

KKR&KSR Institute of Technology and Sciences Vinjanampadu, Guntur, Andhra Pradesh-522017

Approved by AICTE, New Delhi and Permanent Affiliation from JNTUK, Kakinada
Accredited with "A" Grade by NAAC & NBA Accreditation Status for 4 UG (CSE, ECE, EEE, ME) Programs

MHRD- IIC Report Format

1. Objective of the Event:

The objective of this event is to learn the fundamental concept of signal processing and optimization technique in various real time applications in Digital signal processing.

2. About the Program/Event:

This programme was initiated by Ministry of Electronics & Information Technology (MeitY), Government of India under NKN Course series through online stream. The following topics have covered in both theoretical as well as practical through MATLAB software.

S.No.	Module Name	Topics
1.	Adaptive Signal Processing	Fundamentals of Signal Processing, Introduction to Adaptive Systems, Minimum Mean-Square Error, Wiener-Hopf Equation, Error Performance Surface, LMS algorithm, Convergence of weight vector, Learning Curve, Least Mean Square(LMS) Algorithm, Recursive Least Square (RLS) Algorithm, Direct Modelling or System Identification, Inverse Adaptive Modelling (Equalization), Adaptive Noise Cancellation, Adaptive filters for time series and stock market prediction, Biomedical Applications
2.	Applications of Transformations to Signal	Fourier Transform, Short Time Fourier Transform, Multi-resolution Analysis, Wavelet Transform, Discrete Wavelet Transform (DWT), Sub-band Coding for DWT, DWT for Image processing Applications, Stockwell Transform and its Applications
3.	Classical Optimization and Unsupervised Learning Techniques	Basics of Optimization, Constrained Optimization, Linear Programming, Graphical Method, Dual Problems, Classification and Clustering, K-Means Clustering, Density Based Approaches for Clustering Applications
4.	Evolutionary and Nature Inspired Optimization Techniques	Introduction to Nature Inspired Optimization, Genetic Algorithms, Particle Swarm Optimization and its variants, Ant Colony Optimization, Honey Bee Optimization, Gray Wolf Optimization, Spider-Monkey Optimization, Social Spider Optimization and their applications.
5.	Multi-Objective Optimization Techniques	Introduction to Multi-Objective Optimization, Non-dominated Sorted Genetic Algorithm (NSGA-II), Multi-Objective Particle Swarm Optimization (MOPSO) Applications.

3. Details of External Participants (If any):

R.Ramasamy	Vel tech University Chennai, Tamilnadu	8489443531	rramasamy2014@gmail.com
Vinoth Kumar C N S	SRM University, Chennai, Tamilnadu	9944599129	vinothcns@gmail.com
Parthiban N	SRM University, Chennai, Tamilnadu	9941920458	parthiban.n@ktr.srmuniv.ac.in
Farithkhan.A	Vel tech University Chennai, Tamilnadu	9790688583	farithkhan@gmail.com
Dr. D. Vijayakumar	CMR Engineering college, Hyderabad, Telungana	9500524075	vkumarin@gmail.com

S Janarthanan	Latha Mathavan Engineering college, Madurai, Tamilnadu	9944041249	janarthanans83@gmail.com
Anandan M.	Latha Mathavan Engineering college, Madurai, Tamilnadu	9842166385	manandan75@gmail.com

4. Details of Resource Persons :

Prof. Ganapati Panda, FNAE, FNASc, Former Dy. Director and Head, Prof. Emeritus, School of Electrical Sciences, IIT Bhubaneswar

Prof. Debashis Ghosh, Professor and Head, Dept. of Electronics & Comm. Engineering, IIT Roorkee

Prof. Bijaya Ketan Panigrahi, Professor, Dept. of Electrical Engineering, IIT Delhi

Prof. Rajesh Kumar, Professor and Head, Dept. of Electrical Engineering, MNIT Jaipur

Dr. Nithin V. George, Associate Professor, Dept. of Electrical Engineering, IIT Gandhinagar

Dr. Pyari Mohan Pradhan, Assistant Professor, Dept. of Electronics & Comm. Engineering, IIT Roorkee

Dr. Satyasai Jagannath Nanda, Assistant Professor, Dept. of Electronics & Comm. Engineering, MNIT Jaipur

5. Venue of the Event: ECAD Lab, KKR and KSR Institute of Technology, Guntur, AP

6. Date & Time of the Event 03-06-2019 to 07-06-2019, 9 AM to 6 PM

Date	9-11AM	11-11.15	11.15-1.15	1.15-1.45	1.45-3.45	3.45-4.00	4.00-6.00
03-06-2019 (Monday)	FDP Inauguration Prof. G. Panda, IIT Bhubaneswar (Module-1)	Tea Break	Dr. N. V. George IIT Gandhinagar (Module-1)	Lunch Break	Lab-1	Tea Break	Lab-2
04-06-2019 (Tuesday)	Prof. G. Panda, IIT Bhubaneswar (Module-1)		Dr. P. M. Pradhan IIT Roorkee (Module-2)		Lab-3		Lab-4
05-06-2019 (Wednesday)	Prof. G. Panda IIT Bhubaneswar (Module-4)		Prof. Debashis Ghosh IIT Roorkee (Module-2)		Lab-5		Lab-6
06-06-2019 (Thursday)	Prof. B. K. Panigrahi IIT Delhi (Module-4)		Dr. S. J. Nanda MNIT Jaipur (Module 3)		Lab-7		Lab-8 QUIZ
07-06-2019 (Friday)	Prof. Rajesh Kumar MNIT Jaipur (Module-4)		Dr. S. J. Nanda MNIT Jaipur (Module 5)		Lab-9		Lab-10 FDP Feedback and Valedictory

7. No of Students participated: NIL

8. Year, Branch and Section of Students: NIL

9. No of Faculties participated:46

10. One Faculty Member Feed Back:



Course Feedback Form

Dear Participant:

- Please respond to each statement carefully. Your independent and well-considered responses will contribute to the Academy's ongoing efforts to improve the teaching-learning environment.
- Detailed comments at appropriate spaces are welcome.

Name of Participant:	SARALA PATCHALA		
Course Title:	Advancement in signal processing & optimization techniques	Date:	7/6/19
		Year & Venue:	2019: KITS, GUNTUR

Put Tick Mark (✓) in the appropriate box.

(A) About the Course:	Unable to Judge (-)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. Overall, the instruction was excellent.						✓
2. The concepts were explained with clarity.					✓	
3. Questions and discussions were encouraged.				✓		
4. Allotted number of classes was held.						✓
5. Evaluation was done regularly and feedback was given.					✓	

(B) About the Hands-on:	Unable to Judge (-)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. The course was highly enjoyable.					✓	
2. The content of the course was appropriate.						✓
3. Text/Reference materials were appropriate for the course.					✓	

Please provide your descriptive comments.

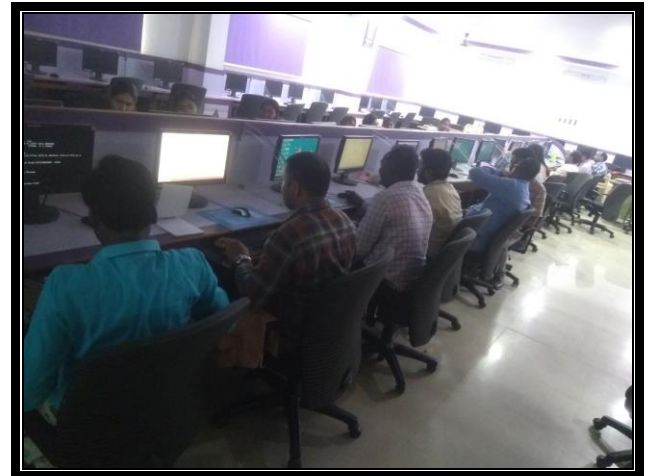
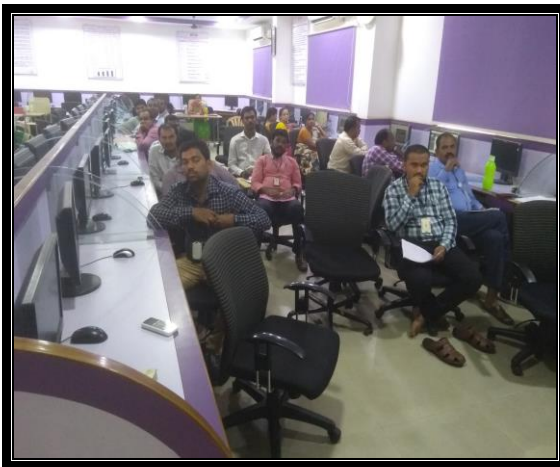
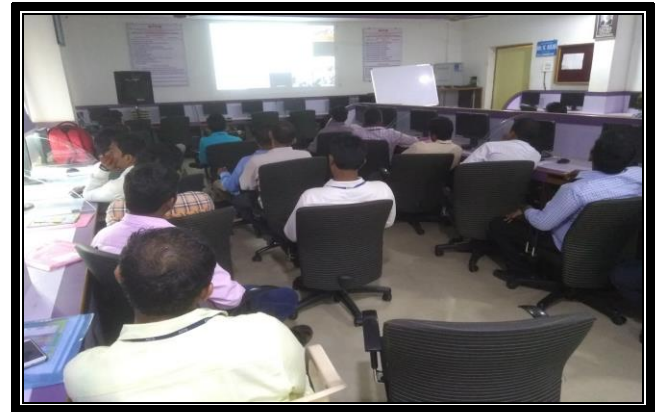
About the Course	
Strong Points	Weak Points
<p>The classes optimization techniques clustering, LMS, RLS Algorithms etc explained very clear. Dr. N V. George IIE Gandhinagar SSN module was very excellent smooth way.</p>	-
Source of Information about this Course	


 Signature of Course Coordinator

<http://eict.iitg.ac.in/UpcomingSummerCourses19.html>

<p>Not secure eict.iitg.ac.in/UpcomingSummerCourses19.html</p>				<p>Email: balarfma@iitr.ac.in M:7078627392, 01332-286457</p>	
5	<p>Advancements in Signal Processing and Optimization Techniques 03 - 07 June, 2019</p> <p>New Last Date of registration is extended to 30/05/2019.</p>	<p>MNIT Jaipur Dr. S. J. Nanda Email: snanda.ece@mnit.ac.in Mobile: 9549654237</p>	<p>IIT Roorkee Co-Principal Coordinator Dr. P. M. Pradhan Email: pmpradhan.fec@iitr.ac.in, eict@iitr.ac.in Mobile: 7078627392</p>	<p>IIT Guwahati : Dr. Ribhu Email: ribhufec@iitg.ac.in M: 9634274438 L:+91-361-258-3475</p> <p>IIITDM Jabalpur : Dr. Prabin Padhy Email: prabin16@iiitdmj.ac.in Mobile: 9425155297</p> <p>MNIT Jaipur : Dr. S. J. Nanda/Dr. Rajendra Mitharwal Email: snanda.ece@mnit.ac.in Mobile: 9549654237</p> <p>NIT Patna :</p>	<p>Common Brochure</p> <p>Application Form(On-line)</p> <p>On-Spot registration is also available</p>

12. Event Photographs from different angles covering all the students, Banner and speaker (Include 4 or 6 photographs in the Document and send those photos





13. 1- 2 minutes video of the event (Drive Link Only)

14. Benefit in terms of learning/Skill/Knowledge obtained *:

Optimization tools have been recognized as extremely useful techniques in helping with addressing a wide range of engineering challenges. This FDP on Advancements in signal processing and optimization Techniques aims at providing a platform to introduce optimization techniques and a variety of successful applications in communications and signal processing. The following optimization application has been discussed in this FDP.

Adaptive Signal Processing

Applications of Transformations to signal

Classical Optimization and Unsupervised Learning Techniques

Evolutionary and Nature Inspired Optimization Techniques

Multi-Objective Optimization Techniques

This FDP provides a comprehensive survey on the applications of signal processing techniques in Optimization problems. Furthermore, this FDP also outlines some future research directions related to applications of signal processing in Optimization technique.

15. Expenditure Amount (If any) 71000

16. Remarks:

17. Experiences and Output of the Session

Signal processing may be applied to sensor data, images, sound or electromagnetic radiation. Using applied mathematics and electrical engineering concepts, the signals, perhaps spatially varying, are analyzed with measurements over time. This FDP has given more research idea towards signal processing and optimization techniques for real time applications of digital signal processing.. Most of recent topics were discussed by eminent professors from IIT and NIT. At the end of the workshop, each participant is expected to have enhanced his/her knowledge on Optimization techniques and its application in the areas of signal processing, Sensor, Bio-medical applications and rapid prototyping.

The FDP brought together researchers in this area in order to identify

the new opportunities in Digital Signal Processing arising from:

- developments in other disciplines, such as mathematical sciences, that could be applied to DSP
- development in technologies that open up new application domains but whose deployment depends on novel signal processing solutions
- the strategies and priorities for researchers addressing the civil aspects of DSP, including meeting development opportunities offered by the Global Challenge Research Fund.

This FDP provide a venue for discussing latest scientific results on application of signal processing for wireless and multimedia communications. It is directed at both academic researchers and practicing engineers.