

A
Report on
One week
Short Term Training Programme (STTP) on
Biomedical Signal Processing
March 30- April 3, 2015



Course Co-ordinator
Dr. S. T. Hamde
Dr. Mrs. V. R. Thool



Department of Instrumentation Engineering
Shri Guru Gobind Singhji Institute of Engineering & Technology,
Nanded



One week Short Term Training Programme (STTP) on **Biomedical Signal Processing** was held during March 30th to April 3rd 2015, organized by Department of Instrumentation Engineering at Shri Guru Gobind Singhji Institute of Engineering & Technology, Vishnupuri, Nanded, an autonomous institute affiliated to the Government of Maharashtra state. It was sponsored by Center of Excellence in Signal & Image Processing (TEQIP-II).

These five days STTP included talks on various aspects of Biomedical Signal Processing and study of the recent trends in research areas of this field by the interaction with numerous experts from different parts of country. This STTP mainly aims to explore the methods to extract the useful information from physiological signals and strengthen the bond between academic & ongoing medical research.

The STTP was entirely planned and coordinated by Dr. S. T. Hamde and Dr. Mrs. V. R. Thool. Eminent speakers and experts from IIT's and renowned institutes glorified the STTP.

The STTP was scheduled from March 30, 2015 to April 3, 2015. The inaugural function of the school was held at 10.00AM on March 30, 2015. The inauguration accomplished in the presence of Chief guest Dr. Vinod Kumar, Dr. Ranjan Maheshwari & Dr. A. G. Patil as Guests of honor, Dr. L. M. Waghmare Director of the Institute, Dr. M. B. Kokare, CoE coordinator, and Dr. S. T. Hamde & Dr. Mrs. V. R. Thool Course coordinator. The inauguration was anchored by Ms. Roopali S. Biyani, Faculty of Department of Instrumentation Engineering.

The daily plan of the STTP of four sessions including hands on practical sessions in a day was scheduled in prior, and was executed accordingly.

 SGGS Institute of Engineering & Technology Vishnupuri, Nanded - 431 606 (MS) (An Autonomous Institute Owned by Government of Maharashtra) One Week Short Term Training Program On "Biomedical Signal Processing" 30 th March to 3 th April 2015 Under Center of Excellence in Signal & Image Processing (TEQIP-II)				
Date / Time	9.30 – 11.30	11.45-1.45	2.30-4.30	4-45-5.30
30/03/2015	Inauguration and a talk on Medical Signal & Image Processing – A Virtual Laboratory Dr. Vinod Kumar Dy. Director, IIT Roorkee	ECG Beyond Books Dr. Ranjan Maheshwari Director, NIELIT, Aurangabad	Over view of Biomedical Instrumentation Dr. A. G. Patil HOD. Electronics, BMP Mumbai	Hands on Session
31/03/2015	Research Areas in Biomedical Engg./Instrumentation Dr. A. G. Patil HOD. Electronics, BMP Mumbai	Interpersonal Neurobiology Dr. R. R. Manthalkar Asso. Professor, SGGSE&T, Nanded	Signal Processing in Functional Near Infrared Brain Imaging Dr. A. G. Patil HOD. Electronics, BMP Mumbai	Hands on Session
01/04/2015	ECG signal Analysis and Interpretation Dr. S. T. Hamde Dean, R&D, SGGSE&T, Nanded	Overview of Digital Signal Processing Dr. R. S. Holambe Professor, SGGSE&T Nanded	2-Channel Filter Bank-Perfect Reconstruction Condition Dr. S. V. Bonde Asso. Professor SGGSE&T, Nanded	Hands on Session
02/04/2015	Functional MRI Imaging Dr. A. V. Deshmukh Principal, DACOE, Karad	Digital Filter Design Prof. Dr. V. M Gadre IIT, Powai, Mumbai	Breast Cancer Dr. Anjali Davale MS, Nanded & Mammography Dr. V. R. Thool Asso. Professor, SGGSE&T, Nanded	Medical Imaging: x-ray, CT, MRI & Ultrasound Prof. V. S. Rane HOD. Instrumentation Dr. D. Y. Patil, COE, Pimpri, Pune
03/04/2015	Image Retrieval Dr. A. B. Gonde Asso. Professor SGGSE&T, Nanded	Diagnosis of Osteoarthritis Dr. Suhas Gajre HOD. EXTC, SGGSE&T, Nanded	Diabetic Retinopathy Dr. M. B. Kokare Asso. Professor, SGGSE&T, Nanded	Retinopathy Dr. B. M. Patre Dean, International Relations SGGSE&T, Nanded

84 Participants in total, 35 from different academic institutes and 49 from our institute including Faculty members, Research Scholars and M.Tech students actively attended the STTP. Following is the list of participants in particular.

List of Participants:

1	Supriya Rajankar	Sinhgad College of Engg.,Pune-41
2	Sujata Agrawal	Smt.Kashibai Navale College of Engg,Pune-411
3	Nita Chayengia	SVERI's College of Engineering, Pandharpur
4	Rajani Mhetre	SVERI's college of Engineering, Pandharpur
5	Shirish S. Kulkarni	RAIT, NERUL, NAVI-MUMBAI
6	Bhavesh B Digey	RAIT, NERUL, NAVI-MUMBAI
7	Ashwinkumar Vatne.	S.G.G.S.I.E.&T.Nanded
8	Umesh Thorkar	Govt College of Engineering, Amravati
9	Faisal Shaikh	MGM's JNEC AURANGABAD
10	Dinesh Kulkarni	Konkan Gyanpeeth College of Engg, Karjat
11	Sachin Giri	Konkan Gyanpeeth College of Engg, Karjat
12	Rahul Ingle	VJTI, Mumbai
13	Vikram Kehri	VJTI, Mumbai
14	Digambar Puri	VJTI, Mumbai
15	Pravin Kamble	CSMSS, Aurangabad
16	Sidhant Kulkarni	SRES COE, Kopargaon.
17	Sangita Bharkad	Government COE, a'bad
18	Brijesh Iyer	Dr. B.A.TECH.UNIVERSITY,LONERE-MH
19	Kalpna Vanjarkhede	P.D.A.COLLEGE OF ENGG,GULBARGA.
20	Rushikesh Borse	Sinhgad Academy of Engg
21	Ram Kanhe	GSM Maharashtra Institute of Tech ,A'bad
22	Chander Pawar	
23	Mahesh Potdar	PVG COE Pune
24	Sujit Jagtap	SRTMNU Nanded
25	Rameshwar Yadav	SRTMNU Nanded
26	Sushil More	SRTMNU Nanded
27	Priyanka Sonwane	SRTMNU Nanded
28	Sharad Jadhav	RAIT, NERUL, NAVI-MUMBAI
29	Shweta Sakale	GPVN Nanded
30	Jayant Muley	GECA
31	Aparna Dalvi	MGM Nanded
32	Satish Pawale	MPGI Nanded
33	Mahendra Patil	Atherv COE Mulud(w),mumbai
34	R K Chavan	SGGS nanded

35	Venkat Ghodke	AFSSMS'SIOIT,Pune
36	Sweety Nandurkar	SGGSIE&T VISHNUPURI
37	Roopali Biyani	SGGSIE&T VISHNUPURI
38	Jayant Parkhe	SGGSIE&T VISHNUPURI
39	Nishi Agham	SGGSIE&T VISHNUPURI
40	Pratap Vikhe	SGGSIE&T VISHNUPURI
41	Rekha Bhalekar	SGGSIE&T VISHNUPURI
42	Ajit Chaudhari	SGGSIE&T VISHNUPURI
43	Prasad Bharode	SGGSIE&T VISHNUPURI
44	Shruti Uke	SGGSIE&T VISHNUPURI
45	Prasanna Porwal	SGGSIE&T VISHNUPURI
46	Sujata Wankhade	SGGSIE&T VISHNUPURI
47	Prajakta Haseekar	SGGSIE&T VISHNUPURI
48	Manjiri Ranjanikar	SGGSIE&T VISHNUPURI
49	Akash Gandharmal	SGGSIE&T VISHNUPURI
50	Gaurav Gajbhiye	SGGSIE&T VISHNUPURI
51	Madhav Vaidya	SGGSIE&T VISHNUPURI
52	Balaji Shetty	SGGSIE&T VISHNUPURI
53	Ganesh Pakle	SGGSIE&T VISHNUPURI
54	Chandrakant Navdeti	SGGSIE&T VISHNUPURI
55	Balaji Bombde	SGGSIE&T VISHNUPURI
56	Hemprasad Badgujar	SGGSIE&T VISHNUPURI
57	Sagar Tambe	SGGSIE&T VISHNUPURI
58	Mininath Bendre	SGGSIE&T VISHNUPURI
59	Anupama Buddhewar	SGGSIE&T VISHNUPURI
60	Vaishali Mandhre	SGGSIE&T VISHNUPURI
61	Balaji Bombde	SGGSIE&T VISHNUPURI
62	B.M.Patre	SGGSIE&T VISHNUPURI
63	R.S.Chile	SGGSIE&T VISHNUPURI
64	Mukund Nagre	SGGSIE&T VISHNUPURI
65	Shrikant Madde	SGGSIE&T VISHNUPURI
66	Dharminder Singh	SGGSIE&T VISHNUPURI
67	Amruta Kaldate	SGGSIE&T VISHNUPURI
68	Neha Ingle	SGGSIE&T VISHNUPURI
69	Dhanshree Thulkar	SGGSIE&T VISHNUPURI
70	Amol Lolure	SGGSIE&T VISHNUPURI

71	Shital A. Walke	SGGSIE&T VISHNUPURI
72	Vishakha Dighore	SGGSIE&T VISHNUPURI
73	Savita Barhalikar	SGGSIE&T VISHNUPURI
74	Bhalerao M.V	SGGSIE&T VISHNUPURI
75	Kakoli Majumder	SGGSIE&T VISHNUPURI
76	Narendra Jadhav	SGGSIE&T VISHNUPURI
77	Chetan solanki	SGGSIE&T VISHNUPURI
78	Nikita Rathi	SGGSIE&T VISHNUPURI
79	Sushant Pawar	SGGSIE&T VISHNUPURI
80	Samidha Yerawar	SGGSIE&T VISHNUPURI
81	Dr. L.V. Birgale	SGGSIE&T VISHNUPURI
82	Dr. S.G.Kejgir	SGGSIE&T VISHNUPURI
83	Dr. R.V.Sarvadnya	SGGSIE&T VISHNUPURI
84	Dr. R.C.Thool	SGGSIE&T VISHNUPURI

The participants were satisfied with the content of workshop and it provided guidelines for further research work. Concluding session was followed by a photo session with all participants, organizers and speakers. Certificates were distributed to the participants in the same.

Photo Album:









Information Brochure:

Scope

Biomedical Instrumentation (BMI) is all about health care. As the world's population grows the need for health care increases. In recent years, progress in medical care has been very rapid. Major reason for this progress has been the application of engineering principles for biomedical use. The most visible contribution of BMI in clinical practice involves instrumentation for diagnosis, therapy and rehabilitation. Today we find tremendous advancement in the field of BMI in terms of diagnostic, therapeutic and rehabilitation like ECG, EMG, EEG, DCT, MRI, CT and PET SCAN, Defibrillator, Pacemaker, Hearing Aids etc. Biomedical signals are observations of physiological activities of organisms, ranging from gene and protein sequences, to neural and cardiac rhythms, to tissue and organ images. Biomedical signal processing aims at extracting significant information from biomedical signals. With the aid of biomedical signal processing,ologists can discover new biology and physicians can monitor chronic illnesses.

Biomedical signal processing is of importance not only to physiologist consulting research and the clinician treating patients but also to the biomedical engineer who is required to process and interpret the physiological signals by designing systems and algorithms for their manipulations. It is the basis of how engineering aids the field of medicine. Medicine is an empirical field. Doctors understand medicine based on what they learn to be true through their study and practice. Engineers, on the other hand, focus on trying to fully understand a particular system.

The objectives of the workshop are:

- Study the various aspects of Biomedical Signal Processing and Analysis of ECG, EMG, & EEG Signal processing.
- Study the various aspects of Imaging Technique namely X-ray, MRI, Ultrasound, CT scan, PET Scan etc & their image processing.
- Develop new methods of signal processing that extract useful information from physiologic signals.
- To study the recent trends in research areas in the Biomedical Signal Processing.
- Interaction with experts in the area of Biomedical signal Processing.
- Encourage interaction between the research scholars from various institutes.
- Bridge gaps between academia and applied research.

Equipments Available

Atna Electrocardiograph Machine
Biomedical Wireless ECG Monitoring System
Derma Lab
Lung Analysis Instrument
Gen. Analysis System
Sonography Machine
X-Ray Machine
Multiparameter Monitoring System
Dosimeter
Manikin Comprehensive Emergency Skill Training Kit
PC Based Stress Analyzer System
BROPAC - Biosensor, Data Acquisition & Signal Analysis System
PC Based Electromyography(EMG)
Skin PH Meter
Ventilator Trainer Kit

Student Coordinators

Mr. P. S. Vihle Research Scholar	Mobile No. : (+91) 9028521653 Email: pratapvk@rediffmail.com
Mr. M. B. Nagare Research Scholar	Mobile No. : (+91) 7548012008 Email: nagaremkandaj@gmail.com
Mr. N. S. Jadhav Research Scholar	Mobile No. : (+91) 94231091564 Email: jadhavnnsmdn@spps.ac.in
Mr. D. D. Dhandekar JRF	Mobile No. : (+91) 8087359136 Email: dhandekar@rediffmail.com
Mr. S.S. Giri	Mobile No. : (+91) 9028144648 Email: shripudgiri@gmail.com
Mr. R. B. Lende	Mobile No. : (+91) 8273200422 Email: rahullende1995@gmail.com
Mr. S. A. Walker	Mobile No. : (+91) 9402984064 Email: shitalwalker2@gmail.com
Mr. A.G. Lotare	Mobile No. : (+91) 8087973047 Email: lotareanand@spps.ac.in
Mr. D. G. Thalkar	Mobile No. : (+91) 8087973047 Email: dhamleothalkar@gmail.com

Lab Support: Mr. S. U. Ambekar

Short Term Training Program

on
"Biomedical Signal Processing"
30th March – 3rd April, 2015

Under Centre of Excellence
(Sponsored by TEQIP III)

Patron
Dr. L. M. Waghmare
Director,
SGGSIE&T, Nanded

Dr. V. G. Asutkar
Head, Department of Instrumentation Engineering

Course Coordinators
Dr. S.T. Hamde
Professor,
Department of Instrumentation Engineering
Dr. V. R. Thool
Associate Professor,
Department of Instrumentation Engineering



Organized by
Department of Instrumentation Engineering,
SGGS Institute of Engineering and Technology,
Vishnupuri, Nanded-431606 (MS)

About the Institute

Shri Guru Gobind Singhji (SGGS) Institute of Engineering and Technology, Vishnupuri, Nanded is established in 1981 and has grown to the level of being recognized as a leader in the area of technical education and research. Started with just one undergraduate program, now it has 10 undergraduate and 7 postgraduate programs. It offers Ph.D. program under Scheme Ramkrishna Mission, Maharashtra University, Nanded and Quality Improvement program of Ministry of HRD, Government of India. It is a recognized research center of SRTMU, Nanded. One of the unique features of the institute is, its faculty strength. It is one of the premier institutes having more than 50% faculty with Ph.D. Qualifications.

The institute has a very progressive and programmatic approach in providing its services to all its stakeholders, sponsored and joint research projects with various organizations such as IRNS, ICT Mumbai and NRB represent other feathers in the cap of this institute. Four of the institute's departments have FIST sponsored laboratories. The research culture of the institute has been proven through publications in thousands of research contributions with good citation record in peer reviewed prestigious national/international journals and reputed international conferences. The institute has collaborations with a number of premier institutes (including foreign universities) and industries through which opportunities like internships, credit transfers, industry relevant projects, etc. are made available for students.



Resource Persons

Dr. Vinod Kumar Deputy Director, IIT Kanpur
Dr. Ranjan Maheshwari Director, NIELIT, Aurangabad
Dr. A. G. Pail HOD, Shivajinagar Polytechnic, Mumbai
Dr. P. K. Kulkarni Professor, PDA, Engineering College, Gadgaon
Dr. A. V. Deshpande Principal, DAC Engineering College, Karad
Prof. V. S. Bane HOD, DY Patil College of Engineering, Pimpri, Pune
Dr. R. M. Patre Professor and Dean International Relations, SGGSIE&T, Nanded
Dr. R. S. Holandur Professor and Dean Alumni Affairs, SGGSIE&T, Nanded
Dr. M. B. Kokare Asst. Professor, SGGSIET, Nanded
Dr. R. R. Manthalkar Asst. Professor, SGGSIET, Nanded
Dr. Subhas Gajre HOD, ENTC, SGGSIET, Nanded
Dr. S. V. Bhande Asst. Professor, SGGSIET, Nanded
Dr. S. T. Hamde Professor and Dean I&ED, SGGSIET, Nanded
Dr. V. R. Thool Asst. Professor, SGGSIET, Nanded

Participants

Faculty, students from engineering and medical colleges, preferably for the benefit of the new entrants in this field and practicing engineers from industries.

How to Apply

- Draw a Demand Draft of any nationalized bank in the favor of "Director, SGGSIET, Nanded" payable at Nanded.
- Fill online application form which is available at Event section of www.spps.ac.in
- The course registration fee is Rs. 1000/- per participant.
- To confirm the participation please send scanned copy of Demand Draft/online payment details to ce@www.N/A@gmail.com on or before 20th March, 2015
- Write down your Name and Contact No. on the back side of Demand Draft and send to Coordinator.
- Accommodation can be provided on request to the participants on payment basis.

Short Term Training Program

on
"Biomedical Signal Processing"

Registration Form

Name: _____

Institute/Organization: _____

Department: _____

Designation: _____

Mailing Address: _____

E-mail ID: _____

Phone: _____

Mobile: _____

DD No. (Online payment): _____

Bank & Date: _____

Signature of Candidate: _____

Place: _____

Date: _____