

# Topic: Technical Challenges and Solutions for Holistic Development of Communities (In the Aegis of Unnat Bharat Abhiyan)

---

## Overview

With increasing rates of urbanisation and high population growth rates there is a need for robust engineering inputs which acknowledge societal, economic and environmental issues through partnerships with local stakeholders and institutions.

This module will provide engineers an overview of the challenges and complexities of working internationally. The module will discuss theories of development and the challenges associated with infrastructure provision. The focus of this module would be for resource limited settings where the mainstream development paradigms fail to address the gap in basic rural energy, amenities and housing needs.

This module will address the goals of the newly formed Unnat Bharat Abhiyan (2015) formulated by Indian Institute of Technology (IIT) Delhi for the Ministry of Human Resource Development. This scheme promotes design solutions inspired by the vision of transformational change in development processes by leveraging knowledge of academic institutions. This movement enables processes that connect academic institutions with local communities to address development challenges through participatory processes and appropriate technologies. In the next five years this scheme will cover all villages in India.

This module has been an integral part of the M. Sc. in Engineering for International Development at UCL and has been customised to meet the needs of the Centre for Rural Development Technology at IIT Delhi and address the themes of Unnat Bharat Abhiyan.

## Course Outline

This course is scheduled from **14<sup>th</sup> September to 19<sup>th</sup> September, 2017**. Course objectives will be covered in five days which includes lectures and case study sessions.

The primary objectives of the course are as follows:

1. To understand the concept of Unnat Bharat Abhiyan and achieving its objectives through low cost technology development
2. To understand the need of technological interventions in rural areas
3. To explore the use of biogas as next generation sustainable energy source

Modules	<p>Technical Challenges and Solutions for Holistic Development of Communities, 14<sup>th</sup> September to 19<sup>th</sup> September, 2017 at Indian Institute of Technology (IIT), Delhi</p> <p><b>Contents:</b></p> <p><b>14<sup>th</sup> September, 2018 Friday</b></p> <p>Session 1: Celebration of Engineer’s Day and introduction to Unnat Bharat Abhiyan (IIT Delhi)</p> <p>Session 2: Introduction to the module, group projects, appropriate technologies and role of engineering and development, book review list</p> <p>Session 3: Selection of book for review and early discussion. The books on the reading list will include Gram Swaraj, Hind Swaraj, Small is Beautiful.</p> <p><b>15<sup>th</sup> September, 2018, Saturday</b></p> <p>Session 1: Introduction to field case study site and best practices for rural development</p> <p>Session 2: Participatory techniques, monitoring and assessment, stakeholder engagement required to provide appropriate technologies, village development planning</p> <p>Session 3: Ministry led session on policy formulation</p> <p>Tutorial 1: Group work for related project</p> <p><b>17<sup>th</sup> September, 2018, Monday</b></p> <p>Lecture 1: Water and sanitation solutions for rural communities</p> <p>Lecture 2: Renewable energy and SMART solutions</p> <p>Lecture 3: Biogas and potential for rural communities</p> <p>Tutorial 1: Present book review key findings to the group</p> <p><b>18<sup>th</sup> September, 2018, Tuesday</b></p> <p>Lecture 1: Bio-resource based rural energy systems, food processing, energy provision in rural communities’ case studies</p> <p>Lecture 2: Solid waste management in rural communities</p> <p>Lecture 3: Low cost housing criteria, traditional wisdom, governmental programmes</p> <p>Tutorial 3: Time for groups to discuss progress on their group project</p> <p><b>19<sup>th</sup> September 2017, Friday</b></p> <p>Group presentation, feedback and panel discussion with external expert as part of their examination. In this activity they will use all the frameworks and tools covered under the module to present their solution to a real life challenge under the aegis of Unnat Bharat Abhiyan.</p> <p>Lecture 1: Concluding presentation about Unnat Bharat Abhiyan.</p> <p><b>Number of participants for the course will be limited to thirty</b></p>
Who can attend	<ul style="list-style-type: none"> <li>• Executives, engineers and researchers from manufacturing, service and government organizations including R&amp;D laboratories.</li> <li>• Student students at all levels (B. Tech./M. Sc./M. Tech./Ph. D.) or Faculty from reputed academic institutions and technical institutions.</li> </ul>
Registration Procedure	<p>1: <b>GIAN Web Portal Registration:</b> Register in the GIAN portal <a href="http://www.gian.iitkgp.ac.in/GREGN/index">http://www.gian.iitkgp.ac.in/GREGN/index</a>. by paying Rs. 500/- online. Registration to this portal is one time affair and will be valid for lifetime of GIAN. Please note that Course fee is separate.</p>

**Step 2: Course Registration:** Login to the GIAN portal with the registered User ID and Password. Choose for the Course registration option. Select the course titled “Quantitative Microbial Risk Assessment” from the list and click the “Save” option. Confirm your registration by clicking the suitable option. Last date for the registration of this course is

**Step 3: Course Shortlisting:** Candidates will be intimated through email regarding their selection.

**Step 4: Course Fee Remittance:** Once you receive the intimation from the Course Coordinator, the fee (as applicable) need to be paid. The participation fees for taking the course is as follows:

Participants from abroad: US \$400

Industry/ Research Organizations: INR 15000.00

Academic Institutions: INR 5000.00

Students: INR 2000.00

The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges. The participants will be provided with accommodation on payment basis.

The details of fee payment by Electronic Clearing Service/ RTGS in the name of “IITD CEP ACCOUNT”:

Bank Name	State Bank of India
Branch Name & Address	IIT Delhi, Hauz Khas, New Delhi – 110016
IFS Code	SBIN0001077
MICR Code	110002156
Type of Account	Saving Account
Bank Account No.	36819334799
SWIFT Code	SBININBB547
IITD PAN No.	AAATI0393L

**Step 5: Send Registration Form to Course Coordinator:** Fill up the registration form (Given in Page 5 of this brochure), by providing details of the bank transaction.

Send the registration form to the Course coordinator at [kvvijay@rdat.iitd.ernet.in](mailto:kvvijay@rdat.iitd.ernet.in) before 14 August 2018

## The faculty



### Dr. Priti Parikh

Dr. Parikh is an Associate Professor in the Engineering Sciences Faculty at UCL. She created and now leads an innovative MSc programme titled Engineering for International Development. Her research focusses on the provision of infrastructure services in slums and rural communities in South Asia and Africa. She carries out sustainability assessments and monitoring/evaluation of infrastructure projects using participatory techniques and impact assessment tools. She has substantial in-country experience in South Asia, Africa and UK working with local governments and slum communities and has led multi-sectoral projects at both city and community scale.

More details can be found at:

<https://iris.ucl.ac.uk/iris/browse/profile?upi=PPARI97>

### Prof. V.K.Vijay



Virendra Kumar Vijay is working as a Professor at IIT Delhi. Prof. Vijay has successfully developed technology on Biogas Enrichment and bottling for Vehicular Application and transferred it to the industries and field. He also received a patent for it. He is fellow of Institution of Engineers and Life Member of NASI, ISAE, ISTE, SESI and other scientific and professional societies/ bodies. More details can be found at: <http://web.iitd.ac.in/~vkvijay/>

### Dr. Kavya Dashora



Dr. Kavya Dashora is working as Assistant Professor, CRDT, IIT Delhi. The key areas of her expertise include policy level intervention for

### Course Coordinators

Prof. V.K.Vijay

Tel. : (91)-11-26596351 (O),

Fax : (91)-11-26591121

Email: [vkvijay@rdat.iitd.ac.in](mailto:vkvijay@rdat.iitd.ac.in),

[vkvijay14@gmail.com](mailto:vkvijay14@gmail.com)

Dr. Priti Parikh

Tel. : +44(0) 2031084101

Email: [priti.parikh@ucl.ac.uk](mailto:priti.parikh@ucl.ac.uk)

Dr. Kavya Dashora

Tel. 011-26591133

Email: Kavya Dashora

[kavya.Dashora@rdat.iitd.ac.in](mailto:kavya.Dashora@rdat.iitd.ac.in)

[dashorakavya1@gmail.com](mailto:dashorakavya1@gmail.com),

Dr. Vivek Kumar

Phone: 011-25696581

Email: [vivekk@rdat.iitd.ac.in](mailto:vivekk@rdat.iitd.ac.in)

[vivekftpt@gmail.com](mailto:vivekftpt@gmail.com)

food security and low cost technologies, environment and agricultural sustainability , enhancing soil quality , reduction of pesticide residues, , invasive alien species, climate change and plant protection in various countries through national and international projects, etc.

Dr. Kavya joined IIT Delhi in December 2016. More details can be found at: <http://www.iitd.ac.in/content/dr-kavya-dashora-crdt>

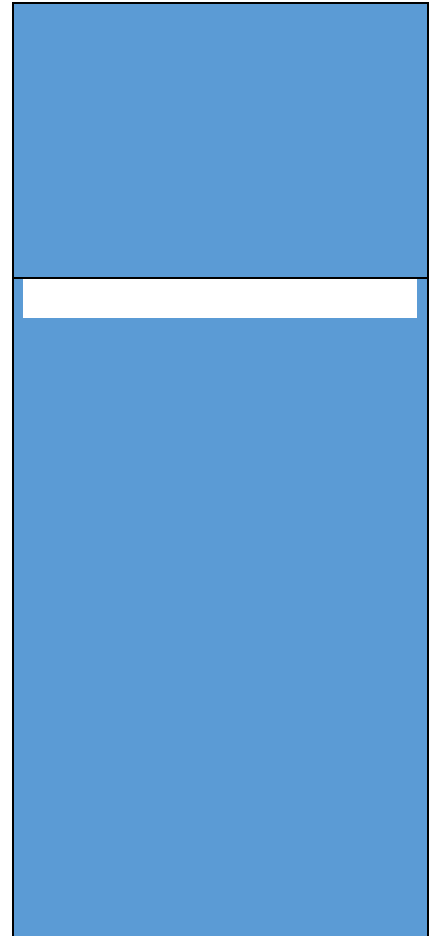
**Dr. Vivek Kumar**



Dr. Vivek is working as Associate Professor, at CRDT, IIT Delhi. With specialisation in Renewable Energy Sources, Biogas Enrichment and Bottling, Bio Energy Applications for Rural Areas, Animal Power, Rural Energy Planning and Management, Rural Industrialization, Sustainable Development and Environment, Food Processing and Post Harvest Technologies, Waste Management Systems, Cow-dung and Urine Based Products (Panchgavya).

More details can be seen at:

<http://wd.eckovation.com/CRDT/faculty/>



**GIAN Course on Technical Challenges and Solutions for Holistic Development of**

**Communities (September 14 to Sept 19, 2018)**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

E-Mail: \_\_\_\_\_

Phone: \_\_\_\_\_

Mobile: \_\_\_\_\_

Fax: \_\_\_\_\_

Fees Payable to "IITD CEP ACCOUNT", SBI, IIT DELHI

Transaction No.: \_\_\_\_\_

Dated: \_\_\_\_\_

Bank Name: \_\_\_\_\_

Rs. \_\_\_\_\_

Signature of Applicant