Certificate in
Fundamentals of Operational Research
in Public Health (CER-FORPH)

Batch II

20th April 2024 to 16th October 2024

**A Joint Collaboration
of
Foundation of Healthcare Technologies Society,
New Delhi, India
&
Sudha Rustagi College of Dental Sciences & Research, Greater
Faridabad, Haryana, India**

Foundation of Healthcare Technologies Society
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FHTS

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About Foundation of Healthcare Technologies Society (FHTS)

The Foundation of Healthcare Technologies Society is certified as a Scientific & Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research (DSIR), New Delhi, Govt. of India. It is the first of its kind that integrates multi-sectoral segments through the use of innovative informatics platforms for an overall improvement of population health in underserved settings. Economic situations in developing countries have resulted in increased disparities in terms of health, economic growth, and access to resources that are valuable to the overall growth of the population. The foundation aims to establish a center of excellence in developing a skilled workforce in the area of informatics through human resource development, capacity building, innovative research, translation, dissemination of research findings into practice, and health systems strengthening. The foundation promotes innovative ideas that can be practiced at the grassroots level so that solutions that are provided can be personalized, evidence-based, research-driven, context-specific, goal-oriented, and culturally adaptable to meet the needs of the diverse group of users. The foundation forms collaborations and partnerships across boundaries to address the growing challenges of providing better living to the individuals, families, and the environment they live. We aim to build a unique environment that will bring innovations across multiple sectors resulting in a healthier ecosystem.

About Sudha Rustagi College of Dental Sciences & Research

Sudha Rustagi College of Dental Sciences & Research is located in Greater Faridabad, an Education hub on the southern border of Delhi, it is the most renowned institute for BDS & MDS (in all Specialties), in the Northern Region. SRCDSR is playing a vital role in providing excellent education in the field of Dentistry. The college has been recognized by the Ministry of Health & Family Welfare, Government of India, Dental Council of India and affiliated to Pt. B.D Sharma University of Health Sciences, Rohtak. The college encompasses a vision to be recognized as a premier institution of excellence among the reputed dental science education providers in India & Abroad by providing world class Dental education, research, and consultancy services to the global society.

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About the Course

What does the course offer?

Certificate in Fundamentals of Operational Research in Public Health (CER-FORPH) is a program covering facets of operational research. It provides the opportunity for students to gain insights into various aspects of systematic research techniques. The course objective is to develop the skills of the learners to design and strategize interventions to enhance the quality and effectiveness of a program.

The course aims to develop a trained workforce in Operations research planning, implementation, and evaluation. The program aids students in synthesizing and applying the acquired knowledge from the course to address global, national, and public health issues.

The course has a dynamic approach to teaching by using various modes of teaching such as Lecture series, providing suggested latest reading material and in-class discussion along with continuous evaluation methods to build skills amongst the students. Additionally, the program offers a platform for students to voice their opinions on the v-Inspire Public Health Discussion Board along with hands-on research experience.

Course Duration: 6 Months (4 months of training and 2 months of experiential learning)

Course Delivery: Online

Who Can Attend?

- Any undergraduate/graduate/postgraduate/PhD
- Development or Health professionals working in health research
- Newly joined faculties in a public health discipline

Unique Features of the Course

- Flexible, self-paced
- Asynchronous and synchronous learning
- Weekly interactive lectures
- Case studies
- Weekly discussions
- Problem-solving exercises

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- Research project
- Mentorship and Experiential Learning
- Discussion Forum
- Public Health Events student participation opportunities

Learning Objectives

The students will learn:

- To translate ideas into research questions.
- To apply theoretical knowledge in community settings.
- To identify gaps in existing research/solutions
- To analyze and interpret quantitative and qualitative data.
- To interpret data and disseminate the research findings
- To design and develop a research study

Course Topics

Topics to be covered in Course
1. Introduction to Research
2. Overview of Research Methodology
3. Data analysis in public health
4. Fundamentals of manuscript writing

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Course Layout

Week-wise Course Layout	
Week 1	Research Domains
Week 2	Basics of Research Methodology
Week 3	Formulating a Research Question
Week 4	Defining Research Hypothesis
Week 5	Study Methods
Week 6	Survey Methods
Week 7	Research Design
Week 8	Sampling Methods
Week 9	Data Analysis 1
Week 10	Data Analysis 2
Week 11	Introduction to Qualitative data
Week 12	Critical appraisal of scientific literature
Week 13	Systematic and Scoping Review
Week 14	Guide to scientific writing
Week 15- Week 17	Research Seminar
Week 18	Case study
Week 19 – Week 26	Experiential learning

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Course Syllabus & Structure

Module No.	Topic	Teaching and Activity	Assessment Type
Module 1	Research Domains	Lecture, Reading, and Class Discussion	Quiz
Module 2	Basics of Research Methodology	Lecture, Reading, and Class Discussion	Quiz
Module 3	Formulating a Research Question	Lecture, Reading and Class Discussion	Quiz
Module 4	Defining Research Hypothesis	Lecture, Reading and Class Discussion	Quiz
Module 5	Study Methods	Lecture, Reading and Class Discussion	Quiz
Module 6	Survey Methods	Lecture, Reading and Class Discussion	Assignment
Module 7	Research Design	Lecture, Reading, and Class Discussion	Assignment
Module 8	Sampling Methods	Lecture, Reading, and Class Discussion	Quiz
Module 9	Data Analysis 1	Lecture, Reading, and Class Discussion	Assignment
Module 10	Data Analysis 2	Lecture, Reading, and Class Discussion	Assignment
Module 11	Introduction to Qualitative data	Lecture, Reading and Class Discussion	Assignment
Mid-Evaluation			
Module 12	Critical appraisal of scientific literature	Lecture, Reading, and Class Discussion	Assignment
Module 13	Systematic and Scoping Review	Lecture, Reading, and Class Discussion	Assignment
Module 14	Guide to scientific writing	Lecture, Reading, and Class Discussion	Quiz
	Research Seminar	Reading and Class Presentation	-
	Case study	Presentation	-
Experiential learning : Hands-on research experience			
Final-Evaluation			
Note: Certificate will be provided to candidates who successfully complete the course.			

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Skills the program offers to the students

The program shapes understanding and provide opportunities to the students to acquire dynamic skills by building their abilities to:

- Identify research gap
- Formulate a research study design
- Critical thinking in designing research methodology
- Implementation of a research study
- Assess and understand quantitative and qualitative data
- Interpretation of data

Benefits of the Course

After completion of this course the students would be able to:

- Turn ideas into executable research
- Learn essential research skills by practice
- Opportunity to involve in funded research projects to gain experience
- Opportunity to be mentored by National and International experts
- Gain research experience to qualify for higher education
- Opportunity to publish research paper

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Course Curriculum

Module No.	Topic	Learning Objectives
	Introduction to Research	**To present an overview of evidence-based research in order to strengthen research in the health care system.**
Module 1	Research Domains	1. To learn the concept of operational research, implementation research and Health system research 2. To integrate different research domain for improving population health 3. To compare the different research domain in different settings
Module 2	Basics of Research Methodology	1. To categorize the different research areas 2. To describe the research methodology 3. To identify various steps involved in research
Module 3	Formulating a Research Question	1. To understand the process of formulating a research question 2. To know the FINER criteria to develop a research question 3. To identify different components of research questions
	Overview of Research methodology	**To comprehend the many elements of research and the step-by-step methodology involved for conduction of evidence-based research.**
Module 4	Defining Research Hypothesis	1. To understand null and alternate hypothesis 2. To develop a research hypothesis 3. Identify the steps involved in hypothesis testing
Module 5	Study Methods	1. To analyze the research problem 2. To implement the study design 3. To apply the appropriate study tool
Module 6	Survey Methods	1. To describe the methods required to design a survey 2. To describe characteristics of survey methodology 3. To frame different types of survey methods
Module 7	Research Design	1. To understand the characteristics of mixed method research 2. To design and develop research study 3. Recognize the ethical considerations of research designs
Module 8	Sampling Methods	1. To understand different sampling methods 2. To distinguish between different sampling methods 3. To apply sampling methods relevant to research objectives

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	Data analysis in public health	To familiarize with the methods and stages employed for data collection, preparation, analysis, presentation, and interpretation to address the nation's current public health concerns.
Module 9	Data Analysis 1	1. To understand the significance of the data 2. To learn about types of data involved in healthcare research 3. To learn about steps involved in data preparation
Module 10	Data analysis 2	1. To understand steps and methods involved in data analysis 2. To train students in presentation and interpretation of data 3. To learn about future scope of healthcare data management
Module 11	Introduction to Qualitative data	1. To Investigate the concerns and perspectives on a specific health issue among the population. 2. To describe the influencing causes of health-related behavior 3. To analyze the qualitative data in health domain
	Fundamentals of manuscript writing	**To learn about the numerous components involved in scientific research writing for peer-reviewed journals using the relevant tools.**
Module 12	Critical appraisal of scientific literature	1. To learn different databases for conducting literature review 2. To compare different types of literature reviews 3. To identify strength and weaknesses of research articles
Module 13	Systematic and Scoping Review	1. To learn and understand the basics of scoping reviews 2. Describe the steps to follow when doing a scoping review 3. Discuss a scoping review case study
Module 14	Guide to scientific writing	1. To know the key elements of a research paper 2. To recognize the structure of key elements involved in scientific writing 3. To learn about reporting guidelines for study types
	Research Seminar	Students will gain hands-on experience and instruction that will help them improve their communication and presenting abilities.
	Case study	Students will develop the abilities necessary for comprehending, interpreting, and summarizing the provided case, which will help them with critical thinking, problem solving, and decision-making.

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Experiential Learning

Our experiential learning component includes our **V**irtual **I**nteractive **N**ovel **S**upport **P**rogram for **I**nnovation, **R**esearch and **E**ntrepreneurship aims to address population health challenges of the 21st century by enhancing academic and non-academic skills of students using an Innovative and participatory experiential learning experience.

Course Quadrants:

- **Quadrant I E-tutorial Topics**
- **Quadrant II- Weekly Reading Material** (Case studies, and Research paper readings)
- **Quadrant III- Discussion Forum (**Weekly discussion topics to facilitate knowledge exchange)
- **Quadrant IV-Assessments**

S.No.	Assessment Type	Weightage
1.	Quiz & Weekly Assessments	30%
2.	End-term Evaluation	30%
3.	Mid-term Evaluation	20%
4.	Case Studies	5%
5.	Research Seminar Presentations	5%
6.	LMS discussion forum	5%
7.	Class Participation	5%
	Total	100%

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Program Outcome

- Certificates are provided to candidates who successfully complete the course.
- Opportunity to participate in Career and mentorship program (CAMP)
- Opportunity to participate in SMAART IMPACT
- Voluntarily participation in Community initiatives

Contact Details

- **Course Manager:** Dr Sabhya Juneja (Ph.D.) and Ms. Bhavya Malhotra
- **Course Coordinator:** Dr. Mansi Gauniyal (Ph.D.)
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