

Who can participate?

This program is open to Faculty, Postgraduate students, Engineers, and researchers from manufacturing, service, and government organizations including R&D laboratories interested in entrepreneurship and startups in Electrical Engineering.

How to Register?

Fill out the Google form using the following link to complete the registration process.
<https://forms.gle/q3qQPbHa1VTyggaz7>

Registration Fee:

Faculty	Rs. 2,000/-
Participants from Industry / Research Organizations	Rs. 3,000/-
Students & Research Scholars	Rs. 1,000/-
Faculty/Scientists/ Industry Participants from abroad	US \$300

Details of NEFT

Account Name	Director Research Account
Account No	62266262236
Bank	State Bank of India
Branch	NIT Branch, Warangal
Branch Code	20149
IFSC Code	SBIN0020149
MICR Code	506002030
SWIFT Code	SBININBBH14

The above fees include all instructional materials, computer use for tutorials, a free internet facility, tea, and snacks. The participants may avail of single-bedded shared accommodation and food (breakfast, lunch, and dinner) with an additional payment.

Note: For confirmation of registration, the proof of payment (a scanned copy of the Demand Draft/NEFT transaction details) along with the registration form) are to be e-mailed to kiruba81@nitw.ac.in; Candidates registering early will be given preference in the shortlisting process; For any queries regarding registration for the course, please contact the course coordinator.

About GIAN Course:

Govt. of India launched the *Global Initiative of Academic Networks (GIAN)* in Higher Education to tap the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

About the Institute and Warangal:

National Institute of Technology Warangal (NITW), was established in 1959, as the first in the chain of the then Regional Engineering Colleges. It has now become one of the premier STEM institutes in India and is ranked among the top technical education institutions. With 14 academic departments, NITW offers ten undergraduate and 31 post-graduate programmes besides doctoral programmes. With about 6500 students across the country and about 500 international students, it is a fully residential campus sprawling over 250 acres with excellent infrastructure.

About the Department:

The Department of Electrical Engineering is one of the oldest departments of the National Institute of Technology, Warangal (NITW). Established as one of the three departments of the Institute, at its inception in 1959, the department has been actively engaged in teaching and research in diverse fields of Electrical Engineering. With excellent faculty, the Department of Electrical Engineering offers one undergraduate and four graduate programs in Power Electronics & Drives, Power Systems, Smart Electric Grid, and Control & Automation besides the doctoral (Ph.D) program. The department has well-equipped state-of-the-art laboratories to augment the coursework and support research.

How to reach NITW?

Nearby airport: Rajiv Gandhi International Airport (3 hours journey from NIT Warangal)

Nearby railway station:

Kazipet (KZJ) 3 km from NIT Warangal

Warangal (WL) 12 km from NIT Warangal



Five Days GIAN Course on

**ENTREPRENEURSHIP AND STARTUPS IN
ELECTRICAL ENGINEERING**
(Course ID:2412130)

July 07-11, 2025

Call for Registration and Participation

International Faculty

Dr. Krishnan Ramu, Life Fellow IEEE
Professor Emeritus,
Department of Electrical & Computer
Engineering,
Virginia Tech, Blacksburg, VA 24060
USA

Course Coordinators

Prof. V.T. Somasekhara
Dr. A. Kirubakaran

Organized by

Department of Electrical Engineering
National Institute of Technology
Warangal
Warangal-506 004, Telangana, India

❖ Overview of the Course:

Future industrial development, employment opportunities, and the national economy are profoundly influenced by entrepreneurial activities. In general, students of engineering are not exposed to entrepreneurship in their bachelor's, master's, and doctoral curricula. This is equally true with the faculty; they too are unfamiliar with the prevailing practices pertinent to entrepreneurship. To bridge this gap, this course intends to impart systematic exposure to all aspects of entrepreneurship concerning the field of electrical engineering. In particular, this course emphasizes entrepreneurial opportunities in power semiconductor devices, power electronics, electrical machines, and drive systems as they immensely affect the employment and economy. While familiarizing the broad topic of entrepreneurship to its attendees, this course discusses the role of venture capital firms, the emergence of startups, their growth, and successes. Knowledge gained from these lectures will be useful to the participants to start startups in India in the area of electrical engineering.

With this backdrop, the course is focused on four constituent parts. They are: Introduction to entrepreneurship, Power devices, Power electronics, and Electric motor drives. The course is intended to broaden the vision and an in-depth understanding of researchers, and practicing engineers in power electronics and electric motor drives by showing them how the impact of newer industrial requirements and market demands drive innovation, business, and hence the emergence of startups with concrete current examples.

❖ Course Objectives:

The primary objectives of the course are as follows:

- (i) Familiarize the basics of entrepreneurship particularly from the engineers' perspective to the participants and bring business concepts in a way that they can appreciate and use in the future in their careers.
- (ii) Educate on starting engineering companies, covering legal registration, developing central business ideas, creating business plans, conducting market surveys, and forming management strategies. Include guidance on fundraising, building cohesive teams, marketing, sales, product development, testing to standards

(including UL certification), and understanding both success paths and potential failure rates for balanced entrepreneurship insight.

- (iii) Introducing newer wide bandgap power devices such as silicon carbide and gallium nitride devices, theory of operation, their characteristics, and how they change applications field resulting in some products with examples.
- (iv) Resulting in entrepreneurship efforts from the wide bandgap power devices and the presentation of a large spectrum of startups in them.
- (v) A method to derive valuable lessons from the study of various startups by using a methodology that is developed and presented in the course to benefit the participants and application of that methodology to power devices, power electronics, and motor drives startups.
- (vi) Relate power electronics and motor drives studies from undergraduate courses to real-world startup technologies in these domains, showing that the knowledge gap for launching startups is manageable. Illustrate with examples from numerous startups, emphasizing that students can confidently apply their expertise to entrepreneurial ventures.

❖ International Faculty:



R. Krishnan is a professor of electrical and computer engineering at Virginia Tech, Blacksburg, VA and directs the Center for Rapid Transit Systems in linear and rotating motor drives. He is the author of: (i) Electric Motor Drives (Prentice Hall), Feb 2001, its Chinese translation (Pearson Education Taiwan) in 2002, Indian Edition (Prentice Hall of India)

in 2002 and International Edition (Prentice Hall International Edition) in 2001, (ii) Switched Reluctance Motor Drives (CRC Press), June 2001, (iii) Permanent Magnet Synchronous and Brushless DC Motor Drives (CRC Press), Sept 2009 and (iv) co-editor and co-author of Control in Power Electronics (Academic Press), Aug 2002.

Dr. Krishnan has been granted seven US patents and many are pending in the US, Europe, and other countries. His inventions have been prominently featured in public media including radio, TV, and newspapers such as The Wall Street Journal. He rendered consultancy services to 18 companies in the USA. He has developed

and delivered short courses for academia and industry on vector-controlled induction, permanent magnet synchronous and brushless DC, switched reluctance, and linear electric motor drive systems.

Krishnan is a recipient of best paper prize awards from the IEEE Industry Applications Society's Industrial Drives Committee (5 awards) and Electric Machines Committee (1 award). In addition, he received the first prize from IEEE Transactions on Industry Applications for his paper and the 2007 Best Paper Award from IEEE Industrial Electronics Magazine. His co-edited book Control in Power Electronics won the best book award from the Ministry of Education and Sport, Poland, in 2003. He was awarded the IEEE Industrial Electronics Society's Dr. Eugene-Mittelman Achievement Award for Outstanding Technical Contributions to the field of Industrial Electronics in 2003.

Prof. Krishnan is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Industrial Electronics Society. He is an elected Senior AdCom Member of the IEEE Industrial Electronics Society and served as its Vice President (Publications) from 2002 to 2005. He served as the General Chair of the 2003 IEEE Industrial Electronics Conference, Roanoke, VA, USA, and as one of three General Co-Chairs of the IEEE IES' ICIT 2006 in Mumbai, India. He has delivered many keynote speeches at IEEE conferences.

Krishnan and some of his graduate scholars' inventions constituted founding technologies for three motor drive companies. He is the founder of (i) Panaephase Technologies, LLC in 2002 which went through a successful merger and acquisition (M&A) in 2007, and (ii) Ramu Inc., in 2008 specializing in high volume variable speed motor drives for home appliances, air conditioners, hand tools, wind power and automotive applications. He is also a co-founder of TransNetics, LLC specializing in intellectual property for linear motor drives.

For any queries, please contact

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Last date for registration: 15 June 2025