



REGISTRATION:

1<sup>ST</sup> MAY 2025 - 20<sup>TH</sup>  
JULY 2025

# GFRP BAR REINFORCED CONCRETE CONSTRUCTION : THEORY, ANALYSIS, AND DESIGN

AUGUST 04, 2025 - AUGUST 14, 2025



Teaching Faculty

**PROF. HOTA V.S.  
GANGARAO**



Teaching Faculty &  
Course Coordinator

**PROF. S. SURIYA  
PRAKASH**



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్  
भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad



West Virginia University

## Objective:

- To explore the opportunities of GFRP rebars as a replacement of steel rebars.
- To discuss the properties of GFRP rebars and its advantages in different exposure conditions.
- To explain the design philosophies and codes provisions in use of GFRP rebars.
- To understand the analysis and design of different RC section using GFRP rebars.

## TEACHING FACULTIES

**Prof. Gangarao**, an expert in fiber-reinforced polymer composites has guided more than 250 students, published more than 300 papers, and earned prestigious awards, including IIT Madras Distinguished Alumnus Award (2011). An IIT Madras graduate (1965), he completed his M.S. and Ph.D. in civil engineering at North Carolina University in just four years.



**Prof. Suriya Prakash**, Professor at IIT Hyderabad, is a Ramanujan Fellowship recipient with 15 years of experience. He holds a Ph.D. from Missouri University (2009) and M.S. from IIT Madras (2005). His research focuses on advanced composites, precast housing, and structural rehabilitation.



**For more details scan the QR  
Homepage - CASTCON Lab**



# COURSE CONTENT

## Day -1: INTRODUCTION

**Lecture-1:** Basic Introduction to GFRP rebar, Background, Industry application

**Lecture-2:** Types of fiber, matrices, properties and manufacturing of rebars

## Day -2: PROPERTIES OF GFRP REABAR

**Lecture-1:** Physical and Mechanical properties of GFRP rebars

**Lecture-2:** Characterization of GFRP rebars as per codal provisions

## Day -3: FLEXURAL ANALYSIS AND DESIGN

**Lecture-1:** Design Philosophies, GFRP and Concrete Design Properties, Failure Modes

**Lecture-2:** Serviceability aspects (short and long term deflections, and Crack width)

## Day -4: SHEAR DESIGN

**Lecture-1:** Basics of shear behavior, concrete contribution, GFRP stirrups contribution

**Lecture-2:** Code provisions and design examples.

## Day -5: MEMBERS UNDER AXIAL COMPRESSION AND FLEXURE

**Lecture-1:** Design Philosophy and Pure Axial Compression strength

**Lecture-2:** Development of P-M Interaction curve

## Day -6: DESIGN EXAMPLE TUTORIAL

**Lecture-1:** Complete Analysis and Design of a Beam & Column.

## Day -7: EXAMPLE FOR DESIGN OF TWO WAY SLAB

**Lecture-1:** Complete Analysis and Design of a Two way slab

## Day -8: SPECIALIZED TOPICS

**Lecture-1:** Fire considerations in GFRP RC design

**Lecture-2:** Applications of GFRP rebar in road infrastructure

## Day -9: FACTORY VISIT

**Lecture-1:** Factory visit (GFRP rebar manufacturing)

## Day -10: LAB VISIT

**Lecture-1:** Structural Engineering lab visit at IIT Hyderabad

## **WHO CAN ATTEND**

Executives, engineers, and researchers from manufacturing, service, and government organizations, including R&D laboratories. Students at all levels (BTech/MSc/MTech/PhD) or faculty from reputed academic and technical institutions.

## **ACCOMODATION**

For outstation students and other individuals limited accommodation is available in the campus. Payment shall be made directly to Hostel/Guest House as per actuals.

## **REGISTRATION FEE**

IITH Student - Rs. 1,000

Other Student - Rs. 1,500

Faculty / Scientist - Rs. 10,000

Industry Participants - Rs. 20,000

\* 18% GST will be charged on the above fee except for student from IIT Hyderabad.

## **Venue**

Indian Institute of Technology,  
Hyderabad Kandi, Sangareddy,  
Telangana - 502284

For how to reach click below

## **Location and Route**

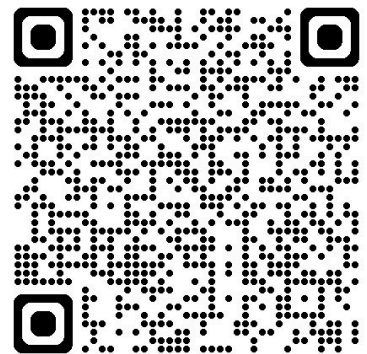
## **Contact**

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**For Registration please  
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