

AICTE-ISTE Sponsored One Week INDUCTION/REFRESHER PROGRAMME – 2021-22

On

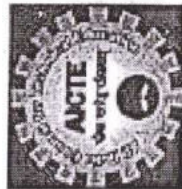
“OPTIMIZATION in COMMUNICATION ENGINEERING”

DECEMBER 22-29, 2021

Organized by

Department of Electronics and Communication Engineering

G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE (For Women)



Objectives:

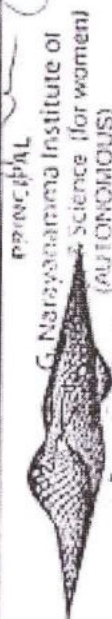


- Exposure to the basic concepts of mathematics to formulate an optimization problem.
- Acquire a multi-objective problem through weighted and constrained methods.
- Exploit elaborated the evolutionary algorithms and steps involved with special emphasis on their application in the field of communications.
- Apply the latest development in convex optimization to the design and analysis of communication systems.
- Inculcate and promote research interest in applying optimization techniques in solving problems of Engineering and Technology.

FEE: No registration fee is charged for the programme, since the program is fully sponsored by AICTE-ISTE, New Delhi.

ONLINE REGISTRATION: To join this Online FDP, you are requested to register by clicking the registration link:

<https://forms.gle/u7KFMs63LUGiM6q58>



G. Narayanaamma Institute of Technology & Science (for women) (AUTONOMOUS) Shaikpet, Hyderabad - 500 104

CHIEF PATRONS

Sri. P. SUBBA REDDY, Chairman

Smt. G. SRIVIDYA REDDY, Secretary

PATRON

Dr. K. RAMESH REDDY, Principal

PROGRAMME ADVISORS

Dr. P.V.D. SOMA SEKHAR RAO, Professor,
Dean Academics

Dr. P. SUDHAKAR RAO, Professor, Dean R&D

CONVENER

Dr. B. VENKATESHULU, Professor, HOD-ECE

COORDINATOR

Dr. C. PADMAJA, Assistant Professor, ECE

CHIEF GUESTS

Col. B Venkat Director (Faculty Development),
AICTE

AIGTE

Prof. Vijay D. Vaidya, Executive Secretary, ISTE

ADDRESS FOR CORRESPONDENCE:

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Important Dates:

Last Date of Registration: 19th Dec, 2021

Announcement of selected candidates: 20th Dec, 2021

Schedule of the event: 22nd Dec, 2021



AICTE-ISTE INDUCTION/REFRESHER PROGRAMMES (Online)

ISTE/AICTE-ISTE FDP /2021-22

Title: OPTIMIZATION in COMMUNICATION ENGINEERING



Schedule Plan:

From: December 22nd to December 29th, 2021

Date	Session I (10AM-11.30AM)	11.30AM to 11.45AM	Session II (11.45AM-1.15PM)	1.15PM to 1.55PM	Session III (2PM-3.30PM)
22-12-2021 (Wednesday)	Inaugural function Chief Guests: Col. B Venkat Director Faculty Development Cell, AICTE Prof. Vijay D. Vaidya Executive Secretary, ISTE		Col. B Venkat Director Faculty Development, AICTE National education policy 2020		Dr. Chella Sastry, IITB Introduction to properties of Vectors, Norms, Positive Semi-Definite matrices, Sparsity promoting optimization techniques.
23-12-2021 (Thursday)	Dr. Rajib Kumar Bhattacharjya, IIT Guwahati Linear Programming, Constrained & Unconstrained Optimization Techniques		Dr. S. J. Nanda MNIT, Jaipur Fundamentals of Optimization		Dr. P. Ubaidulla, IITB Convex Optimization for Communications
24-12-2021 (Friday)	Dr. Jagdish Chand Bansal, South Asian University, New Delhi Multi-objective Optimization	T E A	Amitav Panda, Solution Specialist, Nokia Network Particle Swarm Optimization, Differential Evolution	L U N C H	Prof. Rajesh Kumar, MNIT, Jaipur Genetic Algorithm and Bio inspired algorithms
27-12-2021 (Monday)	Dr. Urvasi P. Shukla, Bannurthali Vidyapeeth Social spider optimization, Grey Wolf optimization	B R E A K	Dr. C. Padmaja, GNITS Implementation of using Excel Solver and MATLAB Optimization Toolbox	B R E A K	Dr. Balwinder S. Dhaliwal, NITTR Chandigarh Design of Linear Phase FIR Low Pass Filter Using Mutation-Based Particle Swarms Optimization Technique
28-12-2021 (Tuesday)	Sitanshu Sekhar Sahu Birla Institute of Technology Mesra, Ranchi Optimization to System Identification		Dr. Ravi Kumar Jatoth NITW Application to Channel Equalization using Bio-inspired Algorithm		Dr. Satish Kumar, Associate Professor NIT Jamshedpur Numerical Optimization and Applications with Lab classes
29-12-2021 (Wednesday)	Dr. Neeraj Sharma School of Biomedical Engineering IIT BHU Application in the area of biomedical engineering		Dr. N.S. Murthy, Vasavi College of Engg., Hyderabad Efficient Management of Research and Stress through Yoga		Online Quiz (2PM-3PM) Feedback Valediction (3PM-4PM)

Dr. C. Padmaja
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Dr. B. Venkateshulu
HOD-ECE
 Dr. B. Venkateshulu
 Shaikpet, Hyderabad - 500 104

Dr. K. Ramesh Reddy
PRINCIPAL
 Dr. K. Ramesh Reddy
 Shaikpet, Hyderabad - 500 104

ABOUT THE INSTITUTE

G.Narayanamma Institute of Technology & Science, a leading Engineering college in Hyderabad for women, was founded by late Sri G.Pulla Reddy garu in 1997, with an objective of providing excellent learning facilities for women to pursue education in Engineering since two decades. The aim is to promote Technical Education among women to enhance and build-up a new generation of thinkers, innovators and planners in the realms of Science and Technology. GNITS received UGC autonomous status for 10 years from 2018 and is affiliated to Jawaharlal Nehru Technological University Hyderabad. It is approved by All India Council for Technical Education, accredited by NAAC & NBA (AICTE) and ISO 9001:2015 Certified Institution. "AICTE Internship Award" by AICTE in August, 2018. "National Employability Award" 3 times in a row for being among top colleges in the State from AMCAT from 2017 to 2019.

ABOUT DEPARTMENT

The department of ECE was started in the year 1997 with an intake of 60 students. The intake was increased to 180 students. A Separate block is provided to develop the department as a centre of excellence. The department has established laboratories which are fully equipped with test & measuring equipment and trainers specially designed for lab work. The department has R & D Equipment such as 2x2 MIMO, Nexys 4 A7 FPGA boards, XILINX Vivado system edition 2018.1 version, Net'sm, HFSS, LABVIEW, MATLAB, Mentor graphics HEPI and 2, LIDAR, RFID Reader, ADS 1198 kit for ECG, EKG interface board, Smart Vision Camera, GSM/GPRS module, Node MCU, Ultra sonic & MQ Sensor, CHIPKIT Microcontroller etc of worth 12 Lakhs are available. The Alumnae are well-placed in reputed organizations like INFOSYS, Micron, Deloitte, NCR, Accenture FSE, Quantum Analytics, Ford, Optum, Virtusa, ADP, LVL7, Value labs and

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ABOUT AICTE-ISTE INDUCTION/REFRESHER PROGRAMMES

All India Council for Technical Education (AICTE) was set-up in November 1945 as a national level Apex Advisory Body to conduct survey on the facilities on technical education and to promote development in the country in a coordinated and integrated manner. The Indian Society for Technical Education (ISTE) is the leading National Professional Non-Profit making Society for the Technical Education System in our country with the motto of Career Development of Teachers and Personality Development of Students and overall development of our Technical Education System.

The major objective of the AICTE-ISTE Induction/Refresher Programme are:

- Providing quality training programmes to teachers and administrators of technical institutions to update their knowledge and skills in their fields of activity.
- To assist and contribute in the production and development of top quality professional engineers and technicians needed by the industry and other organizations.

OVERVIEW OF THE COURSE

The Induction/Refresher programme is to provide a platform for the participants to learn and share the knowledge through the lecture delivered by the eminent speakers and discussions with the practitioners. It is intended to describe the systematic approach of optimization, which includes problem definition, its mathematical formulation, selection of a suitable optimization method, and detailed analysis of the solution obtained. The participants will not only exposed to traditional theoretical developments and natured inspired techniques in the field of optimization but also learn about the practical applications of optimization techniques in diverse areas. Both theories and practices of optimization techniques will be covered during the course of the workshop.

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OBJECTIVES OF THE COURSE

1. Exposure to the basic concepts of mathematics formulate an optimization problem.
2. Inculcate and promote research interest in applying optimization techniques in solving problems Engineering and Technology.
3. Acquire a multi-objective problem through weighted and constrained methods.
4. Exploit elaborated the evolutionary algorithms and steps involved with special emphasis on the application in the field of communications.
5. Apply the latest development in convex optimization to the design and analysis communication systems
6. To promote quality teaching and research project in the field of Optimization.

TOPICS TO BE COVERED

- Introduction to properties of Vectors, Norm
- Positive Semi-Definite matrices, Sparse promoting optimization techniques
- Linear Programming, Constrained
- Unconstrained Optimization Techniques
- Fundamentals of Optimization: Optimization
- Clustering & Classification
- Convex optimization for communications
- Multi-objective Optimization
- Particle Swarm Optimization, Differential Evolution
- Genetic Algorithm and Bio inspired algorithms
- Social spider optimization, grey wolf optimizer
- Implementation of using Excel Solver and MATLAB Optimization Toolbox
- Design of Linear Phase FIR Low Pass Filter Using Mutation-Based Particle Swarm Optimization Technique
- Optimization to System Identification
- Application to Channel Equalization using Bit inspired Algorithm
- Numerical Optimization and Applications with Lab classes
- Application in the area of biomedical engineering



Certificate



This is to certify that **SUJATHA ALLIPURAM** has successfully completed the AICTE-ISTE approved Orientation/Refresher Programme on **“Optimization in Communication Engineering”** held during **22.12.2021** to **29.12.2021** organized by **G. Narayanamma Institute of Technology and Science (For Women), Shaikpet, Hyderabad, Telangana.**

Director (FDC)
AICTE, ND

Executive Secretary
ISTE, ND

Program Coordinator
GNITS, Hyderabad

Principal
GNITS, Hyderabad

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