All India Council for Technical Education (AICTE) ATAL Academy
Sponsored one week Online
Faculty Development Program
On

"BIOMEDICAL ENGINEERING SYSTEMS and TECHNOLOGIES"

23rd - 27th November 2020

Coordinator
Dr. Amol S. Deshpande
Assistant Professor
Electronics & Telecommunication Engineering
Department

Organized By
Electronics & Telecommunication Engineering Department
Bharatiya Vidya Bhavan's
Sardar Patel Institute of Technology,
(An autonomous institution affiliated to University of Mumbai)
Mumbai, Maharashtra
Telephone: 91-22-26707440 / 26287250 |
URL : www.spit.ac.in

ABOUT THE INSTITUTE

In 1995, Sardar Patel Institute of Technology was established with Electronics Engineering, Electronics and Telecommunication Engineering, Computer Engineering and Information Technology branches affiliated to University of Mumbai. These branches have earned a great reputation in the field of engineering education, as well as industry. Post Graduate & PhD in Electronics and Telecommunication was started in 2010 and 2012 respectively. University of Mumbai has conferred Autonomous Status to S.P.I.T. for a period of five years from the academic year 2017-18 to 2021-22.

S.P.I.T. Highlights :
- NBA Accredited Programmes
- Became an Autonomous Institute affiliated to University of Mumbai in 2017.
- Securing an NIRF ranking of 125 in India for 2020. For 2019 & 2018 secured NIRF rank in the band of 100-125.
- New and updated curriculum under autonomy provides flexibility for Semester long internships.
- Consistently achieving 100% placements since few years.

ABOUT COURSE

Why the course on Biomedical Engineering ?
There is tremendous scope of research and project work to be carried out in the field of Biomedical and Biosimilar technologies which has direct impact on human mankind. The multidisciplinary and diverse applications demand the study of current research scenario and upcoming challenges and opportunities in this field. The topics covered through this programme are as following:
- Overview of technology and recent trends
- Signal and Image Processing
- Informatics, Algorithms in Biomedical
- Machine Learning and Artificial Intelligence in Biomedical

COURSE OBJECTIVES

- To give overview of recent trends in several aspects of Biomedical systems and technologies.
- Identification of challenges in Biomedical systems and technologies.
- To acquire insights about technological details of different research areas under Bioengineering and Biomedical systems.
- To motivate research scholars/researchers to pursue research in the field of biomedical engineering.

Expected Outcome

- Identification different research domains under Biomedical engineering.
- Overview of recent trends in engineering applications in biomedical systems and technologies.
- Being introduced with technologies, systems, devices etc. associated with biomedical requirements.

SIGNIFICANCE OF COURSE

This course will provide more insight to the participants for using/developing/researching Biomedical engineering systems, devices, methodologies through several actual case studies and recent trends.

RESOURCE PERSONS

- **Dr. Alka Sharma, Chief Guest**
  Scientist 'G',
  Dept. of Biotechnology, Ministry of S&T
- **Dr Hari Varma**,
  Biosciences & Bioengineering, IIT Bombay
- **Dr. Amit Sethi**,
  Electrical Engineering, IIT Bombay
- **Dr G Vedaprakash**,
  IIT Delhi
- **Mr. Deepak Berwal**,
  IIT Bombay
- **Dr. Shiladitya Mitra**,
  Max Planck Institute of Psychiatry, Germany
- **Dr. Samyak Mulkutkar**,
  Hinduja Hospital, Mumbai
- **Dr Lancelot Pinto**,
  Hinduja Hospital, Mumbai
- **Dr Santoshi Nagaonkar**,
  Hinduja Hospital, Mumbai
- **Dr. Swapnil Rane**,
  Tata Memorial Hospital, Mumbai
- **Dr. Aniruddha Joshi**,
  Founder & CEO, Atreya Innovations Pvt. Ltd., Pune
- **Mr. Chandrakant Deoda**,
  Visteon Corporation Pvt Ltd., Pune
- **Dr Shivraj Rathod**,
  Bharat Forge, Pune
- **Dr. Tushar Kanti Bera**,
  NIT, Durgapur
- **Prof. Dayanand Ambawade**,
  S.P.I.T, Mumbai,
- **Dr. Rahul Ingle**,
  V.J.T.I, Mumbai
- **Dr. Abhijit Pednekar**,
  Abbott, Mumbai

REGISTRATION PROCESS

One can register for the course through AICTE Training and Learning (ATAL) Academy web portal only.
https://www.aicte-india.org/atal
There is no registration fee for the course. For certificate attendance and passing of Examination is mandatory.

COURSE SCHEDULE

Duration : 23rd – 27th November 2020
Timing : 10 am onwards
Mode   : Online mode

WHO SHOULD ATTEND THE COURSE

This course is useful for engineers of different disciplines aspiring towards research & development in the field of Biomedical Engineering and its applications. The course will be most beneficial for:

- Engineering post-graduates (M.E./M. Tech. in Electronics, Electronics and Telecommunication, Instrumentation, Biomedical Engineering)
- Aspiring researcher in the multidisciplinary streams under Biosimilar technologies and allied fields.
- Faculty members from academic and research institutions
- PhD scholars

CONTACT FOR MORE INFORMATION

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Prof. Milind Paraye   Mob: 8767138757

Email: bestfdp2020@spit.ac.in

PATRON

Dr. Shesha Iyer	Chairman, BoG, S.P.I.T
Dr. B. N. Chaudhari	Principal, Sardar Patel Institute of Technology
Dr. Y. S. Rao	Vice Principal, Dean R&D, Sardar Patel Institute of Technology

ORGANIZING COMMITTEE

Dr. Reena Sonkusare	Dy. Head, Electronics & Telecomm. Engg Dept.
Dr. Amol S. Deshpande	Course Coordinator
Prof. Dayanand Ambawade	Course Co-Coordinator
Prof. Milind Paraye	Course Co-Coordinator
Prof. Sneha Weakey	Course Co-Coordinator

COURSE CONTENTS

- Recent Trends in Biomedical Engineering
- ML & AI in Biomedical Engineering
- Biomedical Imaging and Image Analysis
- Biomedical Image Reconstruction
- Biomedical Signal Analysis
- Technologies in Medicine & Healthcare
- Electrical Impedance Tomography
- Plasma Applications in Biomedical Engineering
- Virtual Lab Visit

Tentative Schedule

Date / Time	Monday 23-11-2020	Tuesday 24-11-2020	Wednesday 25-11-2020	Thursday 26-11-2020	Friday 27-11-2020
	Inauguration				
Session - I	**Dr. Amit Sethi**, Associate Professor EE Dept., IIT Bombay	**Dr. Hari Varma**, Assistant Professor, Biosciences & Bioengineering, IIT Bombay	**Dr. Tushar Kanti Bera** Assistant Professor, EE Dept., NIT Durgapur	**Dr. Abhijit Pednekar** Associate Director, Abbott Healthcare Pvt. Ltd., Mumbai	**Dr. G Veda Prakash** Post Doctoral Fellow, IIT Delhi
	Machine Learning applications in Bio-medical	Biomedical Image Reconstruction	Electrical Impedance Tomography (EIT) for Bio-Medical Imaging: Looking into the Human Body with Electricity	Innovations in Healthcare	Plasma Applications in Biomedical
Session-II	**Deepak Berwal**, Research Scholar, IIT Bombay	**Dr. Lancelot Pinto & Dr. Santoshi Nagaonkar**, Hinduja Hospital, Mumbai	**Dr. Rahul Ingle** Assistant Professor, VJTI, Mumbai	**Prof. Dayanand Ambawade**, Associate Professor, S.P.I.T, Mumbai	**Mr. Chandrakant Deoda**, Sahajyoga Trust
	Bio-medical Signals: Opportunities and challenges	Technology & Medicine + Robotics in Surgery	Biomedical Lab Visit	Hands-on	Stress Management
Session-III	**Dr. Aniruddha Joshi**, Founder & CEO, Atreya Innovations Pvt. Ltd., Pune	**Dr. Shivraj Rathod**, Bharat Forge, Pune	**Dr. Samyak Mulkutkar** Hinduja Hospital, Mumbai **Dr. Swapnil Rane**, Tata Memorial Hospital, Mumbai	**Dr. Shiladitya Mitra** Max Planck Institute of Psychiatry, Germany	**Valedictory + Feedback**
	Data science - driven Ayurveda	UWB Radio Tomography Synthesis	Imaging & AI in Opthalmology + AI in Onco-pathology	Emerging Technologies in Preclinical and Basic Neuroscience - scope for engineers	**Quiz**