

23rd One-Week Short-Term Training Program

On

**Advanced Engineering Optimization through
Intelligent Techniques (AEOTIT)**

(ONLINE mode)

26-30 September 2022

Coordinator

Dr. R. Venkata Rao

Professor (HAG)

Call for Participation



Organized by

Department of Mechanical Engineering

Sardar Vallabhbhai National Institute of Technology (SV NIT)

(An Institute of National Importance of Govt. of India)

Surat – 395 007

Gujarat State, India

About the Institute:

The institute was initially established as Sardar Vallabhbhai Regional College of Engineering & Technology in 1961 and was upgraded as a National Institute of Technology on 4th October, 2002. SVNIT is one of the pioneering engineering institutions of the country which has contributed many outstanding engineers in India & abroad. It is conducting six UG programs, nineteen PG programs (in addition to three integrated M.Sc. programs) and a Ph.D. program in all disciplines of engineering and applied sciences. Special attention is given to interdisciplinary research. The institute has an excellent placement record with a number of top ranking companies visiting the campus every year.

About the Department:

The Department of Mechanical Engineering came into existence in the year 1961. The department has qualified and dedicated faculty members with the specialization in various areas. At present the department is conducting a UG program in Mechanical Engineering, five PG programs (Mechanical Engineering, Turbo-machines, Manufacturing Engineering, CAD/CAM, and Thermal Systems Design) and a research program leading to Ph.D. degree.

About Surat:

Surat is a top ranking industrial city of the country with clean wide roads. It is well known worldwide for textiles, Zari and Diamond industries. Several large scale industries and establishments are located in the city. Surat is situated on the main western railway route between Vadodara and Mumbai. The institute is located at Ichchanath on Surat-Dumas road at a distance of about 10 Km from Surat railway station.

About the Training Program:

The 23rd one-week short-term training program on '[Advanced Engineering Optimization through Intelligent Techniques](#)' is scheduled to be held [during 26-30 September 2022 in ONLINE mode](#). The main objective of this training program is to promote the application of optimization methods in the engineering sciences. The training program provides a forum in which the participants obtain information about recent advances of optimization sciences and learn about the needs of engineering sciences and successful applications of optimization methods. It tries to close the gap between optimization theory and the practice of engineering.

The proposed training program presents many advanced methods of optimization of relevance to applications in engineering sciences. It also highlights successful applications of optimization in various areas and contains sessions for the participants without a strong background in the field, which offer material aimed at educating potential users of optimization methodologies.

Eligibility for Participation:

The training program is open to **engineering college and polytechnic teachers and research scholars (M.Tech. and Ph.D.)**. As the training program is of interdisciplinary nature, **engineering faculty members and research scholars of Civil, Mechanical, Electrical, Electronics, Computer, Applied Mechanics, and Chemical engineering disciplines can attend the program. Faculty members with Science and Mathematics background can also attend.** Industry personnel can also attend this training program. The candidates who had already attended this program on previous occasions are NOT eligible to apply.

Topics to be Covered:

- Constrained and unconstrained deterministic linear and non-linear programming methods
- Genetic algorithm (GA), Particle swarm optimization (PSO), Artificial Bee Colony (ABC), NSGA-II, GWO, Hybrid methods of optimization, etc.
- Teaching-learning-based optimization (TLBO) algorithm (developed by the Coordinator in 2011)
- Jaya algorithm and its versions (developed by the Coordinator in 2016)
- Rao algorithms (developed by the Coordinator in 2020)
- R-method (developed by the Coordinator in 2021)
- Multi-objective optimization
- Fuzzy concept in optimization
- Application of optimization techniques in deep neural networks
- Design of Experiments, Taguchi's Methods, Response Surface Methodology
- Multi-attribute decision making methods such as AHP, TOPSIS, PROMETHEE, SAW, WPM, ELECTRE, Grey Relational Analysis, etc.
- Various interdisciplinary real world case studies
- Guidelines on how to write research papers for publication in reputed international journals

Registration Fee:

The registration fee is Rs. 1500 + 18%GST (i.e., a total of Rs. 1770) for faculty members, research scholars (M.Tech. and Ph.D.) and those from industry. The non-refundable registration fees should be sent through **Netbanking**.

Bank Account Name: Director, SVNIT-CCE

SBI Account No.: 37030749143

Bank Name: State Bank of India

IFCS Code: SBIN0003320

Branch: SVRCET Branch, Ichchanath, Surat-395007, Gujarat.

While paying through the netbanking, the purpose is to be written as "AEOTIT Registration Fees" under "Others" category.

Payment can also be made using the following QR code: <https://www.svnit.ac.in/Data/cce/directorsvnitcce@sbi.pdf>

Program Faculty:

The coordinator and few senior faculty members of SVNIT Surat will impart the training. This program was conducted by the Coordinator 22 times in the past and the program was well appreciated.

Last Date of Registration:

The candidates can send their signed and scanned Pre-Registration Forms to the Coordinator through e-mail (aeotit@gmail.com or raoravipudi@gmail.com) on or before 23rd September 2022. The candidates will be informed the decision about their selection on the same day of receiving the pre-registration form. If selected, then the candidate can make payment through netbanking and send the filled Registration Form to aeotit@gmail.com or raoravipudi@gmail.com along with the scanned copy of payment proof. If not selected, the candidate should not send the registration form and the payment, as the institute will not be responsible for refunding the amount. The candidates selected for the program have to attend all sessions.

