



हरियाणा केंद्रीय विश्वविद्यालय, महेन्द्रगढ़  
CENTRAL UNIVERSITY OF HARYANA, MAHENDERGARH  
(NAAC ACCREDITED 'A' GRADE UNIVERSITY)

## Food Fortification and Human Health: From Concepts to Public Health Applications

[Course Code: 174040H01]

September 9-13, 2019

Sponsored by Ministry of Human Resource Development (MHRD)  
under the scheme of Global Initiative of Academic Networks (GIAN)



*Organised by*  
**Department of Nutrition Biology**  
**School of Interdisciplinary and Applied Life Sciences**



# Food Fortification and Human Health: From Concepts to Public Health Applications

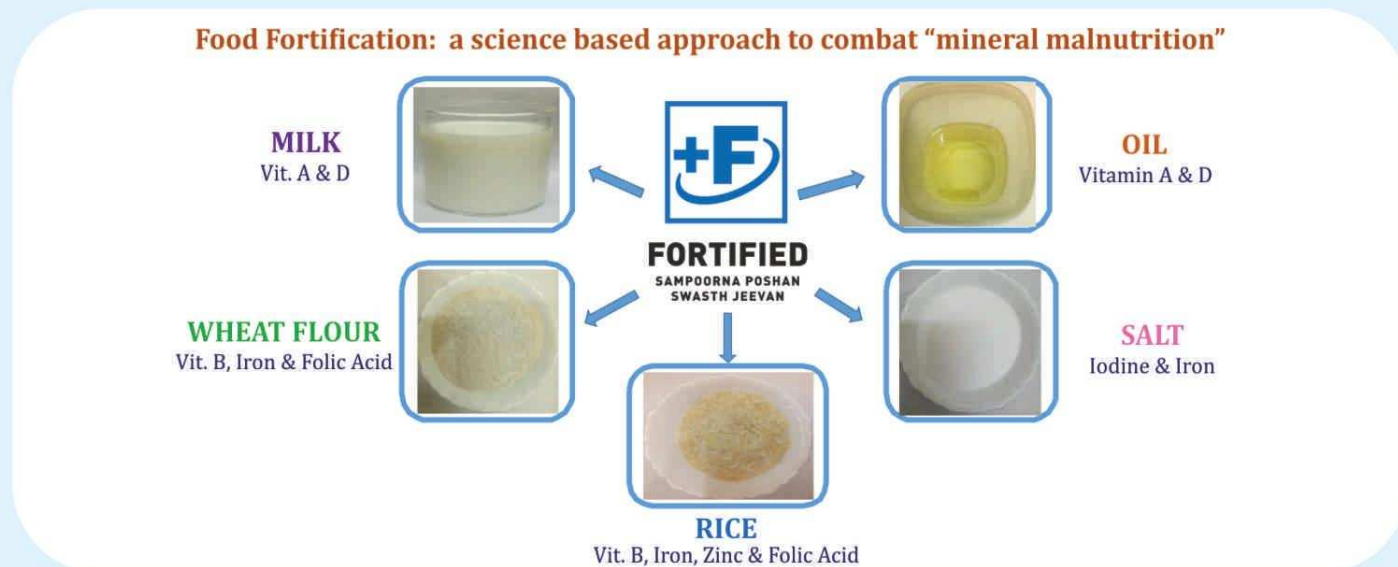
## MHRD Scheme of Global Initiative of Academic Networks (GIAN)

### 1. Overview

Micronutrient malnutrition contributes to reduced health outcomes, increased morbidity, and reduced cognitive development among individuals, and limited economic productivity for communities and countries. India shoulders a disproportionate burden of micronutrient malnutrition and associated functional outcomes such as anemia and severe birth defects. One large-scale intervention that has reduced nutritional anemia and neural tube defects is food fortification: the addition of vitamins and minerals to foods while they are being industrially processed.

Despite evidence that food fortification increases micronutrient intake and reduces associated micronutrient deficiencies, country-level implementation can be challenging. The Food Safety and Standards Authority of India recently released volunteer standards for the fortification of several foods. Several subsequent steps need to be completed to ensure the successful implementation of fortification in each Indian State: passage of mandatory food fortification in social programs and/or open markets, training of food industry in food fortification best practices, training of government food inspectors in regulatory monitoring of food fortification, and creative use of existing data and data-collection systems to assess the health benefits of food fortification among beneficiaries.

These subsequent steps require varying expertise and collaboration among groups that may not historically work together. The course instructor hails from the Food Fortification Initiative which provides technical assistance to country decision makers in all aspects of food fortification design, implementation, monitoring and evaluation. This collective expertise will be brought to bear to the participants to engage them in thoughtful discussion on strengthening the food fortification policies and programs in India.



### 2. Objectives

The primary objectives of the course:

1. To introduce the fundamental principles of food fortification and India's food fortification policies.
2. To explain food fortification procedures and regulatory monitoring.
3. To provide exposure to practical problems and their solutions through case studies.
4. To enhance the capabilities to assess the public health impacts of food fortification.

### 3. Teaching Faculty

#### Foreign Faculty

Dr. Helena Pachón  
Emory University  
1518 Clifton Road Atlanta GA 30322  
USA

#### Host Faculty

Dr. Tejpal Dhewa  
Department of Nutrition Biology  
Central University of Haryana  
Mahendergarh-123031



#### 4. Course Details

Duration: 5 Days (September 9-13, 2019)

##### Lecture Schedule

September 9, 2019		
Day <b>1</b>	Lecture 1 9:30-10:30 AM	Fortification expertise & interest of participant's Pre-course assessment
	Lecture 2 11:00-12:00 Noon	Review of key course concepts
	Tutorials 14:00-16:30 PM	•India's food fortification policies and programs •Group activity: how do India's food fortification policies and programs compare with international recommendations and best practices ?
September 10, 2019		
Day <b>2</b>	Lecture 3 9:30-10:30 AM	How food fortification is done by the food industry ?
	Lecture 4 11:00-12:00 Noon	How regulatory monitoring is done by food control authorities ?
	Tutorials 14:00-16:30 PM	Visit/Virtual tour to a flour mill, to observe food fortification and regulatory monitoring
September 11, 2019		
Day <b>3</b>	Lecture 5 9:30-10:30 AM	How could food fortification and regulatory monitoring be improved in the Indian setting?
	Lecture 6 11:00-12:00 Noon	Design of studies to assess the health impact of food fortification
	Tutorials 14:00-16:30 PM	Discussion on health impact that food fortification has had globally and in India
September 12, 2019		
Day <b>4</b>	Lecture 7 9:30-10:30 AM	How could India's food fortification policies and programs be more impactful?
	Lecture 8 11:00-12:00 Noon	Group activity: How the public health impact of food fortification will be measured in Haryana State ?
	Tutorials 14:00-16:30 PM	Demonstration of implementation of a project to assess the public health impact of food fortification.
September 13, 2019		
Day <b>5</b>	Lecture 9 9:30-10:30 AM	Post-course assessment
	Lecture 10 11:00-12:00 Noon	Discussion: What are the strengths and areas for improvement in India's food fortification policies and programs?
	Tutorials 14:00-16:30 PM	Group activity: How course participants can strengthen food fortification policies and programs in India ?

#### 5. Who can attend?

- Students at all levels (B.Tech/B.Sc./M.Sc/M.Tech/Ph.D.) or faculty from reputed academic institutions and technical institutions.
- Scientists, engineers and researchers from food/nutrition biology/microbiology/biochemistry /chemistry/ biotechnology/pharmaceutical industries, and government organizations including R&D laboratories.
- Professionals working in or associated with Food Fortification and Human Health Institutes & Diagnostics Laboratories.

#### The participation fees:

- Participants from abroad: US \$ 150 • Faculty/Scientists: INR 2000/-
  - Industry Participants: INR 4000/- • Students: INR 1000/-(OBC/UR); INR 500 (SC/ST); INR 0/- (PWD)
- The above fee includes all instructional materials, computer use for tutorials, and assignments, laboratory equipment usage charges, 24 hrs free internet facility. The participants will be provided accommodation on payment basis.



## From Patron & Vice-Chancellor



I am happy to know that, continuing with the vision of the University to promote collaborative initiatives in academics, the Department of Nutrition Biology of the University is organizing a course titled "Food Fortification and Human Health: From Concepts to Public Health Applications" from September 9-13, 2019 under the MHRD scheme of Global Initiative of Academic Networks (GIAN). We take pride in sharing with the stakeholders that this course is the 15<sup>th</sup> GIAN Course conducted by the University in the last two years.

It is enlightening to note that the Course will cover the relevant aspects of food fortification including restitution, micronutrients, premix, fortificants, legislation, standards, internal monitoring, regulatory monitoring, consumption monitoring, efficacy and effectiveness, practice of fortification and regulatory monitoring, the health impact of food fortification, and India's food fortification policies, programs and assessment. The course contents are sure to enrich the knowledge of the participants about designing, implementing, monitoring and evaluation of food fortification initiatives. The GIAN Course shall engage the participants in thoughtful discussion on strengthening the food fortification policies and programs in India. Besides, the expertise of the foreign expert conducting the GIAN course convinces me of its success.

We hope that the students and faculty of different universities shall take the fullest advantage of the course which is designed in order to orient the participants towards innovative and emerging trends in the specific area of Nutrition Biology.

Here, we would like to extend my compliments to the host faculty Coordinator for carrying forward the agenda of the University to adopt innovative pedagogies for dissemination of knowledge.

At the end, I wish the very best of luck for the organization of this course.

**Prof. R. C. Kuhad (FNAS, FNAAS, FBRSL, FAMI)**

## Foreign Faculty



**Dr. Helena Pachón** is a public health nutritionist with 20 years of experience in research and programs to address malnutrition particularly in low- and middle-income countries. Currently, she supports food fortification in her capacity as Senior Nutrition Scientist for the Food Fortification Initiative (FFI). At FFI, Dr. Pachón collates or generates evidence on the public health impact of wheat flour, maize flour and rice fortification. With her FFI colleagues, she also provides technical assistance to country counterparts in fortification advocacy, monitoring and evaluation. She has collaborated with the World Health Organization (WHO) on a series of fortification-related activities: she served as a rapporteur for a WHO rice fortification meeting held in 2012; in 2013, she co-organized with WHO and the New York Academy of Sciences a WHO technical meeting on maize fortification; she served as a technical expert on rice and maize fortification for a WHO guideline development meeting in 2014; and most recently she was invited to contribute to a WHO-led Cochrane Review on flour fortification. Dr. Pachón completed her nutrition doctoral training at Cornell University and her Master of Public Health at Harvard University. She has an appointment at Emory University as Research Professor in the Hubert Department of Global Health in the Rollins School of Public Health.

## Host Faculty



**Dr. Tejpal Dhewa** is a faculty in School of Interdisciplinary and Applied Life Sciences, Central University of Haryana, Mahendergarh. He is the Coordinator, Food Safety Training and Certification (FoSTaC) Centre, Food Safety and Standards Authority of India (FSSAI), and University SWAYAM Coordinator- Central University of Haryana. Dr. Dhewa is a Course Coordinator of SWAYAM UGC MOOC on "Food Microbiology and Food Safety". Dr. Dhewa has a diverse industrial, teaching, and research experience. He has published his research works in national and international journals. Dr. Dhewa also supervised several master's theses/dissertations. He has successfully completed DU innovation project (2013-2015), and earlier conducted GIAN Courses on "Food Safety, Food Security, and Food Regulations: A Primer" from September 16-20, 2018; "Metabolomics in Food and Nutrition Science Research: From Concepts to Applications" from February 15 - 19, 2019. Moreover, Dr. Dhewa's research is funded by Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Government of India.

## About The University

The Central University of Haryana (established vide Central Universities Act 2009) is the only Central University in the state of Haryana to be funded and regulated by University Grants Commission and Ministry of Human Resource Development (MHRD), Government of India. Central University of Haryana is located at Jant-Pali villages of district Mahendergarh in South Haryana. Mahendergarh is now a part of the extended National Capital Region (NCR) and is 125 kilometers away from Delhi. It is well connected to Delhi through railways and road. At present, the University has 33 Departments of Study, organised under 11 Schools of Study. The University is one of the foremost universities in the country to implement Choice Based Credit System (CBCS) at the Post Graduate level. Department of Nutrition Biology was established under the aegis of School of Interdisciplinary and Applied Life Sciences in the academic year 2015-16. The Department is currently offering M.Sc. and Ph.D. programmes. More details about the University and the Department can be found at: <http://cuh.ac.in>.

### Course Coordinator

#### **Dr. Tejpal Dhewa**

Assistant Professor  
Department of Nutrition Biology  
Central University of Haryana  
Mahendergarh-123031  
Mob: 8826325454  
Email: [tejpal dhewa@cuh.ac.in](mailto:tejpal dhewa@cuh.ac.in)

### Local Coordinator

#### **Prof. Satish Kumar**

Professor & Head  
Department of Biotechnology  
Central University of Haryana  
Mahendergarh-123031  
Mob: 9052456653  
E-mail: [satishk@cuh.ac.in](mailto:satishk@cuh.ac.in)

### How to Participate:

1. Register yourself on GIAN portal of IIT Kharagpur (<http://www.gian.iitkgp.ac.in/>)
2. Choose the course " Food Fortification and Human Health: From Concepts to Public Health Applications " by drop down menu
3. Fill the registration form and pay the course fee by DD/Cheque/RTGS
4. Scan filled registration form & send to Course Coordinator by E-mail.





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**REGISTRATION FORM**

**PERSONAL DETAILS**

Name of the Applicant : \_\_\_\_\_  
 GIAN Application ID : \_\_\_\_\_  
 Date of Birth : \_\_\_\_\_  
 Occupation : \_\_\_\_\_  
 Institution Address : \_\_\_\_\_  
 E-mail : \_\_\_\_\_  
 Mobile Number : \_\_\_\_\_

Paste recent  
 passport size  
 coloured  
 photograph

**REGISTRATION FEE DETAILS**

**By Cheque**

Amount (INR) : \_\_\_\_\_  
 Account Number : \_\_\_\_\_  
 Account Holder's Name : \_\_\_\_\_  
 Cheque No. & Date : \_\_\_\_\_

**By NEFT**

Amount (INR) : \_\_\_\_\_  
 Account Number : \_\_\_\_\_  
 Account Holder's Name : \_\_\_\_\_  
 Transaction ID & Date : \_\_\_\_\_

**By Demand Draft**

Amount: \_\_\_\_\_ DD No. \_\_\_\_\_  
 Bank: \_\_\_\_\_ Date: \_\_\_\_\_

**Note:**

- Registration should be made in favour of **GIAN, Central University of Haryana A/c** via **cheque/online transfer mode** only. (Bank Name & Address: Punjab National Bank, Jant-Pali, Mahendergarh, Pin-123031; Account no. 7824000100009605; MICR 123024106; IFSC PUNB0782400)
- Proof of Registration fee payment should be sent to Dr. Tejpal Dhewa, Department of Nutrition Biology, Central University of Haryana, Mahendergarh - 123031
- The scanned copy of filled Registration form duly signed by the applicant along with the proof of fee submission should also be sent by E-mail to Dr. Tejpal Dhewa (tejpaldhewa@cuh.ac.in)
- In case the candidate requires an accommodation a separate E-mail regarding this should be sent to tejpaldhewa@cuh.ac.in **before September 2, 2019**

**Signature**

**Contact:**

**Dr. Tejpal Dhewa** Course Coordinator; Email: tejpaldhewa@cuh.ac.in ; Mob: 8826325454