REPORT ON

5-DAYS FACULTY DEVELOPMENT PROGRAMME ON

"FUNDAMENTALS & APPLICATIONS OF BASIC SIGNAL PROCESSING"

VENUE: ECE Seminar Hall (offline)

DATE: 18th to 22th October 2022

TIMINGS: 9:30 AM to 3:30 PM

NUMBER OF PARTICIPANTS: 61

ORGANIZING CHAIR: Dr. GT Raju, Principal, SJCIT, Chickballapur

CONVENOR: Dr .B N Shobha, Prof & Head, Department of Electronics & Communication

Engineering.

COORDINATORS: Dr Nagendra Kumar M, Professor, Dept. of ECE

Dr S Bhargavi, Professor, Dept. of ECE

TECHNICALCOMMITTEE:

Dr. Bhaskar S, Professor, Dept. of ECE

Dr. Levy M, Professor, Dept. of ECE

Dr. Sudhir P, Assoc. Professor, Dept. of ECE

Dr. Rangaswamy C, Assoc. Professor, Dept. of ECE

Dr. Pranjala Tiwari, Assoc. Professor, Dept. of ECE

Prof. Shwetha V, Asst. Professor, Dept. of ECE

Prof. Manjula K, Asst. Professor, Dept. of ECE

Prof. Ravi M V, Asst. Professor, Dept. of ECE

Prof. Madhukar S, Asst. Professor, Dept. of ECE

ORGANIZING COMMITTEE:

Dr. Narayanappa C K, Prof. & HOD, Dept. of ML, MSRIT

Dr. Manjunath Reddy, Prof. & HOD, Dept. of ECE, GAT

Dr. M B Anandaraju, Prof. & HOD, Dept. of ECE, BGSIT

Dr. Manjunath R, Prof. & HOD, Dept. of ECE, DSATM

Dr. Mahesh P K, Prof. & HOD, Dept. of ECE, ATME, Mysore

Dr. P M Shiva Kumar, Prof. & HOD, ECE, JSSATE

Dr. M A Goutham, Prof. & HOD, Dept. of ECE, AIT, Chikkamagaluru.

Dr. Anil N S, Prof. & Head, Dept. of ECE, EWCE, B'lore

Dr. Sridhar S, Prof. & Head, Dept. of ECE, APSCE, B'lore

About the FDP:

The FDP throws light on the promising research areas such as to prepare faculties with fundamental knowledge and overview in the field of Signal Processing with Familiarization of the concept of Vector spaces and orthogonality with a qualitative insight into applications

in communications. To equip faculties with a basic foundation of Signal Processing by delivering the basics of quantitative parameters for Matrices & Linear Transformations, themathematicaldescriptionofdiscretetimesignalsandsystems, analyzing the signals intimedomai nusing convolutionsum, classifying signals into different categories based on their properties, analyzing Linear Time Invariant(LTI) systems in time and transform domains

- Vector spaces and Dimensions of the four subspaces.
- Industrial Visit to Indian institute of Astrophysics, Gouribidanur.
- Eigen values and Eigen vectors
- Time Domain representation of LTI System
- Basic operations of Signals
- System classification and properties
- Hands-on Session Practical Component of IPCC by Python

FDP BROCHURE:



ABOUT THE INSTITUTION

SJC Institute of Technology (SJCIT) is a premier institute, dedicated to impart quality education since 1986. With divine blessings of Paramapoojya Jagadguru Padmabhushana Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji, the institute is managed by Sri Adichunchanagiri Shikshana Trust^(R). The trust is under the astute visionary & spiritual guidance of Paramapoojya Jagadguru Sri Sri Dr. Nirmalanandanatha Mahaswamiji. The college campus is spread over 64 acres of lush green environment and is located near Muddenahalli, the birth place of the Architect of Modern India, Bharath Ratna Sir M. Visvesvaraya. The college is situated on Bengaluru - Bellary National Highway (NH-44) about 50 kms from Bengaluru and 20 kms from Kempegowda International Airport. The Institution is accredited by NBA, NAAC and offers ten UG Courses: ECE, CSE, CSE (CS&D), CSE (AI&ML), CSE (DS), ISE, MECH, CV, AE & AS and Five PG Courses in Engineering and MBA along with Eight VTU recognized R&D centers.

ABOUT THE DEPARTMENT

The Department of ECE, established in 1986 is offering UG degree with an intake of 180, PG degree in Digital Communication & Networking and also has Research centre. It is well equipped with state-of-the-art laboratories. The department is strengthened with the dedicated faculty to exploit all the available teaching and training aids to impart quality education. All the laboratories are geared with wide range of Test Equipment and their accessories, modules/models, experimental workbenches to undertake prescribed experiments. Various Training Activities/Seminar/ Workshops will be regularly organized to improve the Technical Skills of both faculty and Students. Students from our department have been placed in the top most Companies with good packages. Some students have been inducted into foreign universities for higher studies and Research programs.

Vision of the Department

To Achieve Academic Excellence in Electronics and Communication Engineering by Imparting Quality Technical Education and Facilitating Research Activities

OBJECTIVES OF THE FDP

- To prepare Faculty Members with knowledge in fundamental & Advanced concepts in the field of Signal Processing involving vector spaces and orthogonality with a qualitative insight into applications in communications.
- To equip Faculty Members well versed with quantitative parameters for Matrices & Linear Transformations, the mathematical description of discrete time signals and systems, analyzing the signals in time domain with hands on sessions.

PROGRAM SCHEDULE:

| PROGRAM SCHEDULE: | | | | |
|-------------------------|--|--|--|--|
| Days | Timings | Contents | Resource Person | |
| Day-1 (18/10/2022) | Session - 1 9.30am-12:30pm | Inauguration & Keynote Address | Dr. Rathna G.N. Principal Research Scientist, IISC. Bangalore | |
| | Session = 2 1:30pm-3:30pm | Vector spaces and Dimensions of the four subspaces. | Dr. Saneesh Cleatus Thudiyil, Assoc, Prof. BMSIT, B'lore | |
| Day = 2 (19/10/2022) | Industrial Visit to Indian Institute of Astrophysics, Gouribidanur | | Dr.Barve Indrajit Vittal, Scientist M. Rajesh, JRF | |
| Day -3 (20/10/2022) | Session - 3 9.30am-12:30pm | Eigen Values & Eigen Vectors. | Dr. D S Swetha Professor, PES University, B'lore | |
| | Session – 4 1:30pm-3:30pm | Time Domain representation of LTI System | Dr. K B Raja, Prof. & Chairman, Dept. of ECE, UVCE | |
| Dny - 4 (21/10/2022) | Session - 5 9.30am-12:30pm | Basic operations on Signals | Dr. H V Kumaraswamy Professor, RVCE, B'lore | |
| | Session – 6 1:30pm-3:30pm | System Classification & Properties | Prof. Nagaraju P Assoc. Professor, RVCE, B'lore. | |
| Day - 5 22/10/2022) | Session -7 9.30am-12:30pm | Hands-on Session, Practical Component of IPCC by Python | Dr B N Shobha Prof. & Head Dept. of ECE, SJCIT | |
| D. (227) | Session = 8 1:30pm-3:30pm | Valedictory Function | High Tea | |
| | | | | |

REGISTRATION FORM

5-Days Faculty Development Program on

FUNDAMENTALS & APPLICATIONS OF BASIC SIGNAL PROCESSING

(As per revised NEP-VTU syllabus) OCTOBER 18-22, 2022

| Name: | | |
|-----------------------------|--|--|
| Designation: | | |
| Qualification: | | |
| Department: | | |
| Institution: | | |
| Mobile No: | | |
| Email-ID: | | |
| UPI Transaction ID: | | |
| Address for correspondence: | | |
| | | |

Signature of the Participant

Sponsorship Certificate

Dr/Mr/Mrs......is
a faculty of our Institution/College/University and is
sponsored/permitted to attend 5-Days FDP on
Fundamentals & Applications of Basic Signal Processing.

Signature of the Principal/ Head of the Department with seal

Place:

Date:

Note: A photocopy of this form may be used.

List of Participants attended for Faculty Development Programme on "Fundamentals & Applications of Basic Signal Processing held from 18th to 22nd October 2022

| SL.NO. | NAME OF THE FACULTY | DESIGNATION | COLLEGE |
|--------|----------------------|-----------------------|---------------------------------|
| SL.NO. | NAME OF THE FACULTY | DESIGNATION | COLLEGE |
| 1 | Nischitha K | Assistant Professor | PES College of Engineering |
| 2 | S.Jyothi | Assistant Professor | PESCE, Mandya |
| 3 | Jyothi M P | Assistant Professor | MRIT, Mysore |
| 4 | Dr. Rajesh L | Assistant Professor | East point CE, B'Lore |
| 5 | Asha Nataraja | Assistant Professor | EPCET |
| 6 | Surendiran.J | Assistant Professor | HKBKCE, B'lore |
| 7 | Dr.Mahesan KV | Assistant Professor | Dr.AIT, B'Lore |
| 8 | Gopalareddy | Assistant Professor | Acharya IT, Bangalore |
| 9 | Yashavanth T R | Assistant Professor | MRIT, Mysore |
| 10 | Dr.H.Venkatesh Kumar | Professor | NCET, B'Lore |
| 11 | Rakesh Rathod | Sr. software engineer | Ramaiya institute of technology |
| 12 | Pradeep Kumar S | Assistant Professor | NMIT, Bengaluru |
| 13 | Lavanya R | Assistant Professor | PESITM, B'Lore |
| 14 | Madhukar.B.N. | Assistant Professor | DR. SMCE, BANGALORE |
| 15 | Nataraja N | Assistant Professor | Atria IT, Bengaluru |
| 16 | Madhusudhan S | Assistant Professor | AIMES, Bidadi |
| 17 | Sushma TV | Assistant Professor | CMRIT, B'Lore |
| 18 | Sridevi S | Assistant Professor | CMRIT, B'Lore |
| 19 | Santosh Kumar S | Assistant Professor | SVCE, B'Lore |
| 20 | Niranjana Kumara M | Assistant Professor | GEC, Hassan |
| 21 | Dr Anitha T G | Professor | EWIT, B'Lore |
| 22 | Babitha S Ullal | Assistant Professor | EWIT, B'Lore |
| 23 | Praveen Kumar M S | Assistant Professor | JSSATE |
| 24 | Dr. Manjunath R C | Assistant Professor | GAT, B'Lore |

| 25 | Sukumar B S | Assistant Professor | CBIT, KOLAR |
|----|----------------------|---------------------|-----------------------------|
| 26 | Manjesh N | Assistant Professor | RLJIT, Doddaballapur |
| 27 | Nandish N | Assistant Professor | RLJIT, Doddaballapur |
| 28 | Dr. Madhuchandra G | Assistant Professor | RLJIT, Doddaballapur |
| 29 | Dr B N Shobha | Professor & Head | SJC Institute of Technology |
| 30 | Dr. Nagendra Kumar M | Professor | SJC Institute of Technology |
| 31 | Dr S Bhargavi | Professor | SJC Institute of Technology |
| 32 | Ravi M V | Assistant Professor | SJC Institute of Technology |
| 33 | Dr Levy M | Professor | SJC Institute of Technology |
| 34 | Shwetha V | Assistant Professor | SJC Institute of Technology |
| 35 | Manjunatha S | Assistant Professor | SJC Institute of Technology |
| 36 | Madhukara S | Assistant Professor | SJC Institute of Technology |
| 37 | Kalaiah J B | Assistant Professor | SJC Institute of Technology |
| 38 | Anil Kumar R. | Assistant Professor | SJC Institute of Technology |
| 39 | Mohan Babu C | Assistant Professor | SJC Institute of Technology |
| 40 | Dr Bhaskar S | Professor | SJC Institute of Technology |
| 42 | Dr Sudhir P | Associate Professor | SJC Institute of Technology |
| 43 | Dr C Rangaswamy | Associate Professor | SJC Institute of Technology |
| 44 | Dr Pranjala Tiwari | Associate Professor | SJC Institute of Technology |
| 45 | Sri Ramu D S | Assistant Professor | SJC Institute of Technology |
| 46 | Savitha M M | Assistant Professor | SJC Institute of Technology |
| 47 | Rame Gowda M | Assistant Professor | SJC Institute of Technology |
| 48 | Ravi Kiran R | Assistant Professor | SJC Institute of Technology |
| 49 | Nirmaladevi A C | Assistant Professor | SJC Institute of Technology |
| 50 | Srivani E N | Assistant Professor | SJC Institute of Technology |
| 51 | Prasanna Kumar D C | Assistant Professor | SJC Institute of Technology |
| 52 | Vishala I L | Assistant Professor | SJC Institute of Technology |
| 53 | Veena S | Assistant Professor | SJC Institute of Technology |
| 54 | Manjula K | Assistant Professor | SJC Institute of Technology |

| 55 | Bhavana S | Assistant Professor | SJC Institute of Technology |
|----|---------------------|---------------------|-----------------------------|
| 56 | Anitha C | Assistant Professor | SJC Institute of Technology |
| 57 | Chandini A G | Assistant Professor | SJC Institute of Technology |
| 58 | Shreehari H S | Assistant Professor | SJC Institute of Technology |
| 59 | Asharani M | Assistant Professor | SJC Institute of Technology |
| 60 | Santhosh G | Assistant Professor | SJC Institute of Technology |
| 61 | Dr Krushitha Shetty | Assistant Professor | SJC Institute of Technology |

IMAGE OF THE EVENTS:

Day - 1 (18/10/2022)

Session-1 [09:30AM to 12:30PM] Introduction and keynote address

Topic: Fundamentals of basic signal processing and its application

Dr. Rathna G.N.

Principal Research Scientist, IISC. Bangalore



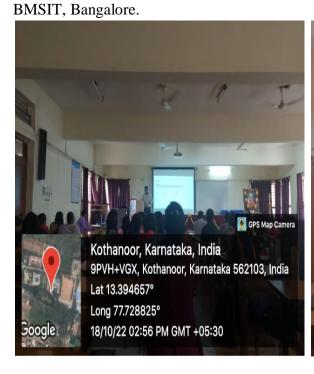






$\underline{\text{Day}} - 1 (18/10/2022)$

Session-2 [01:30PM to 03:30PM]
Dr Saneesh Cleatus Thudiyil
Associate professor





<u>Day - 2 (19/10/2022)</u>

Session-1 &2 [09:30AM to 03:30PM]

Dr B.Indrajit

Scienst, IIAP, Gauribidanur.

Mr.Girish, JRF, IIAP, Gauribidanur.

Industrial visit to Indian insistute of astrophysics, Gauribidanur.

As a part of the Faculty Development Program, the attendees of the FDP and space lab teammates headed to the Indian Institute of Astrophysics, Gauribidanur. The team left the college campus at 10:15 AM and reached the Indian Institute of Astrophysics, Gauribidanur at 12:30 PM. The ambience was filled with a lot of antennas from the entrance of the institute.



The team was welcomed there by Mr.Indrajit He explained the agenda for the day's event and served some beverages to the team. The team was made into 2 groups and taken to different sessions. The session 1 for both the teams were started at 1:00 PM. The first session for Team 1 was given by Mr.Girish, RF Engineer at IIAP, Gauribidanur. The session was mainly focused on the study of the heliogram array (T-shaped) which was spread out 3 KM east-to-west and 1 KM north-to-south. The discussion started with the team along with the guide taking a tour over the field with the log periodic dipole antenna, its advantages, which LPDA is chosen, directivity, and other related antenna parameters were discussed in the first part of session 1 for team 1. The second part of the discussion with team 1 was about how the LPDA is useful in receiving signals from the sun, why 30 MHz to 120 MHz frequency is being used, what is a geomagnetic field, interferometric mode, and seismology sensors. The third part of the discussion with team-1 was an interactive session. The faculty were enthusiastic about knowing about the process in detail and discussions were done about this. With this session-1 of team-1 was completed. Mr.Girish fed the team with diverse knowledge regarding space weather. The space lab team from DHRITVAN-Space lab collected a lot of inputs from the RF engineer. The session 2 completed at 2:15. The teams were asked to break for lunch.















The session 2 started at 2:50 PM and ended at 3:50 PM The session 2 for team 1 was the same as session 1 of team 2(Sun study with Mr.Indrajit) and session 2 for team 2 was same as the session 1 of team 1(Antenna study with Mr.Girish).



The last part of the day's agenda was a group photo taken for documentation process.



Day - 3 (20/10/2022)

Session-3 [09:30AM to 12:30PM]

Dr D S Swetha

Professor

PES University, Bangalore.

Topic:Eigenvalues and Eigen vectors



Day - 3 (20/10/2022)

Session-4 [01:30PM to 03:30PM]

Dr. K B Raja

Professor, Department of ECE, UVCE, Bangalore.

Topic: Time domain representation of LTI system.



Day - 4 (21/10/2022)

Session-5 [09:30AM to 12:30PM]

Dr. H V Kumaraswamy

Professor, RVCE, Bangalore.

Topic: Basic operation on signals





Day - 4 (21/10/2022)

Session-6 [01:30PM to 03:30PM]

Nagaraju P, Associate professor, RVCE, Bangalore.

Topic: System Classification and properties





Day - 5 (22/10/2022)

Session-7 [09:30AM to 12:30PM]

Dr B N Shobha

Professor and Head

Dept of ECE, SJCIT

Dr sudhir P

Associate Professor

Topic: Hands-on session on practical component of IPCC by python





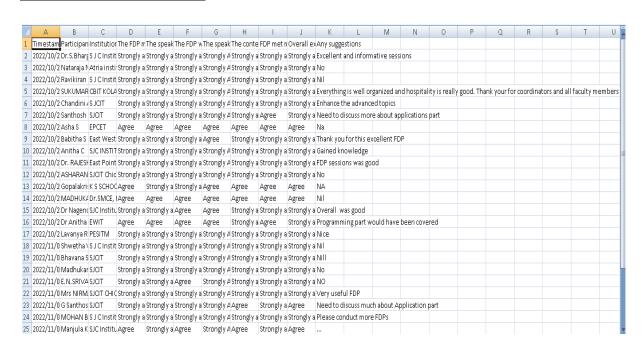
Day - 5 (22/10/2022)

Session-8 [01:30PM to 03:30PM]

Validictory Function



Feedback Report Analysis:



Certificate Distribution:





