70% Summative evaluation by internal and external examiner. If the internship is not satisfactory, the student/s will be given letter grade F (Fails) and in case the student does not complete or attend the internship will be given letter grade I (Absent), he shall repeat/do the internship and appear for assessment after the fourth semester.

#### 15.4.3: Evaluation of Dissertation

At the end of the fourth semester, candidates will submit their dissertation on previously chosen and approved topic for assessment.

This will be a 10 credit course.

The dissertation will be evaluated through a comprehensive internal assessment and University examination for a total of 300 marks with following cut off.

<b>Internal Assessment</b>	<b>100 Marks</b>
a. Development of research question, literature review & Methods	40 Marks
b. Quality of Data collection	30 Marks
c. Report Development	30 Marks
<b>University Evaluation</b>	<b>200 Marks</b>
a. Evaluation of Final Report by internal and external examiners (Development of objectives, research question, literature review and methods- 30 marks; Results and Discussion- 30 marks; Dissertation defense: 40 marks)	100 Marks
b Viva voce by Internal and External examiners	100 Marks
<b>Total</b>	<b>300 Marks</b>

- a) Internal Assessment:** Internal assessment starts from students' conceptualization of the study, literature review, and development of study design, data collection, and feedback from field guide, analysis and final report. Internal evaluator will be a post graduate teacher other than assigned guide.
- b) University Evaluation:**
- i. Evaluation of the Dissertation: The dissertation will be evaluated by an internal (50% weightage) and external examiner (50% weightage) as appointed by the University.
  - ii. Viva- Voce Examination: The Viva- Voce examination shall aim at assessing the depth of knowledge, logical reasoning, confidence and oral communication skills. The Viva-Voce examination shall be held after the submission of dissertation. If a candidate fails to submit the dissertation on or before the date prescribed, his Viva-Voce shall be conducted during the subsequent semester examination.

## 16. Academic Performance Evaluation

### 16.1 Grading System:

The performance of a candidate shall be evaluated according to a Letter Grading System, based on the both CIE and SEE. The letter grades (O, S, A+, A, B, C, F and I) indicate the level of academic achievement assessed on a 10 point scale (0 to 10).

<b>Marks Range(%)</b>	<b>Grade Point</b>	<b>Letter Grade</b>	<b>Descriptor</b>	<b>Classification</b>	<b>CGPA</b>
90 & above	10	O	Outstanding	First Class with Distinction	7.50 and above
80 -89	9	S	Excellent		
75-79	8	A+	Very Good		
65-74	7	A	Good	First Class	6.50-7.49
60-64	6	B	Average	Second Class	6.00-6.49
50-59	5	C	Pass		5.00-5.99
Below 50	0	F	Fail	Fail	Less than 5.0
Absent	0	I	Absent		

16.1.1 A candidate shall be considered to have completed a course successfully and earned the credits assigned, if he secures an acceptable letter grade in the range O-C. Letter grade 'F' in any course implies failure in that course and no credit is earned.

16.1.2 Candidate having satisfactory attendance at classes and meeting the passing standard at CIE in a course, but remained absent from SEE shall be awarded 'I' grade in that course.

### 16.2 A Grade Point Averages:

The overall performance of a candidate will be indicated by Grade Point Average (GPA). For each course grade points will be awarded as per a letter grading system.

Semester Grade Point Average (SGPA) is computed as follows:

$\sum [(course\ credit) \times (Grade\ point)]$  for all courses with Letter grades, including F

SGPA = -----

$\sum [(course\ credits)]$  for all courses with Letter grades, including F

Cumulative Grade Point Average (CGPA) is computed as follows:

$\sum [(course\ credit) \times (Grade\ point)]$  for all courses for all semesters with, Letter grades excluding F

CGPA =-----

$\sum [(course\ credits)]$  for all courses for all semesters with Letter grades, excluding F

### 16.3 Conversion of Grades into Percentage

Formula for conversion of GPA into percentage: CGPA earned X10  
 = Percentage of marks scored

Illustration: (CGPA Earned 8.18 X 10) = 81.80 %

### 16.4 Award of Class:

The candidate, who has passed all the courses prescribed, shall be declared to have passed the program. Class will be awarded only to those who pass the entire examination in the first attempt.

- A candidate who secures GPA  $\geq 7.50$  and above in first attempt shall be declared to have passed in ‘First Class with Distinction’.
- A candidate who secures GPA  $\geq 6.50$  but less than 7.50 in the first attempt shall be declared to have passed in ‘First Class’.
- A candidate who secures GPA  $\geq 5.00$  but less than 6.50 in the first

attempt shall be declared to have passed in ‘Second Class’.

Candidates who pass the examinations in more than one attempt shall be declared as passed in ‘Pass’ class irrespective of the percentage of marks secured.

- An attempt means the appearance of a candidate for one or more courses either in part or full in a particular examination.
- A candidate who fails in the main examination and passes one or more subject or all subjects in the supplementary examination is not eligible for award of class or distinction. Passing in supplementary examination by such candidates shall be considered as attempt.
- If a candidate submits application for appearing for the examination but does not appear for any of the courses either in full or part in the university examination, he can appear for supplementary examination provided other conditions such as attendance requirement, internal assessment marks, etc are fulfilled and his appearing in the supplementary examination shall be considered as the first attempt.
- Candidate who pass the subjects in the supplementary examinations are not eligible for the award of gold medal or merit certificate

### **16.5 Carry over Benefit:**

A candidate shall appear for all the subjects of that particular semester in the University examinations but failed in that semester can avail this benefit provided:

- (a) A candidate who fails in I semester is allowed to move to II semester. The candidates with back log subjects shall take both I semester backlog papers as well as II semester papers. Candidate with a backlog of not more than 2 papers in I & II semester put together is allowed to go to the III semester.
- (b) Candidates who have failed in not more than 2 subjects of II semester and III semester (put together except internship) and not having backlog of I semester papers are only permitted to go to IV semester.
- (c) The candidate is permitted to appear for the IV semester examination along with the backlog subjects of II and III semesters and should

pass all the subjects, including the backlog subjects to be declared as having completed the course.

**16.6 Number of attempts:**

A candidate is permitted not more than three attempts (actual appearance) to pass each course. A candidate will not be allowed to continue the program if he/she fails to comply with the above stipulation.

**16.7 Re-totalling:**

Re-totalling of marks is permitted only for theory papers. The University, on application within the stipulated time and remittance of a prescribed fee, shall permit a recounting of marks for the course/s applied. The marks obtained after re-totalling shall be the final marks awarded.

**17. Supplementary Examinations:**

Supplementary examination shall be conducted by the University for the benefit of unsuccessful candidates. Lower Semester Examination shall be conducted by the University along with current Semester Examination for the benefit of unsuccessful candidates

- A Candidate detained for lack of attendance, internal assessment marks will be barred from appearing in any one or all course/s for the supplementary examination.
- If a candidate submits application for appearing for the examination but does not appear for any of the subjects in the University examination, he can appear for supplementary examination provided other conditions such as attendance requirement, internal assessment marks, etc are fulfilled.
- A candidate who is promoted to the next higher class as per carry-over regulations (except where apex bodies do not permit), if he clears the lower year/semester/phase examinations in the main examination is allowed to appear for the higher class examination during supplementary examinations provided other conditions such as attendance requirement, internal assessment marks, etc are



fulfilled.

- A candidate permitted to appear for the supplementary examination can improve his internal assessment marks before he takes the supplementary examination by subjecting himself to internal assessment procedure as practiced in the College.

**18. Award of Merit Certificates:**

Merit Certificates will be awarded on the basis of overall CGPA of I to IV semester examinations. Further, only those candidates who have completed the program and fulfilled all the requirements in the minimum number of years prescribed (i.e. two years) and who have passed each semester in the first attempt are only eligible for the award of merit certificates.

**Programme Outcomes:****At the end of the program, graduates will be able to...**

1. Construct public health initiatives as part of a larger inter-related system of organizations that influence the health of populations at local, national and global levels.
2. Apply concepts and theories of behaviour, health systems, communication, and ecological frameworks to design, plan, implement, evaluate, and disseminate health education and health promotion interventions in accordance with community needs, organizational and community goals.
3. Identify public health problems and resolve them by designing and instituting corrective steps and further evaluate their outcome measures.
4. Appraise the current public health challenges and apply evidence-based research strategies to strengthen the health system.
5. Evaluate social, environmental and cultural factors that cause health disparities and accordingly construct appropriate interventions to provide equitable access and financial risk protection to the population.
6. Pursue a selfless and value-driven career in public health by internalizing the values and principles of public health practice with an aim to promote health, prevent diseases and improve the quality of life of the community they serve.
7. Access and utilize components of the health care delivery system in a manner that is appropriate, cost effective, fair and in compliance with the national health programme and policy priorities.
8. Execute the roles and responsibilities of various health agencies with an intent to manage the legal, ethical, economic, and regulatory dimensions of health care and public health policies.

## **SEMESTER- I**

### **Principles and Practices of Public Health**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Implement the functions and essential services of public health.
- CO2:** Discuss the development and evolution of public health.
- CO3:** Identify factors that influence health and measure the health status of populations.
- CO4:** Identify public health's core functions and discuss how these are translated into practice.
- CO5:** Describe and articulate the public health programs to protect and improve the health of populations

#### **Contents**

##### **Unit 1: Introduction to Public Health:**

Concept of Public Health, Social Medicine and Community Medicine, History & Evolution of Public Health, Public Health as a system, features of public health, importance of public health, Public health and medical care system, Role of public health in global society

##### **Unit 2: Concept of Health, Disease and its Measurement**

- 2.1 Concept of Health & Illness, Dimensions of health and disease, Determinants of health and disease, Economic and Social dimension of Health, Ecology of health, Health status, Positive wellbeing, health equity
- 2.2 Measuring health and disease  
Indicators of Health and Disease, Comparisons of health indicators of selected developed and developing countries

##### **Unit 3: Public Health System**

- 3.1. Structure of Public Health System
- 3.2. Resources of public health, Infrastructure of public health, Human resources in public health, Organization resources, Information Resources, Fiscal Resources.
- 3.3. Indian public health system, Public health- hospital system, Primary health care

system, IPHS Standards, Public health & multiple sectors

**Unit 4: Health, Development and Global Health**

Health and development, Impact of health disparities on public health, Globalization, Evolution of International health, International health agencies, Global Health agenda for 21st century

**Unit 5: Health Equity and Public Health Action**

- 5.1 Equity driven approaches- access to health care, availability of services, utilization of services, relevance and effectiveness
- 5.2 Public health action- Objectives and applications of public health action, Challenges in public health, improving health status, reducing disease burden

**Practicum:**

- Field visit to NGOs working with health system
- Field visit to Public health centres– CHC, PHC and SC
- Visit to public health training centres and District Health Office
- Field Visit to WHO/UN project offices

**Suggested readings:**

- 1) Public health: What it is and how it works, - Burnord J, Turnock, Jones and Bartlet Publishers
- 2) Oxford Textbook of Public Health 5th edition, 2009, Author(s): Detels, Roger; Beaglehole, Robert; Lansang, Mary Ann; Gulliford, Martin Oxford University
- 3) Oxford Handbook of Public Health Practice (Oxford Handbooks Series) by David Pencheon, David Melzer, Muir Gray and Charles Guest (2006)
- 4) Park's Textbook of Preventive and social Medicine, - K.Park, Banarsidas Bhanot (publishers)

**SEMESTER- I****Introduction to Health System and Policy in Developing Countries****COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Understand the evolution of public health system in Indian context
- CO2:** Apply the theoretical concepts of policy analysis
- CO3:** Compare global and national health policies
- CO4:** Analyse the factors influencing the policy change
- CO5:** Familiarize with the organizational structure of health systems of various agencies

**Unit 1: Introduction to Health systems**

- 1.1 Public health system and its evolution, Challenges in public health system, Public health care system – India; Primary health institutions (Primary health center, sub centers, district hospitals); Secondary health institutions; Tertiary health institutions; State and central government hospitals; Employee State Insurance; AYUSH
- 1.2 Private health care system: Private hospitals, polyclinics; Nursing homes, dispensaries; Private practitioners; Multispecialty hospital and medical college hospitals, Voluntary health agencies

**Unit 2: Central and State Health Agencies and Organizational Structure**

Planning at Central, State, District, Block and Village; Union Ministry of Health and Family Welfare; Directorate General of Health Services; Central Council of Health; State Ministry of Health, State Health Directorate; District Health Organization etc

**Unit 3: Introduction to Health Policy**

Health policy; Normative and value base of health policy; Population policy, drug policy, medical education policy, policy for children, women and weaker section

**Unit 4: Global and National Health Policies**

- 4.1 National health policy; State health policy; Comparison of various international health policies, (USA, UK, Canada, China, France, Thailand); Health policy in the context of market economy.
- 4.2 Health for All 2000, understanding global health policies including current trends, factors influencing policy change, changing global health policy environment, Millennium Development Goals, Sustainable Developmental Goals.

**Unit 5: Policy Implementation and Analysis**

- 5.1. Implementation of health policy - Federal and state governments; Formulation of health policy; Health policy planning process, need assessment, prioritization, people's participation, decentralization; policy cycle, policy subsystems, types of policy transfer.
- 5.2. Policy analysis; Evidence based policy; Policy communication (Writing), theoretical approaches and concepts used in policy analysis, analyse the political system within which policies are made

**Practicum**

- Visit to Health Systems Resource Centre
- Visit to NGOs working in health systems reforms
- Visit to ESI and CGHS dispensaries

**Suggested readings:**

- 1) Health Policy Research in South Asia: Building Capacity for Reform (Health, Nutrition, and Population Series) Abdo S. Yazbeck, David H. Peters

## **SEMESTER- I**

### **Health Management: Principles and Practices**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Apply the principles of planning and management in implementing health projects and programmes.
- CO2:** Develop leadership skills in public health management
- CO3:** Develop, implement, and manage various public health programs
- CO4:** Develop and adapt public health information system as a need to support public health policies, programs and interventions
- CO5:** Apply the concept of planning and management tools

#### **Unit 1: Introduction to Health Management**

Planning- structure, function, process; Management- Definition, principles, applications, health promotional planning, basic knowledge of health care systems

#### **Unit 2: Project Management**

- 2.1 Planning cycle, project management cycle; Management analysis; Political aspect, economic aspects; Epidemiological base for health planning; Planning tools- log frame, PERT, CPM; Health Planning Models; Discrete Choice analysis
- 2.2 Health program planning; Planning health facilities; Community involvement; Organization structure and process; Monitoring and Evaluation; Quality Assurance in project management; Health planning in India, NITI Aayog.
- 2.3 Components of strategic management, Logistics management, human resource management; Quality: Definition, measures to manage and improve quality, behavioural aspects of governmental, faith-based and other NGOs

#### **Unit 3: Risk Management**

- 3.1 Concepts and types of risk, Introduction to risk management, risk management plan, risk management process
- 3.2 Risk breakdown structure, risk identification, qualitative and quantitative risk

analysis, Risk register

**Unit 4: Public Health Informatics:**

- 4.1 Introduction to public health informatics, definition, principles; privacy, confidentiality and security of public health information; data standards, risk factors in information systems
- 4.2 Principles, structure of health information system, HMIS, tools and techniques of measurements, application of HMIS
- 4.3 MCTS, GIS, Decision support and expert systems in public health

**Unit 5: Public Health Leadership:**

- 5.1 Definition, principles, leadership style and practices
- 5.2 Levels of leadership, leadership and assessment, leadership and assurance
- 5.3 Leadership and people development- organizational staff relationship, community relationship, conflict resolution and negotiation

**Practicum:**

- Network analysis
- Grant writing using management techniques
- Visit to hospitals/health centres to study Quality Assurance, MCTS and HMIS
- Geo-mapping exercises

**Suggested readings:**

- 1) Public Health Policy and Administration by Brij Mohan Mathur Publisher: Commonwealth Publishers (1998)
- 2) Public Health Leadership: Putting Principles into Practice (Aspen Series In Public Health) by Rowitz Louis
- 3) Public Health Leadership and Management: Cases and Context by Stuart A Capper, Peter M. Ginter, Linda E. Swayne
- 4) Essentials of Management and Leadership in Public Health by Robert E. Burke, Leonard H. Friedman
- 5) Transforming Public Health Practice: Leadership and Management Essentials by Bernard J. Healey, Cheryll D. Lesneski



## **SEMESTER- I**

### **Basic Epidemiology**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Understand the basic epidemiological methods and study designs.
- CO2:** Learn the basic concepts of screening and outbreak investigations.
- CO3:** Apply the concepts of disease surveillance
- CO4:** Apply the basic epidemiological concepts related to communicable and non-communicable diseases
- CO5:** Demonstrate agent, host, environmental, and risk factors of various infectious and chronic diseases

#### **Contents**

##### **Unit 1: Introduction to Epidemiology**

- 1.1 Definition and objective of epidemiology, History and Evolution of epidemiology, Epidemiologic approaches [Observational and Experimental], Achievements in epidemiology.
- 1.2 Causation of disease and its transmission dynamics, Epidemiological Triad; mode of transmission; Natural history of disease –clinical and subclinical cases, carrier status; concept of endemic, epidemic, pandemic, sporadic; disease outbreak & its determinants; herd immunity, attack rate, incubation period, Prevention of diseases

##### **Unit 2: Measurements in Epidemiology**

- 2.1 Definition of Health and Disease (Definition & Diagnostic criteria), Measuring disease frequency, Sources of information to measure health and disease
- 2.2 Measures of Mortality, comparing mortality in different populations, limitation of different sources of mortality data, Life expectancy, Age-standardized rates
- 2.3 Measures of Morbidity & Disability, measuring of health determinants;

indicators and risk factors; other summary measures of population health;  
Comparing disease occurrence: Absolute comparisons, Relative comparisons

**Unit 3: Epidemiological Causation and Disease Surveillance**

- 3.1 Hills criteria of causation, sufficient cause model
- 3.2 Epidemiological study designs (Observational and Experimental study designs),
- 3.3 Estimating risk (Relative risk, Attributable risk & Odds ratio etc), Deriving inference from epidemiological studies, Bias, Confounders & Interaction
- 3.4 Surveillance and its types, Screening of diseases, Reliability and Validity, Investigation of an outbreak

**Unit 4: Epidemiology of Infectious Diseases**

- 4.1 Respiratory infections (Chicken pox, measles, rubella, mumps, influenza, diphtheria, whooping cough, meningococcal meningitis, acute respiratory infections, Tuberculosis).
- 4.2 Intestinal infections (Poliomyelitis, viral hepatitis, acute diarrheal diseases, Cholera, typhoid fever, food poisoning, ascariasis, hookworm infection)
- 4.3 Arthropod-borne infections (Dengue, malaria, lymphatic filariasis, chickungunya, yellow fever, zika); Zoonoses (Rabies, Kyasanur Forest Disease, leptospirosis, plague, brucellosis).

**Unit 5: Epidemiology of Chronic and Non-Communicable Diseases**

- 5.1. Cardiovascular diseases: Stroke, Coronary heart diseases, Hypertension, Rheumatic heart diseases
- 5.2. Cancer, Diabetes, Obesity
- 5.3. Blindness, Accidents and Injuries, Mental health disorders

**Practicum:**

- Field Visit to IDSP District/State Unit
- Outbreak Investigation
- Survey of Non Communicable Diseases

**Suggested readings:**

- 1) Leon Gordis (4th Edition), Epidemiology, Saunders (Elsevier Inc) Publication
- 2) K.Parks's Textbook of Preventive and social medicine M/S Banarasidas Bhanot publishers
- 3) Oleckno, William, Essential Epidemiology: Principles and Applications, Waveland Press, Inc., 2002
- 4) Ann Aschengrau, Essentials of Epidemiology in Public Health, Jones & Bartlett Publishers
- 5) Rothman's Text book of Modern Epidemiology (3rd Edition)
- 6) Park K: Park's textbook of preventive and social medicine, M/s Banarasidas Bhanot, Jabalpur.
- 7) Preventive and community medicine by Mathur.
- 8) Davidson's Medicine text book.

## **SEMESTER- I**

### **Basic Biostatistics**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

**CO1:** Describe the role of biostatistics in public health.

**CO2:** Apply basic statistical concepts commonly used in public health

**CO3:** Demonstrate statistical reasoning skills accurately and contextually

**CO4:** Apply statistical knowledge to design and conduct research studies

**CO5:** Operate statistical software packages to conduct research studies

#### **Contents**

##### **Unit 1: Introduction**

Meaning of Statistics, Statistical methodology, Branches of Statistics- Biostatistics, Vital Statistics, Health Statistics, Application of Statistical Methodologies in Public Health Management

##### **Unit 2: Basic Concepts in Biostatistics: Data presentation & Measurement**

###### 2.1 Data

Definition and Types of data, Different scales of data measurement, types of variables, Different methods of data collection, Merits and demerits of data collection methods under different situations.

###### 2.2 Presentation of Data:

Tabulation of data, Graphical presentation of data (Need and uses, Types of diagrams, bars, pie chart, line diagram, histogram, frequency polygon, frequency curve, Ogives)

###### 2.3 Measures of Location and Variability

Measures of Central tendency-mean, median, mode- ungrouped and grouped data; Measures of dispersion- calculation and interpretation of Range, Percentiles, Quartiles, Mean deviation, Standard deviation and Co-efficient of variation- ungrouped and grouped data.

**Unit 3: Probability and Standard Distributions**

- 3.1 Concept of probability, Probability distributions and their applications, Baye's theorem, central limit theorem
- 3.2 Normal distribution, Binomial distribution, Poisson distribution
- 3.3 Standard error of mean, difference of means, proportion and difference to two proportions.

**Unit 4: Sample Survey Techniques**

- 4.1 Types of surveys, their role in Public health management, Planning of surveys
- 4.2 **Concept of sampling**, Use of random number tables for selection of samples, Different Sampling designs, Calculation of sample size for field surveys, population distribution

**Unit 5: Tests of Significance**

- 5.1 Choice of appropriate statistical tests, Type I and Type II Errors, power calculation, Concept of Sampling variation, Parametric and non-parametric tests (Z-test, t-tests, ANOVA, Chi square test, Wilcoxon sign rank test, Mann Whitney U Test, Kruskal Wallis tests) Correlation as prediction techniques (Spearman and Pearson tests), P value, confidence levels and intervals; Regression analysis, introduction to statistical software (SPSS)
- 5.2 Introduction to Multivariate Analysis, Logistic Regression, Odds ratio and their applications in Public Health and Survival analysis, Introduction to Planning of Research studies

**Practicum: Introduction to Statistical Software**

- Data entry into software (Excel, Epi-Data, SPSS)
- Data Analysis using software

**Suggested readings:**

- 1) Rao NSN: Applied statistics in health sciences, JP publishers
- 2) Mahajan B.K: Methods of biostatistics, Kothari book depot, A.D Marg, Bombay
- 3) Potti L. R: A text book of statistics, Yamuna publications, Sreekanteshwaram, Trivandrum.
- 4) Lancaster H.O: Introduction to medical statistics, Johnwiley & sons, New York.
- 5) Leius A.E : Biostatistics, Reinhold publishing Co, New York.
- 6) Cotton T: Statistics in medicine, Little Brown & Co, Boston.
- 7) Hill A.B: Principles of medical statistics, Oxford University press, New York

## **SEMESTER- I**

### **Demography and Population Sciences**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

**CO1:** Understand the basics of demography and population sciences

**CO2:** Understand the core social and demographic variables, and how these variables influence population growth, composition, and structure

**CO3:** Use demographic tools in understanding public health issues

**CO4:** Discuss global demographic regimes and impact on public health.

**CO5:** Identify appropriate sources of data, perform basic demographic analyses using various techniques and ensure their comparability across populations.

#### **Contents**

##### **Unit 1: Introduction to Demography**

Definition, nature, Scope and importance of demography; Demography and population Studies; Development of Demographic Research in India and its relevance for Public Health interventions, Demography & Social Science inter relations, Technical & substantive demography

##### **Unit 2: Sources of Population Data**

Indian Census: Historical view, salient features of Indian censuses; Vital Statistics: Registration of births, deaths Marriages- Act 1966; National Sample Survey (NSS); National Family Health Surveys (NFHS-I, II III & IV); U.N Demographic year book. (Annual)

##### **Unit 3: Basic Concepts in Population Studies**

- 3.1 Rates & Ratios, Mid-Year Population, standardization methods, measures of fertility, and morbidity- determinants and differentials across states and some selected countries, Life table concepts
- 3.2 Population Theories: Malthusian Theory, Optimum population Theory, Demographic Transition theory, demographic dividend or disaster.

- 3.3 Concepts of Fertility- Fecundity & fertility measures, Sterility- Primary, Secondary, abortion, natural fertility- biological limits and social determinants, Physiological factors, role of Social and cultural factors of fertility, still births, levels trends and differentials in fertility

#### **Unit 4: Population Growth, Distribution & Mortality**

- 4.1 World Population Growth- Regional distribution & impact (Critical review); Population Growth & distribution in India & states
- 4.2 Population Structure & Characteristics: Age, Sex distribution- India & Selected countries; Marital Status: age at marriage & Public Health Concerns; Sex ratio in India – Declining trends observed in states causes & consequences; Caste & Religious distribution of Population, Expectation of life at birth, urbanization.
- 4.3 Mortality (maternal, child and Infant mortality), determinants of trends, Age & Sex differentials in mortality – trends causes of death, causes of mortality decline- developed & developing countries focusing on Indian experience, AIDS- future prospects.

#### **Unit 5: Population Policy**

- 5.1 Family Planning Programme - Global View, Critical Review, achievements, management; Methods of Birth Control-male, female methods, Mechanical, Chemical, Natural and other methods, Medical Termination of Pregnancy Act
- 5.2 Post-legalisation Scenario in India; Population Policy-India, China-One Child Policy, 2 child policy-consequences, role of immigration in contemporary world.

#### **Practicum**

- Practical exercise such as family folders,
- Demographic trend analysis.

**Suggested readings:**

- 1) Bouge Donald: Principles of Demography, Johnwiley & Sons, New York
- 2) Srivastava S.C: Studies in Demography, Jai Prakashnath & Co, Subash Bazar, Meerut, India
- 3) Asha A Bhende & Thara Kanitkar: Principles of population studies, Himalaya Publishing Hse.
- 4) Neelakantan N: A modern treatise in preventive medicine & Community health, Neela publishers, Venu Vilas, Poojapura, Thiruvananthapuram
- 5) Park K: Text book of preventive and social medicine, M/s Banarasidas, Jabalpur
- 6) Barclay G.W.: Techniques of population analysis, Wiley, New York
- 7) Cox P.R: Demography, England



## **SEMESTER- II**

### **Introduction to Health Economics**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

CO1: Understand key concepts of health economics

CO2: Describe major types of economic evaluations and to understand their use in decision making process

CO3: Apply the key concepts of economics within the context of health system

#### **Health Economics:**

##### **Unit 1: Introduction to Health Economics**

Definitions and Key concepts of economics, micro and macro-economics, Strategizing and prioritizing within scarce resources (decision making), measures of national income (GNP, GDP)

##### **Unit 2: Equity and Efficiency in Public Health**

- 2.1 Basic concepts of efficiency, effectiveness, equity
- 2.2 Elasticity of demand, costing, production, marginal cost analysis, and opportunity cost, universal health coverage and role of health care financing

##### **Unit 3: Supply and Demand Analysis**

- 3.1 Definition of demand and supply, demand and supply curve, determinants of demand, supply and costs of production, elasticity of demand
- 3.2 Measuring demand elasticity, income elasticity, cross price elasticity

##### **Unit 4: Market Equilibrium**

Definition of equilibrium, price mechanism, Market model, market failure, roles and limitations of markets in health care

##### **Unit 5: Economic Evaluation**

Principles and application of economic evaluation in health care, Cost Benefit Analysis (CBA) and Cost Effective Analysis (CEA), cost minimization analysis.

**Practicum:**

- Participate in and conduct critical appraisals of economic evaluations
- Analyze utilization data

**Suggested readings:**

- 1) Health Economics in India, Himanshu Sekhar Rout, Prasant Panda, 2007
- 2) Health Economics in Development: by World Bank
- 3) Understanding Health Economics by John Rapoport
- 4) Health Economics and Financing by Thomas E Getzen
- 5) Health Economics for Developing Countries: A Practical Guide: by S. Witter, T. Ensor, M. Jowett and R. Thompson

## **SEMESTER- II**

### **Health Promotion Approaches and Methods**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

**CO1:** Application of communication strategies for health promotion

**CO2:** Describe the role of media as influences of healthy and non-healthy lifestyles

**CO3:** Develop effective health messages for mass media campaigns

**CO4:** Critically examine health messages in public health perspective

**CO5:** Design effective health promotion activities

#### **Contents**

##### **Unit 1: Introduction to Health Promotion**

- 1.1 Introduction to health promotion, Foundations for health promotion, Social determinants and health promotion, Communication strategies for health promotion
- 1.2 Overview of current national health policies, their health promotion strategies of national health programs, Community need assessment for designing an effective health promotion activity

##### **Unit 2: Theories and Concepts of Health Promotion**

- 2.1 Overview of concepts of health promotion; The Ottawa Charter – 1986; Models of health promotion (Biomedical model, behavioural model, socio-environmental model; Major theories in health promotion (Behavioural change theories: Health Belief Model, Stages of change theory, social learning theories, Community change theory, diffusion of innovations.
- 2.2 Developing health promotion strategies in community & hospitals; Role of professional health educator in health promotion

##### **Unit 3: Health Promotion Approaches**

- 3.1 Medical approach, Behaviour change, Education approach, Empowerment approach, Social change approach; Tannahill's model of health promotion, health promotion interventions, types of intervention activities

- 3.2 Role of corporate in health promotion; Role of internet viz. email, web portals etc. in health promotion; Role of government and private sector in health promotion, Evaluation of health promotion plans

**Unit 4: Health Education**

Definition, objectives, principles, contents, practice, application, methods, approaches, tools; Health education Vs propaganda; Adoption process – Roger’s model – application; planning and management of health education

**Unit 5: Propagation of Healthy Lifestyle**

- Substance abuse epidemic in parts of India
- Smokeless (chewable) and smoked tobacco addictions in parts of India
- Drunken driving: social and personal responsibilities and control measures
- Stigmatization of health conditions
- Behavioural issues in children and teens: substance abuse, suicide patterns
- TV and other media as influencers of healthy/non healthy lifestyle

**Practicum**

- Writing Health Messages
- Handling Communication Aids
- Developing Communication Campaigns through Participatory Learning and Action (PLA), FGD, Counselling, in-depth interviews
- Conduct health education activities in schools and community
- Health promotion activities

**Suggested readings:**

- 1) Ramachandran & Dharmalingam: Health Education- a new approach, Vikas publishing
- 2) Park K: Text book of preventive and social medicine, M/s Banarasidas, Jabalpur
- 3) Health education: Creating strategies for school and community health by Glen Gordon Gilbert, Robin G Sawyer
- 4) Health Promotion and Health Education. Donev, Doncho & Mirchevska, Lenche & B Velkovski, Zoran & Kosevska, Elena & Stojanovska, Vera & Gligorov et.al (2014).

## **SEMESTER- II**

### **Introduction to Financial Management and Budgeting**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

CO1: Apply financial management and analysis techniques in public health programs

CO2: Manage cash-flow, accounts and balancing budgets in health care programs

CO3: Evaluate the financial effectiveness and efficiency of health programs

CO4: Compare and contrast the cost, quality and access of health care in various high income and low-middle income nations

CO5: Analyze the structure, delivery and financing of health care in the India and other industrialized nations

#### **Contents**

##### **Unit 1: Introduction to Financial Management**

- 1.1 Public financial management system- Objectives, scope, financial decisions, functional areas of financial management
- 1.2 Health Financing System: Introduction, objectives and scope, functions of health financing system, tools of financial analysis and planning in health care

##### **Unit 2: PFM Mechanisms for the Health Sector**

Formula-based budget allocations for health, Output-based provider payment, Autonomy for health providers, Extra-budgetary funds, Results-based financing, PFMS in NHM

##### **Unit 3: Health Budgeting**

Introduction, definition, health budgeting process, line-item budgeting, program-based budgeting, union health budget, cash flow, accounts and balancing budgets, Cost and dividends for health outcomes, challenges in aligning budget formulation and execution, effectiveness and efficiency

**Unit 4: Health Care Finance**

- 4.1. Introduction- equity; types of financing, Health sector reforms, decentralization; Role of NGO sector (national and global) in health finance; National Health Accounts
- 4.2. Health insurance: community based health insurance, individual health insurance, and all types of health insurance.

**Unit 5: Financing Public Health Services**

Financing at federal, state and local levels, federal level funding mechanism, grant management, prospects for health insurance, concepts of debt and lease financing, sustainability of health programs

**Practicum**

- Visit to NHM district office to learn PFMS
- Budget plan for grant writing
- Visit to District Treasury to study fund flow mechanism

**Suggested readings:**

- 1) William J. Ward, Health Care Budgeting and Financial Management, Santa Barbara publishers
- 2) Bharanitharan, Janarthanan & Vijayasekar, Manjula Vijayasekar. (2013). Introduction to Healthcare Financial Management. IJMFSMR.
- 3) Health Care Finance: Basic Tools for Nonfinancial Managers. Judith J. Baker and R. W. Baker
- 4) Essentials of healthcare finance: William O Cleverley, Jones & Bartlett Learning

## SEMESTER- II

### **Social and Behaviour Change, Effective Communication in Healthcare**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Identify and analyze the behavioural, social, and cultural factors associated with health and illness.
- CO2:** Apply theories associated with healthy and unhealthy behaviour related to social and behavioural sciences.
- CO3:** Implement and manage social and behavioural change communication in public health
- CO4:** Apply key concepts of sociology to study health communication

#### **Contents**

##### **Unit 1: Introduction to Social and Behavioural Health**

Importance of social and behavioural factors in public health; sociological perspectives on health, Historical perspectives on population and diseases; Social epidemiology; Social ecological web, key concepts in sociology as applied to the study of health, social and cultural processes impacting health status and access to health services

##### **Unit 2: Conceptual Framework and Social Science Behavioural Theories**

Introduction to behaviour change theories and communication, health and human behaviour, Health belief model; Theory of planned behaviour; Models of behaviour changes; Transtheoretical and adoption process model.

##### **Unit 3: Health and Illness Behaviour**

3.1 Health behaviours in developing countries

3.2 Social and cultural context of health

Social cognitive theory; Social network theory; Diffusion of innovation and social marketing

Social reaction to diseases; Comparative health cultures; Health disparities, Diversity and cultural competencies; Deviance and social control

**Unit 4: Health Communication**

- 4.1 Introduction; Principles; Types, Process; Application in health; Models of communication; Elements of communication; Health Communication Planning Cycle, Factors influencing communication; Barriers of communication
- 4.2 Health Communication- Channels, functions, Methods- Traditional; Modern; Individual; Group; Mass; Target groups, implementing and managing social and behaviour change communication in public health (IEC, IPC, BCC and SBCC)
- 4.3 Communication techniques and strategies, Importance of communication in policy making, barriers and challenges while communicating with policymakers, human behaviour in communications, its role in public health problems and solutions, public speaking, evidence based advocacy, consensus building, etiquettes and professionalism

**Unit 5: Society and Medical Anthropology**

- 5.1 Society- types of society, Family- types, Social institutions- marriage, family trends, political, religious, economic; Social mobility; Social change – planned and unplanned; Industrialization, urbanization and modernization
- 5.2 Social pathology in relation to public health Social problem; Crime; Slums; Delinquency; Alcoholism; Prostitution; Beggary; Mental disorders
- 5.3 Introduction to applied medical anthropology: History, ethno-medicine, cultural relativism, ethical considerations

**Practicum:**

- Visit to NGOs working in specific areas to learn the applied aspects of social theories.
- Designing programmes based on behavioural change
- Visit to counselling and de-addiction centres

**Suggested readings:**

1. Social and Behavioural – Foundations of public health- by Jeannie Coreil
2. Essentials of health behavior: Social and behavioural theory in public health by Mark Edberg, Jones and Bartlett publishers
3. Foster and Anderson: Medical Anthropology, Wiley, New York
4. Related web resources



**INTERNSHIP:**

Two months' internship will be undertaken by all the candidates with an aim to integrate learning and practice in an active public health organization. This can be undertaken at governmental or non-governmental public health organisations or program management units. The internship should include the candidate's role and support in assessing, monitoring, or conducting surveillance of health problems/services in a population; research on population-based health problems; developing and/or implementing policies and intervention strategies to meet public health needs. It should contribute to the organization, and should help in understanding public health management and coordination and gaining personal confidence and leadership experience. Although finding a suitable internship opportunity lie with the candidate him/herself, mentors will facilitate the process. After the completion of 2 months of internship, candidates will be expected to submit a brief summary of public health program/challenge dealt with and solution proposed/implemented by the candidate at the end of third semester which will be evaluated in CIE and SEE. The internship is worth six (6) credits.

## SEMESTER III

### **Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) - Basics**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Describe factors affecting the health of mother and child and the existing services for mother and child.
- CO2:** Identify the concepts of family welfare, principles and the role of health administration in the implementation of the programs.
- CO3:** Identify and describe initiatives taken by the state and central government to improve women, child and adolescent health
- CO4:** Evaluate reproductive, maternal and adolescent health programs in the country

#### **Contents**

##### **Unit 1: Introduction to Reproductive Health**

- 1.1 Introduction to RMNCH+A services- historical context, evolution, coverage and innovation; components of service delivery in RMNCH+A, Development of MCH activities in India; The effect of Reproductive pattern on Maternal & Child Health.
- 1.2 Women's Health: Menarche, menopause and associated problems and management

##### **Unit 2: Measurements in RCH**

- 2.1 Measures of Reproductive Pattern: Age at Marriage & Maternal Age; Obstetric history (TPAL and GPA terminology) complete family size; Birth Spacing.
- 2.2 Measures of Health Mortality: Maternal Mortality Rate/Ratios; Infant & Child Mortality; Fetal Loss Morbidity: Maternal complication or illness of pregnancy/delivery; Maternal Nutrition and health; Infant birth weight/Prematurity; Birth defects; Growth & Development: Height/Weight, Body Mass Index, Intelligent Quotient (IQ)

**Unit 3: Programme Interventions to Improve Maternal and Neonatal Health, Adolescent Health**

MCH, Safe Motherhood & Child Survival programme, Reproductive & Child Health (RCH) programme; Components, implementation & Outcomes Critical Assessment, National Health Mission Salient feature critical review implementation; Adolescent health, innovations in service delivery, framework for evolution of services

**Unit 4: Child Health**

- 4.1 Integrated Child Development Services (ICDS)-Organizational structures, Outreach, Critical assessment, Program Impact
- 4.2 School Health Programme- Critical Review, objectives & Components, Child schooling and impact on health, Child labour
- 4.3 Childhood Disabilities- Problems, types, causes, preventive measures, sources of data, community Rehabilitation. Nutrition- Infants, Children and adolescents

**Unit 5: Family Welfare Programme:**

- 5.1. Historical view from birth control to family welfare, clinical approach, Cafeteria Approach, Target based Approach, Target free approach, Organizational Structure of FW Program
- 5.2. Eligible couple Survey, National, state level Evaluations, Source of Data for the Programme, demographic goals, All India Hospital Post-Partum Programme
- 5.3. National health policy- salient features, critical review of Millennium Development Goals and Sustainable Development Goals; Adolescent health initiatives- Rashtriya Kishori Swasthya Karyakram, Kishori Shakti Yojana, role of gender in RMNCH+A

**Practicum**

- Visit to maternity homes, PHCs
- Visit to NGOs working on RMNCH+A issues.
- Visit to Anganwadis/Women and child development department

**Suggested readings:**

- 1) Park K: Park's textbook of preventive and social medicine, M/s Banarasidas Bhanot, Jabalpur.
- 2) Morlev David: Pediatric priorities in the developing world London.
- 3) Venkatachalam P.S. Nutrition for mother and child, ICMR, New Delhi.
- 4) Gopalan C and Chatterjee: Use of growth chart for promoting child nutrition.
- 5) Nutrition Foundation of India.
- 6) Clive Wood: contraception explained Geneva WHO
- 7) Peel John and Potts Malcolm: Text book of contraception practices, Cambridge Uty. Press.
- 8) Asha A. Bhendre & Thara Kanitkar: Principles of population studies, Himalaya publishing house, Bombay.
- 9) Population reports: John Hopkins University, Baltimore, USA

## **SEMESTER III**

### **Introduction to Health Programmes and Evaluation**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

**CO 1:** Synthesize evidence to guide development of a program design

**CO 2:** Apply current frameworks and theories to the development of program design

**CO 3:** Apply the principles of program designing for sustainability, replicability and scalability

**CO 4:** Implement the concepts of various national health programs in designing new Programs

#### **Unit 1: Introduction to Designing of Health Programs**

Concept of designing health programs, basic approaches to program design, analysis and interpretation of health programs (4-S of program design, logic model, problem tree analysis, objective tree analysis, stakeholder analysis, risk factor identification)

#### **Unit 2: Program Designing Process**

Needs assessment, target population, links between determinants, health problem and target population, writing goals and objectives, identifying health inequalities, resource prioritization, Project plan- pre-planning stages, planning stages, implementation stages.

#### **Unit 3: Evaluation of Health Programs**

Steps in evaluation, elements of evaluation, measures and indicators of input, process, output and outcome; Elements and calculation of the PIPE Impact Metric for evaluating health program impact, evaluation using group data and individual data.

#### **Unit 4: National Health Programs for Communicable and Non-Communicable Diseases**

NVBDCP, National Leprosy Eradication Programme, RNTCP, National AIDS Control Programme, National Programme for Control of Blindness and Visual

Impairment, NIDDCP, NPCDCS, National Mental Health Programme, IDSP, NPHCE, NTCP, National Programme for Prevention & Control of Deafness

### **Unit 5: National Health Programs for Maternal and Child Health**

Universal Immunization Program, National Health Mission, National Urban Health Mission, RCH I & II, RMNCH+A, Janani Suraksha Yojana, Janani Shishu Suraksha Karyakram

### **Practicum**

- Design a health promotion program
- Design a disease prevention program
- Visit the offices of various national health programs at District level

### **Suggested readings:**

- 1) Health Program Planning and Evaluation- A practical, systematic approach for community health- L Michele Issel, Jones and Bartlett Learning
- 2) Bartfay, Wally & Bartfay, Emma. (2016). Program planning and evaluation in public health.
- 3) NATIONAL HEALTH PROGRAMS OF INDIA: National Policies and Legislations Related to Health, J Kishore, Century Publications

## **SEMESTER III**

### **Principles of Social Research Methods**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Demonstrate the concept of public health research
- CO2:** Apply and analyse the various quantitative research methods
- CO3:** Appraise and practice the various qualitative research methods
- CO4:** Develop operational research designs with an intent to improve the public health practices
- CO5:** Practice ethical approaches in research to benefit human kind in the research process

#### **Unit 1: Introduction**

Objectives of research, Concept of health research; types of research, importance of quantitative and qualitative research; Steps in Planning of Research studies, tools and measurement of research

#### **Unit 2: Quantitative Research Methods**

- 2.1 Study designs, advantages and disadvantages of various study designs, Guidelines for research reporting for various study designs- STROBE, PRISMA, CONSORT; Sample size determination and sampling methods.
- 2.2 Role of theory, cause and effect phenomenon in research, formulation of hypothesis; Study Questions, Review of literature; Data Collection & Analysis; Dissemination: Publishing findings; Public health surveillance

#### **Unit 3: Qualitative Research Methods**

- 3.1 Relevance of qualitative methods in public health research; Qualitative methods- Ethnography, grounded theory, narrative, case study, phenomenology, Delphi technique; Data collection methods- Focus group discussion, In-depth interview, Key informant interview, participant observation; Qualitative data analysis, Mixed

#### **Unit 4: Operational Research**

- 4.1. Scope of Operation Research in Public Health; Planning and conducting participatory action research in public Health;
- 4.2. Introduction to Important Operation Research methods: Systems analysis, linear programming technique, Network analysis, Queuing theory

#### **Unit 5: Ethics in Research**

- 5.1. **Ethics in Research;** Conflict of interest and integrity in research; Ethical review process- committees, roles and responsibilities
- 5.2. Evaluation of risk and benefits of research; Ethical reasoning; Ethical issues in public health programmes.

#### **Practicum**

- Planning and developing research projects
- Data Analysis manual techniques and softwares
- Designing Research Programmes

#### **Suggested readings:**

- 1) Sarantakos: Social Research, Mac Milan Press, Harupshire, Australia.
- 2) Festinger& Katz: Social research, Logman, London.
- 3) Johoda Maric et al: Research methods in social relations, free press, New York.
- 4) Kothari, C.R: Research Methodology, Viswaprakasan, Bombay.
- 5) Park K: Park' s text book of preventive and social medicine, M/s Banarasidas Bhanot, Jobalpur.



**SEMESTER III****Environment and Occupational Health****COURSE OUTCOMES**

*At the end of the course students will be able to...*

- CO1:** Apply the basic concepts and fundamentals of environmental health sciences and key environmental health issues.
- CO2:** Develop the risk assessment concepts and make decisions about environmental health issues.
- CO3:** Develop skills in analysing, sensitizing and managing the community about environmental health issues.
- CO4:** Diagnose the cause of environmental pollution and design appropriate control measures to improve the health outcomes
- CO5:** Create a job safety analysis by applying the concepts of workplace injury prevention risk management and environmental laws
- CO6:** Develop an arbitrary plan of action to improve the waste disposal methods in urban and rural context

**Contents****Unit 1: Fundamentals of Environmental Health**

- 1.1 History of environmental health, Ecosystem, Climate, biomes, Links between environment and human health, environmental health policy and legal mechanisms,
- 1.2 Environmental degradation: Global climate change, Deforestation, soil degradation, Loss of bio-diversity, Impacts of environmental degradation on health, melting glaciers

**Unit 2: Water, Air, Noise & Radiation****2.1 Water**

- Introduction: Properties of water, Hydrological cycles, Uses of water, Water resources- Sources of water supply, Water and health, Water shortage and scarcity, Water consumption and management, Sources of drinking water

- Water pollution: Definition, types of pollution, sources of pollution, water treatment, purification of water, water quality – critical and standards, surveillance of drinking water quality.

## **2.2 Air, Noise and Radiation**

- Introduction: Composition of air and atmosphere, ozone layer; definition of noise, definition of radiation
- Air pollution: air pollutants, Outdoor and indoor air pollution, Health implications of air pollution, air pollution dispersion, ozone layer depletion, Prevention of air pollution, Ventilation;
- Noise: Properties, health effects of noise, control, and regulations
- Radiation: sources, types, health effects of radiations
- Public health importance of air, noise, light, ventilation and radiation

## **Unit 3: Disposal of Waste**

- 3.1 Solid Waste: Definition and characterization of municipal solid waste, Sources of waste/ refuse, Collection and disposal of solid waste- Dumping, landfills, incinerator, composting manure pits, burial.
- 3.2 Excreta disposal: Excreta disposal- public health importance, methods of excreta disposal in sewerred and unsewerred areas, Biological Oxygen Demand, Public health aspects of sewage, sulabh souchalay, etc
- 3.3 Hazardous waste: Definition, sources of hazardous waste; Management and disposal of hazardous waste
- 3.4 Biomedical waste management- Act, rules and recent advances

## **Unit 4: Risk Assessment**

- 4.1 Environmental health impact assessment, Environmental risk- characteristics, Development of risk analysis, Tools of risk analysis, Process of risk analysis, Hazard identification, Risk management and communication, Risk perception, Environmental policies, laws and their compliance, Central Pollution Control Board (CPCB) guidelines, Lifestyle and dietary effects on health, food safety
- 4.2 Disaster management- Definitions and concepts, Disaster epidemiology, Incident command and Incident management, Communication (tactical and risk communication), Vulnerable populations in disasters, Evaluation of disaster response and its implications for planning, Laws and regulations, Disaster risk assessment, Disaster Risk Reduction

**Unit 5: Occupational Health**

Occupational environment/ setting, Occupational hazards, occupational diseases, Workplace injuries, Occupational standard, Prevention of occupation diseases, ergonomics, occupational health legislations (Factories Act, ESI Act) and standards, measures for health protection of workers.

**Practicum**

- Visit to sewage treatment Plant, water purification Plant
- Visit to Biomedical waste treatment Plant
- Class room activities: Disaster planning and mitigation
- Visit to biodiversity hotspots

**Suggested readings:**

- 1) Essential Environmental Health by Fries, Jones & Bartlett Publishers – 2007
- 2) Living with the Earth- Concepts of Environmental Health Science- Gary SMorare-Lavis Publications
- 3) Environmental Science- Toward a Sustainable future - Richard T WrightDorothy F Boors PHI learning Private ltd- New Delhi, Pearson Education
- 4) Environmental Health by Moeller D.W, Harward University press.
- 5) Park's Textbook of Preventive and Social Medicine, K.Park. Banarsidas Bhanot publishers.

## **SEMESTER III**

### **Law and Ethics in Public Health**

#### **COURSE OUTCOMES**

*At the end of the course students will be able to...*

CO1: Understand the legal and ethical aspects of public health practice

CO2: Know the Indian legislative and administrative structure

CO3: Understand the role of Government in managing health of the people

#### **Contents**

##### **Unit 1: Introduction to Indian legislation**

Indian legislative structure and functions, distribution of powers, forms of legislation (Act, rule, regulation, policy, order, notification), Characteristics of Public health law, public health laws in global economy, human rights in public health, role of government in managing health of the people, concepts of governance and institutions, theories in policy analysis.

##### **Unit 2: Laws related to Census, Vital Events, Control of Epidemics, and Other Public Health Programs**

- 2.1 The Census of India, The Registration of Births and Deaths Act 1969, Regulations during emergencies and outbreaks-The Epidemic Diseases Act 1897, Indian Air Craft (Public Health) Rules 1975, public health laws in global economy, global health hazards and security
- 2.2 Transplantation of Human Organs Act 1994, Food safety and Standards Act 2006, The Drugs and Cosmetics Act 1940, Cigarettes and other Tobacco Products Act 2003

##### **Unit 3: Legislations for Woman and Child Empowerment and Health Protection**

- 3.1 Medical Termination of Pregnancy (MTP) Act, Maternity Benefit Act, The Pre-Conception and Pre-Natal Diagnostic Techniques Act, Protection of Women from Domestic Violence Act, The Immoral Traffic (Prevention) Act

- 3.2 Infant Milk Substitutes, Feeding Bottles and Infant Foods Act, Juvenile Justice Act, Child Labour (Prohibition and Regulation) Act, The Child Marriage Restraint Act, Protection of Children from Sexual Offences Act

**Unit 4: Public Health Ethics**

- 4.1 General ethical principles, Informed consent process, Privacy, security, and confidentiality, Conflict of interest, compensation for participation, Selection of vulnerable and special groups as research participants, ethical review procedures and committees, bioterrorism, emerging infectious diseases, conflicts.
- 4.2 Clinical and community trials- general principles, Clinical drug/vaccine development, Bioavailability/bioequivalence study, Ethical implications of study designs, Multi-centric trials, Clinical trials on traditional systems of medicine

**Unit 5: Public Health Research Ethics**

Principles of public health research ethics, Ethical issues of epidemiological and public health research study designs, Use of administrative and other data sources for research, Informed consent, assent, protecting participants and communities, stakeholders in public health research, public health information and privacy

**Practicum**

- Visit to District Legal Services Cell
- Visit to Institutional Ethics Committee, KSHEMA
- Case studies related to various medical ethical issues

**Suggested readings:**

- 1) NATIONAL HEALTH PROGRAMS OF INDIA: National Policies and Legislations Related to Health, J Kishore, Century Publications
- 2) National ethical guidelines for biomedical and health research involving human participants, ICMR 2018
- 3) IAPSMs Textbook of Community Medicine, A M Kadri, Jaypee Brothers Medical Publishers

## **SEMESTER IV**

### **ELECTIVE STREAM**

#### **Stream 1: ADVANCED EPIDEMIOLOGY**

##### **Part I:**

##### **Unit 1: Advanced Biostatistics:**

Principles of regression, Methods of regression, Linear regression, Logistic regression Poisson regression, Cox proportional hazards regression, Regression diagnostics Introduction to multilevel modelling, Introduction to data imputation, Choosing the best Models

##### **Unit 2: Applied Epidemiology**

Directed acyclic graphs and conceptual framework, Confounding bias and methods to reduce confounding, Selection bias, Information bias, Measures of validity and reliability, Nested study designs, Systematic reviews and meta-analysis overview

##### **Unit 3: Field Epidemiology**

Epidemiology and management of Vector Borne Diseases, Health measures following disasters, Describe the steps involved in planning and conducting a research project, Advanced designs in clinical trials, Pre survey formative research, Sampling and sample size calculations, Ethical issues in surveys, Tool development, Conduct of surveys, Quality control and assurance in surveys, Survey data analysis, Identify appropriate research designs for a range of questions in health, Evaluate the strengths and weaknesses of various data collection methods; Various public data sources: CRS, SRS, Census, NFHS, DLHS, HMIS, MCTS, etc.

##### **Unit 4: Communicable Disease Epidemiology**

Recognize the burden of communicable diseases (CD) affecting the population, examine factors contributing to the persistence of infectious diseases, Understand reasons for emergence and re-emergence of infectious diseases

Key concepts: Incubation periods, Epidemic patterns, Modes of transmission, Transmission dynamics, Measures of infectiousness, Secondary attack rates, Analyse the transmission dynamics of diseases and design appropriate control measures

Apply basic infectious diseases epidemiological skills to address major emerging and re-emerging communicable diseases

**Unit 5: Disease Surveillance**

- Surveillance: Case in point: Integrated Disease Surveillance Program (IDSP)
- Epidemiology of common communicable diseases- TB, Malaria, Leprosy, Polio, STIs, AIDS, Meningococcal meningitis, Hepatitis B, and Measles.
- Disease surveillance of non-communicable diseases

**Part II****Unit 1: Outbreak Investigation**

Mathematical models of infection dynamics, outbreak investigation and surveillance, schedules, adverse reactions, contraindications, vaccine efficacy, impact assessment)

- Live outbreak investigation
- Adverse Event Following Immunization (AEFI) investigation

**Unit 2: Non-Communicable Diseases (NCD) Epidemiology**

Describe and understand the epidemiology of NCDs

- Cardiovascular diseases
- Hypertension
- Diabetes mellitus
- Cancers
- Mental health
- Stroke
- Burns/trauma/ accidents etc.

**Unit 3: NCD Program Planning**

- Comprehend the upstream and downstream determinants of NCDs
- Understand the Individual approaches/or high-risk approaches and population based/ or public health approaches to prevent NCDs
- Recognize the risk factor approach to prevent non-communicable diseases
- Comprehend the Population based/public health approaches to prevention of common NCD risk factors (physical inactivity, tobacco and unhealthy diet)
- Familiarize with the current projects on targeting the prevention of NCDs, including, innovations in prevention

**Unit 4: Applying Epidemiology in Evaluation and Policy:**

- How prevention of NCDs interlinks with Communicable diseases. How women and child health, health of the girl child links to prevention of NCDs
- Recognize Economic burden of NCDs and benefits of prevention
- Comprehend how sustainable development and prevention of NCDs go hand in hand
- Comprehend the power of policy and role of environment in the prevention of NCDs
- Population-based screening
- Surveillance of cancers including cancer registry

**Unit 5: Ethical and Professional Issues in Epidemiology**

- Access to data
- Protecting privacy and confidentiality
- Race and ethnicity in epidemiological studies
- Conflict of Interest
- Interpreting findings

**Suggested readings:**

- 1) Leon Gordis (4th Edition) , Epidemiology, Saunders ( Elsevier Inc) Publication
- 2) K.Parks's Textbook of Preventive and social medicine M/S Banarasidas Bhanot Publishers
- 3) Oleckno, William, Essential Epidemiology: Principles and Applications, Waveland Press, Inc., 2002
- 4) Ann Aschengrau, Essentials of Epidemiology in Public Health, Jones & Bartlett Publishers
- 5) Rothman's Text book of Modern Epidemiology (3rd Edition)
- 6) Park K: Park's textbook of preventive and social medicine, M/s Banarasidas Bhanot, Jabalpur.



## **SEMESTER IV**

### **Stream 2: Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) - Advanced Course**

#### **Part I:**

#### **Unit 1: Reproductive and Sexual Health**

- Fundamentals of reproductive biology
- Adolescent Sexual and Reproductive Health
- Understanding Reproductive Health Policy
- Family Welfare and Reproductive Health measures
- Reproductive Health programs in India

#### **Unit 2: Maternal Health:**

- Introduction to maternal and new-born health programs and their behavioural basis
- Historical developments in MCH in India
- Reproductive & Perinatal Epidemiology
- Critical analysis of Janani Suraksha Yojana
- Pradhan Mantri Matritva Vandana Yojana
- Pradhan Mantri Surakshit Matritva Abhiyan

#### **Unit 3: Newborn Health:**

- Prenatal and Infant Growth and Development
- Issues in the Reduction of Neonatal morbidity and Mortality
- Indicators of fetal, perinatal and neonatal mortality and their significance
- India Newborn Action Plan
- Special Newborn Care Units
- Navjaat Shishu Suraksha Karyakram

#### **Unit 4: Child Health**

- Introduction to child health programs
- Infectious Disease and Child Survival
- Nutrition and Growth in Maternal and Child Health
- Legislations and programs in MCH

#### **Unit 5: Adolescent Health**

- Overview of population health approaches for adolescents
- Adolescent Health and Development

- The Social Context of Adolescent Health and Development
- International Adolescent Health
- Adolescent Health status in India
- Adolescent Health Development - policy and systems
- Health issues specific to adolescents: anaemia, teenage pregnancy, menstrual hygiene, obesity, mental health promotion and illness prevention, substance use prevention, violence, media etc.

**Part II:****Unit 1: Gender and Health**

- Define concepts - Gender, vulnerable populations, gender equality and equity and emerging issues
- Understand the difference between equity and equality
- Understand different forms of social exclusion
- Explain the difference between sex and gender and how these variables, combined with other forms of social exclusion impacts on health
- To increase understanding of the importance, benefits and urgency to identify and reduce barriers and address the needs of women and socially excluded groups, and promote their agency in the context of accessing health care and related information

**Unit 2: Gender and Social Inclusion**

- To increase understanding of the inter- sectionalism between gender and other types of social exclusion/inclusion and patients' experiences in accessing and utilising health services and the impacts on uptake and utilization of services
- To increase understanding of the realities of discrimination from the grass root perspective
- To identify good practices in Gender and Social Inclusion (GSI) within India
- To become familiar with toolkits for including GSI in public health research, programs, policies and advocacy

**Unit 3: Concepts of Public Health Nutrition**

- Appreciate the basic concepts and principles of foods and nutrition relevant to human health
- Summarize population based dietary and nutritional recommendations

- Define the concept, purpose and scope of Public Health Nutrition

**Unit 4: Nutritional Epidemiology**

- Understand the definition, utility and applications of epidemiology in nutritional sciences
- Recognize the role of community nutrition in improving human health
- Utilize suitable data and assessment methodologies to conduct community needs assessment
- Recognize the pillars of a healthy community
- Identify the most relevant nutrition concerns in the community at present

**Unit 5: Nutrition Policies and Programs**

- Enlist strategies for their prevention and management (Adolescent, Women, Maternal and child under-nutrition, nutrition transition, over-nutrition and chronic diseases)
- Demonstrate an understanding of principles of nutrition education and enlist the steps of developing nutrition education programs
- Demonstrate an understanding of project planning and management in nutrition programmes
- Appreciate inter-sectoral nature of nutrition and food policy
- Enlist the features of various ongoing nutrition programs

**Suggested readings:**

- 1) Park K: Park's textbook of preventive and social medicine, M/s Banarasidas Bhanot, Jabalpur.
- 2) Morlev David: Pediatric priorities in the developing world London.
- 3) Venkatachalam P.S. Nutrition for mother and child, ICMR, New Delhi.
- 4) Gopalan C and Chatterjee: Use of growth chart for promoting child nutrition.
- 5) Nutrition Foundation of India.
- 6) Clive Wood: contraception explained Geneva WHO
- 7) Peel John and Potts Malcolm: Text book of contraception practices, Cambridge Uty. Press.
- 8) Asha A. Bhendre & TharaKanitkar: Principles of population studies, Himalaya publishing house, Bombay.
- 9) Population reports: John Hopkins University, Baltimore, USA

## DISSERTATION

### Description:

The project work and internship provides the students with a practical experience in a public health setting, where students can apply and integrate the skills and knowledge gained during their academic course and curriculum linked field exposures.

### Objectives:

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

- Apply and integrate the skills and knowledge gained in theory.
- Gain hand on experience on public health practice: such as planning, organization structure, community interaction, etc.
- Demonstrate the competency in public health practice.
- Demonstrate leadership, teamwork, creativity, communication skills in public health domain.

## COURSE OUTCOMES

**At the end of the course students will be able to...**

**CO1:** Implement an entire project by applying the research skills and program implementation skills

**CO2:** Apply and integrate the skills and knowledge gained in theory

**CO3:** Gain hands-on experience on public health practice such as planning, organization structure, community interaction etc

**CO4:** Demonstrate the competency in public health practice

**CO5:** Demonstrate leadership, teamwork, creativity, communication skills in public health domain