Curriculum Vitae

THARUN KUMAR REDDY BOLLU, PhD

Assistant Professor in Electronics and Communication Engineering
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PROFESSIONAL SUMMARY

A committed, resourceful and innovative academician and researcher in human machine systems and brain-computer interfaces. Balanced credentials in performance as skillful educator based on student feedback, peer evaluations and awards. Proven track records in performance as a researcher based on grants received from national institutes (including IIT Roorkee, Technological Innovation Hubs, MHRD, DST, Virtual Lab) along with publications in top conferences and journals. Firm, industrious, passionate and productive professional with excellent communication and interpersonal skills.

RESEARCH INTERESTS

- Designing and validation of non-invasive brain-computer interfaces
- Developing and Applying optimal machine learning algorithms and data-science tools for brain-computer interfaces
- Translational research based Applications of Machine Learning and Data Science in Healthcare and Neuro-engineering applications

EDUCATION

- Masters and Ph.D. **(TCS Research Scholar)** in Electrical Engineering, Indian Institute of Technology Kanpur, Uttar Pradesh, India (**June 2020**).
  Thesis Advisors: **Dr. Laxmidhar Behera, ex-affiliate faculty member of Tata Consultancy Services (TCS), Professor in Electrical Engineering**, **IIT Kanpur, Director, IIT Mandi** and Prof. Vipul Arora, Associate Professor in Electrical Engineering, Indian Institute of Technology Kanpur.
  Ph.D Thesis Title: Neural Networks based Optimal Learning and Filtering schemes for EEG Reaction-Time Prediction Brain-Computer Interfaces
  Masters Thesis Title: Learning and Divergence based approaches for drowsiness detection
  B.Tech in Electrical Engineering, Indian Institute of Technology Kanpur, Uttar Pradesh, India (**June 2013**).

FUNDED PROJECTS

- Relevant detailed information about my current funded grants is at shorturl.at/gjr79
- I have been involved in a funding of 3 Crores (in Indian Rupees) for my Institute after joining it in 2021. The main funding agencies are ICMR and DST-SERB.
- **Rs 30,84,330/- (INR), Department of Science and Technology (DST) SERB India. Role: PI**
  Task: To develop Machine Learning based early warning system for predicting micro-sleep using neurological, bio-signal/Brain based biomarkers.
- **Rs 20,00,000/- (INR), Faculty Initiation Grant, Indian Institute of Technology, Roorkee (IITR), India. Role: PI**
  Task: To collect a database of drivers bio-signals and extract appropriate biomarkers for early diagnosis of drowsiness episodes
- **Rs 1,60,00,000/- (INR), DST-SHRI Scheme, Task: Impact of Indian Classical Ragas on human cognitive functions and development of AI & ML enabled Raga Chikitsa neuro-therapeutic application tools. Role: Co-PI**
- **Rs 18,00,000/- (INR), Virtual Labs, Ministry of Education, India. Task: Development of labs on Adaptive Signal Processing**
- **Rs 7,00,000/- (INR), SERB-DST and Aerobe pvt. Ltd., MediAnalytika pvt. Ltd., Task: AI for Human Brain Computer Interaction.**
- **Rs 1,15,00,000/- (INR), DST-NM-ICPS, TIH, IIT Mandi, Task: A System for Enhancing Public Transport Safety with Real-time Ambiance and Driver Monitoring**
- **Sponsored Project worth Rs 2,47,00,000/- (INR) (2.47 Crore Rupees), Indian Council of Medical Research (ICMR), India. (Role: Primary Collaborator)**
  Task1: To build a large-scale database of Epileptic patients along with healthy and pseudo-symptomatic epileptic patients and derive relevant neurological and computational biomarkers.
  Task2: To build a Deep Learning based Epileptic seizure prediction system.

PROFESSIONAL EXPERIENCE

- Assistant Professor (Aug.2021-Current)
  Dept. of Electronics and Communication Engineering, Indian Institute of Technology, Roorkee.
- Assistant Professor (Sep.2020-May.2021)
  Dept. of Electronics Engineering, Indian Institute of Technology Dhanbad, Dhanbad.

- Assistant AI Architect and Research Scientist (Biomedical Data-science and Applied AI) (Feb.2019-Nov.2020), Brainwave Science, Boston, USA (Industry Experience)
Project Details: Brain wave P300 based concealed information detection (This project involves a complete brain forensics based system development currently used by border security agencies and crime investigators)

AWARDS and HONORS

- IEEE Member
- Best paper Award at IEEE INDICON 2023
- Best poster Award at NYCIKS 2023 in IIT Roorkee (Best National poster in the selected theme)
- International runner-up of BIOMAG 2022, challenge on Epilepsy localization
- International winner of BIOMAG 2022, challenge on MDD Detection
- International Winner of Tracks 1,2 and third position in track 5 of the prestigious International Brain-Computer Interface Competition-2021
- International Winner of Passive BCI Grand challenges Hackathon (Neuro-Ergonomics Conference-2021)(https://www.neuroergonomicsconference.um.ifi.lmu.de/pbci/ Link to our team's ranking number 1 on scoreboard)
- Teaching assistant fellowship, awarded by Ministry of Human Resource Development, India on the basis of academic performance during graduate studies
- International Travel Grant award, awarded by IEEE signal processing society at ICASSP 2020.
- Obtained world rank 2 in the Clinical BCI challenge held at WCCI 2020, Glasgow
- Chaired IEEE International Symposium on Computational intelligence for Brain Computer Interfaces http://www.ieeessci2020.org/symposiums/cibci.html.
- Chaired a session on Neural Network Theory in the IJCNN 2017, a prestigious conference in the area of neural networks at Anchorage, Alaska
- Selected for TCS International travel grant
- **TCS research scholarship Award**
- Part of the only team from India, selected for Amazon Picking Challenge round at RoboCup 2016 in Leipzig, Germany. The team grabbed 5th position just behind team MIT among the several top teams in the world. (Video link: https://youtu.be/-QdF30OD-Vk)
- Best course essay award on 'History of Chaos' in the course PHY695: Nonlinear Systems and Dynamics
- Always among the top 0.02 percentile of the best performing students in India in all the competitive exams vis-à-vis IITJEE, AIEEE, etc.
- **Student Awards**
Sanjeev Kumar Varun, PhD (Current) (Visiting research student award at University of Technology, Sydney, Australia (August-Dec, 2023)), Neha Sharma (Visvesvaraiya Scholarship award for Ph.D students, MEITY),

RESEARCH GRANTS AWARDED

1. Virtual Lab Teaching cum research Lab Grant for the core area of Microcontrollers. Role: Principal Investigator, Co- PI. July.2022.
2. Virtual Lab Teaching cum research Lab Grant for the core area of Adaptive Signal Processing. Role: Co-Principal Investigator, July.2022.
3. Faculty Initiation Grant, IIT Roorkee; Project: Data Science and optimal Machine Learning Enabled Drowsiness Detection for Enhancing Situational Awareness from Simulation to Real World Deployment for Semi- Automated Driving. Role: Principal Investigator. June.2022.
4. 2022 Southeast Asia and Taiwan Universities (SATU) JOINT RESEARCH SCHEME (JRS), July. 2022. Role: **Co-PI** with **Taipei Medical University, Taiwan**
Other details are same as Funded Projects section

TRAINING AND EDUCATIONAL GRANTS

1. Lab development for Microcontrollers with adaptive Signal Processing, MEITY, 1.8 Million INR
2. EICT course on Artificial Intelligence and Data Science with Cloudxlab, Inc. (Revenue: 17 Lakh INR)
3. Guest Lectures teaching Industry professionals on Data science with Intellipaat, Inc. (Revenue: 5 Lakh INR)
4. Workshop sponsored by SERB-DST and Aerobe pvt. Ltd., MediAnalytika pvt. Ltd., on AI for Human Brain Computer Interaction. (Revenue: 1.5 Lakh)

COURSES TAUGHT at IIT Roorkee

Teaching at IIT Roorkee has been a challenging but relishable experience for me. Challenging because of remote/online teaching environment initially during my joining, but satisfying, as the students welcomed my teaching and reciprocated emphatically.

- EC 391: Technical Communication; Fall 2021 (Student Evaluations: 4.9/5).
- ECN 614: Adaptive Signal Processing; Spring 2022 (Student Evaluations: 4.8/5)
- ECN-203: Signals and Systems; Spring 2023 (Student Evaluations: 4.1/5)
- ECN-312: Digital Signal Processing (Student Evaluations: 4.5/5) and ECN-222-Automatic Control Laboratory; Fall 2022
- ECN-203: Signals and Systems: Fall 2023 (Student Evaluations: 4.2/5)
- ESS-102: Environmental Science and Sustainability (Topic: Sustainable Electronics): Spring 2024 (Student Evaluations: 4.6/5)
- IEC-03: AI Techniques: Fall 2024 (ongoing)

COURSES TAUGHT at IIT Roorkee and IIT Dhanbad

Teaching at Indian Institutes of Technology has always been a rewarding and fulfilling experience for me. Owing to the good feedback score from students I was asked to teach the course EC-391 leading/representing our research group at this course.

- July 24 onwards
  Teaching an Institute Elective course on AI Techniques to 110 students
- Jan'24 onwards
  Taught ESS-102-Sustainable Electronics
- July' 23 onwards
  Taught ECN-203-Signals and Systems
- Jan' 23 onwards
  Taught ECN-312- Digital Signal Processing and ECN-222-Automatic Control Laboratory
- July'22-Nov'22:
  Taught ECN-203-Signals and Systems (UG course Course) at IIT Roorkee. (This course is taught by me to a class-size of 85, my feedback score as Faculty is 4.1 out of 5, Few of the comments by students are uploaded here on drive: shorturl.at/awzFN)
- Jan'22-May'22:
  Taught ECN-614- Adaptive Signal Processing (PG Elective Course) at IIT Roorkee. (This course is taught by Communication, Networks and Signal Processing group Faculty members. I taught it last semester with 35 class lectures)
- Aug'21-Nov'21:
  Taught EC-391- Technical Communication (UG Course) at IIT Roorkee. (This course is taught by faculty members from three core research groups (Communication, Networks and Signal Processing (CNSP), Micro-Electronics and Very Large-Scale Integrated Circuits (ME-VLSI) and Radio frequency – Microwave (RF-MW) groups). I represented the Communication, Networks and Signal Processing group) It teaches the research methodologies and writing skills to the pre-final year Undergraduate students.
- Dec'20-Apr'21:
  Taught ECC14102- Signals and Systems (UG Course) at IIT Dhanbad. (This course is taught by faculty members from Communication and Signal Processing group to the pre-final year students of Mathematics Department at IIT Dhanbad).
- Aug'20-Dec'20:
  Taught ECC503- Probability Theory and Linear Algebra (PG Course) at IIT Dhanbad

INVITED TALKS

• Delivered a keynote lecture on the topic "Assistive Robots in Brain Computer Interfaces" in the 3-day workshop "Workshop on Healthcare Robotics and Drone Applications" held from May 27 - 29, 2022 to bring together experts from both academia and industry at IIT Mandi
https://whrda22.iitmandi.ac.in/
• Delivered an Institute talk at IIT Mandi on "Challenges and considerations for Machine Learning in Brain-Computer Interfaces"
• Delivered a talk on "Advanced sensors and ML for Brain-machine interfaces" AICTE - AU - Short Term Training Program on "Data Science Applied to Measurement and Control" organized by the Department of Instrumentation Engineering, MIT Campus, Anna University.
• Delivered a keynote lecture on "Advanced Sensors for Brain Computer Interfaces" at the FDP on Advances in Control systems and Sensor Technologies -IIIT Pune.

• Delivered a keynote lecture on "Brain Computer Interfaces" at FDP on Machine and Deep learning-opportunities in Industry and Research held at MSRIT, Bangalore.

PUBLICATIONS

Book chapters

1. S. Dhanunjay Reddy, Shubhangi Goyal, **Tharun kumar Reddy**, Ramana Vinjamuri, Javier Andreu-Perez (2023)., "Riemannian Deep Feature Fusion with auto-encoders for MEG Depression Classification in Smart Healthcare applications" in *Data Fusion Techniques and Applications for Smart Healthcare*, edited by Stefano Berretti and Amit Kumar Singh, part of the book series *Intelligent Data-Centric Systems, Book Series Intelligent Data-Centric Systems, Elsevier.*
   (Link: https://www.sciencedirect.com/science/article/abs/pii/B978044313233900014X)
2. Sanjeev Kumar Varun, **Tharun Kumar Reddy Bollu,** Marios Antonakakis, Prof. Michelis Zervakis (2023)., "Epileptic Spike Localization using MEG MRI modality Fusion for Intelligent Smart Healthcare" in *Data Fusion Techniques and Applications for Smart Healthcare*, edited by Stefano Berretti and Amit Kumar Singh, part of the book series *Intelligent Data-Centric Systems, Book Series Intelligent Datacentric Systems, Elsevier. (Link: https://www.sciencedirect.com/science/article/abs/pii/B9780443132339000151)*
3. Chaudhary, A.K., Gupta, V., Gaurav, K., **Reddy, T.K.** and Behera, L., 2023. Eeg control of a robotic wheelchair. In *Human-Robot Interaction-Perspectives and Applications*. IntechOpen. *(Link: https://www.intechopen.com/chapters/86899) (citations: 5)*
4. Reddy, S.D. and **Reddy, T.K.,** 2024. A Regularized Riemannian Intelligent System for Dementia Screening Using Magnetoencephalography Signals. In *Artificial Intelligence Enabled Signal Processing based Models for Neural Information Processing* (pp. 136-149). CRC Press. (Link: https://www.taylorfrancis.com/chapters/edit/10.1201/9781003479970-9/regularized-riemannian-intelligent-system-dementia-screening-using-magnetoencephalography-signals-srikireddy-dhanunjay-reddy-tharun-kumar-reddy)
5. Sharma, Neha. and **Reddy, T.K.,** 2024. Explainable AI Methods for Interpreting Emotions in Brain–Computer Interface EEG Data. Accepted for publication as a book chapter in Emerging Frontiers in Human-Robot Interaction, Springer Nature.
6. BJ Vijaya Kumar and **Reddy, T.K.,** 2024. Electric vehicle technical design and infrastructure components. Accepted for publication as a book chapter in the book Electric Vehicle Charging Infrastructure Planning and Design for Sustainable Urban Development, Springer Nature.

Journal papers

Impact factors, Q1/Q2 and citations to date were included.

1. Reddy, T.K., Arora, V., Gupta, V., Biswas, R. and Behera, L., 2021. EEG-Based Drowsiness Detection with Fuzzy Independent Phase-Locking Value Representations Using Lagrangian-Based Deep Neural Networks. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 52(1), pp.101-111. (Impact Factor: 11.471| Citations: 27, Q1, Digital Object Identifier 10.1109/TSMC.2021.3113823).
2. Reddy, T.K., Arora, V., Kumar, S., Behera, L., Wang, Y.K. and Lin, C.T., 2019. Electroencephalogram based reaction time prediction with differential phase synchrony representations using co-operative multi-task deep neural networks. IEEE Transactions on Emerging Topics in Computational Intelligence, 3(5), pp.369-379. (Impact Factor: 4.34 | Citations: 29, Q1, Digital Object Identifier 10.1109/TETCI.2018.2881229).
3. Reddy, T.K., and Laxmidhar Behera., 2022. 'Driver Drowsiness Detection using Intelligent BCI', IEEE Systems, Man and Cybernetics: Systems Magazine, 8(1), pp.16-28. (Impact Factor: 11.471| Q1, Citations:18, Digital Object Identifier 10.1109/MSMC.2021.3069145).
4. Reddy, T.K., Arora, V. and Behera, L., 2018. HJB-equation-based optimal learning scheme for neural networks with applications in the brain–computer interface. IEEE Transactions on Emerging Topics in Computational Intelligence, 4(2), pp.159-170. (Impact Factor: 4.34 | Citations: 15, Q1, Digital Object Identifier 10.1109/TETCI.2018.2858761)
5. Kumar, S., Reddy, T.K. and Behera, L., 2019. Divergence Framework for EEG based Multiclass Motor Imagery Brain Computer Interface. arXiv preprint arXiv:1901.07457.
6. Reddy, T.K., Arora, V., Behera, L., Wang, Y.K. and Lin, C.T., 2019. Multiclass fuzzy time-delay common

spatio-spectral patterns with fuzzy information theoretic optimization for EEG-based regression problems in brain–computer interface (BCI). IEEE Transactions on Fuzzy Systems, 27(10), pp.1943-1951. (Impact Factor: 11.9 | Citations: 21, Q1, Digital Object Identifier 10.1109/TFUZZ.2019.2892921).

7. Varun SK, Bollu TK. WearNeuroNet: An Interpretable Light-Weight Deep Learning approach for Ictal-Interictal Classification for Limited Channel EEG Wearables. IEEE Sensors Letters. 2024 Jun 24. (Impact Factor: 2.2, Q2, https://doi.org/10.1109/LSENS.2024.3417453)

8. Meenakshinathan J, Gupta V, Reddy TK, Behera L, Sandhan T. Session-independent subject-adaptive mental imagery BCI using selective filter-bank adaptive Riemannian features. Medical & Biological Engineering & Computing. 2024 Jun 3:1-8. (Impact Factor: 2.7, Q2, https://doi.org/10.1007/s10484-023-09586-2)

9. Reddy SD, Reddy TK. Delaunay Triangulated Simplicial Complex Generation for EEG Signal Classification. IEEE Sensors Letters. 2024 Apr 24. (Impact Factor: 2.2 | Citations: 2, Digital Object Identifier 10.1109/LSENS.2024.3392982).

10. Kumar Gaurav, Reddy TK. Characterizing Neural Activity During Video Game Engagement Using EEG Sensor Based Topological Dynamics Analysis. IEEE Sensors Letters. 2024 Oct 21. (Accepted for publication) (Impact Factor: 2.2, Q2).

11. Behera CK, Reddy TK*, Behera L, Birbaumer N, Ika K. A meditation based cognitive therapy (HMBCT) for primary insomnia: a treatment feasibility pilot study. Applied Psychophysiology and Biofeedback. 2023 Sep;48(3):369-78. (* indicates joint first author) (Impact Factor: 2.2, Q2, Citations: 6)

Selected peer-reviewed conference papers

1. Reddy, S.D. and **Reddy, T.K.**, 2024, April. GM-VRC: Semantic Topological Data Ensemble Approach for EEG Signal Classification. In *ICASSP 2024-2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 1971-1975). IEEE (Core A conference).

2. Gaurav, K., Jain, H. and **Reddy, T.K.**, 2024, June. Characterizing neural activity from EEG signals during game interaction using persistent homology. In 2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1-7). IEEE.

3. Sharma, N. and **Bollu, T.K.R.**, 2024, June. Ablation studies towards interpretable ensemble deep neural networks for mental health classification. In 2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1-7). IEEE.

4. Adarsh, P., Varun, S.K., and **Reddy, T.K.**, 2024, October, EEG-based Reaction Time Prediction using Covariance 2D Convolutional Neural Network, in proceedings at ICPR 2024 (Core A conference)

5. Varun, S.K., Adarsh, P., and **Reddy, T.K.,** 2024, October, A Spiking Neural Network Framework for Classifying Ictal and Interictal Epileptic States, in proceedings at ICPR 2024 (Core A conference)

6. Reddy, S.D., **Reddy, T.K.** and Higashi, H., 2024, February. Chromatic Alpha Complex Generation for EEG Signal Classification. In *2024 National Conference on Communications (NCC)* (pp. 1-5). IEEE.

7. Reddy, S.D., Gaurav, K. and **Reddy, T.K.,** 2023, November. Schizophrenia and Bipolar Psychosis Classification with rsfMRI Functional Connectivity Feature Fusion technique using Super Learner. In *2023 IEEE Silchar Subsection Conference (SILCON)* (pp. 1-6). IEEE.

8. Gaurav, K., Reddy, S.D. and **Reddy, T.K.,** 2023, November. Entropy based EEG irregularity quantification in single-channel SSVEP-based BCIS. In *2023 IEEE Silchar subsection conference (SILCON)* (pp. 1-6). IEEE.

9. S. K. Varun, **T. K. Reddy**, S. Shrestha, "Automatic seizure detection employing machine learning-based late fusion techniques over behind-the-ear and the scalp EEG signals," 2023 IEEE India Council International Subsections Conference (INDISCON), Mysuru, India, 2023, pp. 1-4. (has been accepted for an oral presentation).

10. Singh, V. and **Reddy, T.K.,** 2023, August. EEG-Based Reaction Time Prediction with Fuzzy Common Spatial Patterns and Phase Cohesion using Deep Autoencoder Based Data Fusion. In *2023 IEEE 4th Annual Flagship India Council International Subsections Conference (INDISCON)* (pp. 01-05). IEEE.

11. Reddy, S.D., Goyal, S. and **Reddy, T.K.,** 2023, August. Riemannian Approach Based Depression classification using Transfer Learning for MEG signals. In *2023 IEEE 4th Annual Flagship India Council International Subsections Conference (INDISCON)* (pp. 1-4). IEEE.

12. Kumar Gaurav and **Reddy, T.K.,** 2023, July, Characterising neural activity from EEG signals during game interaction using persistent homology, in the proceedings of IEEE ICCCNT 2024, Mandi, India.

13. Sharma Neha and **Reddy, T.K.,** 2023, July, Ablation studies towards interpretable ensemble deep neural networks for mental health classification, in the proceedings of IEEE ICCCNT 2024, Mandi, India.

14. Harish Karneddi, B.J. Vijaya Kumar, Deepak Ronanki, and **Reddy, T.K.,** 2022, Potential Impacts and Severity Analysis of Onboard Electric Vehicle Battery Charging Infrastructure Against Sophisticated Cyber Threats" has been ACCEPTED at IEEE ONCON22

15. Swati Singh, Vinay Gupta, **T.K. Reddy**, 'Meditation and Cognitive Enhancement: A Machine Learning Based Classification Using EEG' submitted at IEEE Systems, Man and Cybernetics Conference, Prague 2022

16. V. Gupta, T. Kendre, **T.K. Reddy** and V. Arora, 'Comparative Performance Analysis of Scalp EEG and Ear EEG Based P300 Ambulatory Brain-Computer Interfaces Using Riemannian Geometry and Convolutional Neural Networks.' accepted and presented In 2022 IEEE, National Conference on Communications

17. V. Gupta, S. Swaminathan, **T.K. Reddy**, 'Performance Study of Neural Structured Learning Using Riemannian Features for BCI Classification.' accepted and presented In 2022 IEEE, National Conference on Communications

18. **T.K. Reddy,** Yu-Kai Wang, CT Lin and Javier Andreu-Perez. 'Joint Approximate Diagonalization Divergence based scheme for EEG Drowsiness Detection Brain Computer Interfaces.' accepted as an oral presentation paper at IEEE International Conference on Fuzzy Systems (Fuzz-IEEE 2021), Luxembourg), 2021

19. **T.K. Reddy,** Vipul Arora, Laxmidhar Behera, Yu-Kai Wang and CT Lin, 'Optimal cooperative learning and spatial filtering with deep neural networks in EEG reaction time prediction for drowsiness estimation', presented at International Brain Computer Interface (BCI) meeting 2021 (top tier conference in brain computer interfaces, held once in two-three years) June, Brussels, Belgium.

20. Tushar P. Kendre, **T.K. Reddy,** Madhur D. Jain, Satyam Kumar and Laxmidhar Behera, 'Online SSVEP based Controller using Adaptive Riemannian Geometry', presented at International Brain Computer Interface (BCI) meeting 2021 (top tier conference in brain computer interfaces, held once in two-three years) June, Brussels, Belgium.

21. Passive BCI Hackathon NEC-2021 Submission of team-iBCI, S Singh, V Gupta, **TK Reddy**, V Arora – accepted and presented at International Neuro-ergonomics Conference, Nov 2021

22. **T.K. Reddy,** Vipul Arora, Laxmidhar Behera, Yukai Wang, and CT Lin. 'Fuzzy Divergence Based Analysis For EEG Drowsiness Detection Brain Computer Interfaces.' published as an oral presentation paper at IEEE International Conference on Fuzzy Systems (Fuzz-IEEE 2020) (Glasgow, UK), IEEE WCCI, 2020.

23. Satyam Kumar, **T.K. Reddy,** Laxmidhar Behera, 'Formulating Divergence Framework for Multiclass Motor Imagery EEG Brain Computer Interface', published as a paper in the proceedings of IEEE International conference on Acoustics, Speech and Signal Processing (ICASSP), 14 May 2020

24. **T.K. Reddy,** Vinay Gupta, and Laxmidhar Behera. 'Autoencoding Convolutional Representations for Real-Time Eye-Gaze Detection.' In Computational Intelligence: Theories, Applications and Future Directions Volume II, pp. 229-238. Springer, Singapore, 2019.

25. Kumar, S., **T.K. Reddy** and Behera, L., 2018, October. EEG based motor imagery classification using instantaneous phase difference sequence. In 2018 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 499-504). IEEE.

26. Arora, V., Behera, L.**, Reddy, T.K.** and Yadav, A.P., 2017, May. HJB equation based learning scheme for neural networks. In 2017 International Joint Conference on Neural Networks (IJCNN) (pp. 2298-2305). IEEE. (Core A conference)

27. **Reddy, T.K.** and Behera, L., 2016, October. Online eye state recognition from EEG data using deep architectures. In 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 000712-000717). IEEE.

28. Behera, C.K., **Reddy, T.K.**, Behera, L. and Bhattacarya, B., 2014, September. Artificial neural network based arousal detection from sleep electroencephalogram data. In 2014 International Conference on Computer, Communications, and Control Technology (I4CT) (pp. 458-462). IEEE.

PATENTS

1. T. K. Reddy and S. D. Reddy, "A SYSTEM AND METHOD FOR DEPRESSION STAGE DETECTING HUMAN-COMPUTER INTERACTION," IPO Appl. No. 202311083936, December 8, 2023. [Filed]

2. 2. T. K. Reddy and K. Gaurav, "AN ARTIFICIAL INTELLIGENCE (AI) BASED ADAPTIVE PROMPT LEARNING ASSISTED DEVICE AND METHOD FOR EFFECTIVE MENTAL HEALTH," IPO Appl. No. 202311083935, December 8, 2023. [Filed]

STUDENT SUPERVISION

- Open-Source Code Developed
- https://github.com/islitik123/HJBpaperIJCNN2017
- **Graduate research**
- Sanjeev Kumar Varun, PhD Candidate, Expected graduation May 2025/Dec 2024.
- Dhanunjay Reddy, PhD Candidate. joined. Dec 2021.
- Kumar Gaurav, PhD Candidate. Joined. August 2022.
- Vivek Singh, PhD Candidate. Joined. December 2022.
- Neha Sharma, PhD Candidate. Joined. December 2022.
- Pavani Prapurna, PhD Candidate (part-time). Joined. December 2022.

Undergraduate research
- Lab based UG Project Students 2022
- Swapnil Singh, IIT Kanpur Surge Research Fellow
- Saloni Gavde, Government College of Engineering Pune, SPARK Research Fellow
- Aarush Sharma, CISCO Research Fellow and Dheeraj Dhillon, Microsoft Research Fellow
- Vaishnavi Dayanand and Dipankar Chakravorty, MathWorks Research Fellow
- Lakshya Taragi, Samsung Research Fellow
- Kunal Dagar and Shlok Gaur, MathWorks Research Fellows

PhD proposal and dissertation committees
- Department of Hydro and Renewable Engineering: BJ Vijaya Kumar 21901011, PhD candidate (part-time) (passed Seminar)

Institute and Department Services
- Member of Samsung Research Awards Committee (August 2020-Current)
- Member of Smart Sensors and Electronic Systems Committee (Dec 2020-Current)
- Member of Communications and Signal Processing Committee (August 2021 -Current)

Journals:
- Review Editor for Frontiers in Neuroscience, Reviewer for Biomedical Signal Processing and Control, Reviewer for Scientific Reports, Springer Nature, Reviewer for Transactions on Consumer Electronics, Reviewer for IEEE Sensor Letters, Reviewer for
- IEEE Transactions on Cognitive and Developmental systems
- IEEE Signal Processing Letters
- IEEE Transactions on Emerging Topics in Computational Intelligence
- IEEE Transactions on Artificial Intelligence
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Neural Systems and Rehabilitation Engineering
- IEEE Journal of Biomedical and Health Informatics
- IEEE Transactions on Fuzzy Systems
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Automation Science and Engineering
- IEEE Access
- IEEE Transactions on Multimedia
- International Conference on Control, Decision and Information Technologies
- ISA Transactions

Conferences (TPC (Technical Program committee member))
- Session Chair, Neural Networks Theory, IJCNN 2017
- Chaired IEEE International Symposium on Computational intelligence for Brain Computer Interfaces http://www.ieeessci2020.org/symposiums/cibci.html.
- TPC Member (IEEE IJCNN, WCCI, 2021, 2022, 2023), NCC 2023
- Session Chair, MBCC, 2023
- Reviewer for IEEE SMC since 2018

References
- Dr. Laxmidhar Behera
  Director Indian Institute of Technology, Mandi
  Professor, Indian Institute of Technology, Kanpur
  Kanpur, UP-208016
  Email: lbehera@iitk.ac.in

- Dr. Pawan Goyal
  Associate Professor
  Indian Institute of Technology, Kharagpur
  Email: pawang@cse.iitkgp.ac.in
- Dr. Vipul Arora, Associate Professor, Ex-Amazon Alexa, Indian Institute of Technology, Kanpur Kanpur, UP-208016, Email: vipular@iitk.ac.in
- Krishna Ika, CEO BrainWave Science Inc., Boston, USA, Email: kika@brainwavescience.com
- Dr. Ramana Vinjamuri, Associate Professor, Email: rvinjam1@umbc.edu
- Dr. Chin Teng Lin Distinguished Professor School of Computer Science University of Technology, Sydney Email: Chin-Teng.Lin@uts.edu.au T +61 2 95141687
- Dr. Yukai Wang Lecturer School of Computer Science University of Technology, Sydney Email: YuKai.Wang@uts.edu.au
- Dr. Deepak Ronanki, Assistant Professor, IIT Madras, India, email: dronanki@ieee.org

SERVICE, PROFESSIONAL ACTIVITIES, AND TECHNICAL LEADERSHIP

- **Institute Services**
- Member of Samsung Research Awards Committee (August 2020-Current)
- Member of Smart Sensors and Electronic systems Committee (Dec 2020-Current)
  - Member of Communications and Signal Processing Committee (August 2021 -Current)
- Organizing coordinator of multiple batches of PG advanced corporate executive courses on Data-science and Data engineering with Cloudxlab, Intellipaat Inc. (more details are available at: https://www.youtube.com/watch?v=zjzuDPtK0OA). Through such courses, a lot of revenue has been generated to the institute through the corporates who are attending the course.
- **Department Services**
- Member of Smart Sensors and Electronic systems Committee (Dec 2020-Current)
- Member of Communications and Signal Processing Committee (August 2021 -Current)
- Member of Electronics and Communication Engineering, Department Research Committee (August 2023 - Current)
- **Panels and Study Sections**
  Dates of the panels are confidential.
  - Part of the Reading group SIGML at IIT Kanpur for panel discussions on Machine Learning
  - Panelist for BCI at THOST conference held at IIT Kanpur
- **Workshops organized**

  - SERB Karyashala Workshop, 2024 (Accepted and to be organized on Feb 24, 2024)
  - 1st Deep Learning for BCI Workshop. Organized by Prof. Laxmidhar Behera. 2019, Overall coordinator was myself).
  - 2nd Deep Learning for BCI Workshop at IIT Roorkee. Organized by Tharun Kumar Reddy and Yu-kai Wang. Scheduled for 2024.
- **Others**
  - Mentor at LearnGitaLiveGita Initiative (mentoring professionals, students and corporates across globe in spiritual education)
  - Faculty advisory board member of COER-ICAIA-2022 (IEEE International Conference on Artificial Intelligence and Applications)
  - National Advisory Board Member for 10th International Conference on Innovations in Electronics and Communication Engineering (ICIECE-2022)
  - Member of Department Advisory Board for the Department of Information Technology at Inderprastha Engineering College, Ghaziabad.
  - Advisory Committee member of IEEE International Conference on Smart Technologies for Sustainable Development Goals (ICSTSDG'24)

My Teaching feedback from students at IIT Roorkee (out of five points)

## Response Form Report for ESS-102, Environmental Science and Sustainability

Employee ID: 100953	Name: THARUN KUMAR REDDY BOLLU	Department: Electronics and Communication Engineering
Subject Code: ESS-102	Subject Name: Environmental Science and Sustainability	Credits: 3
Course Score: 4.53	Faculty Score: 4.64	No. of Student Responded: 17

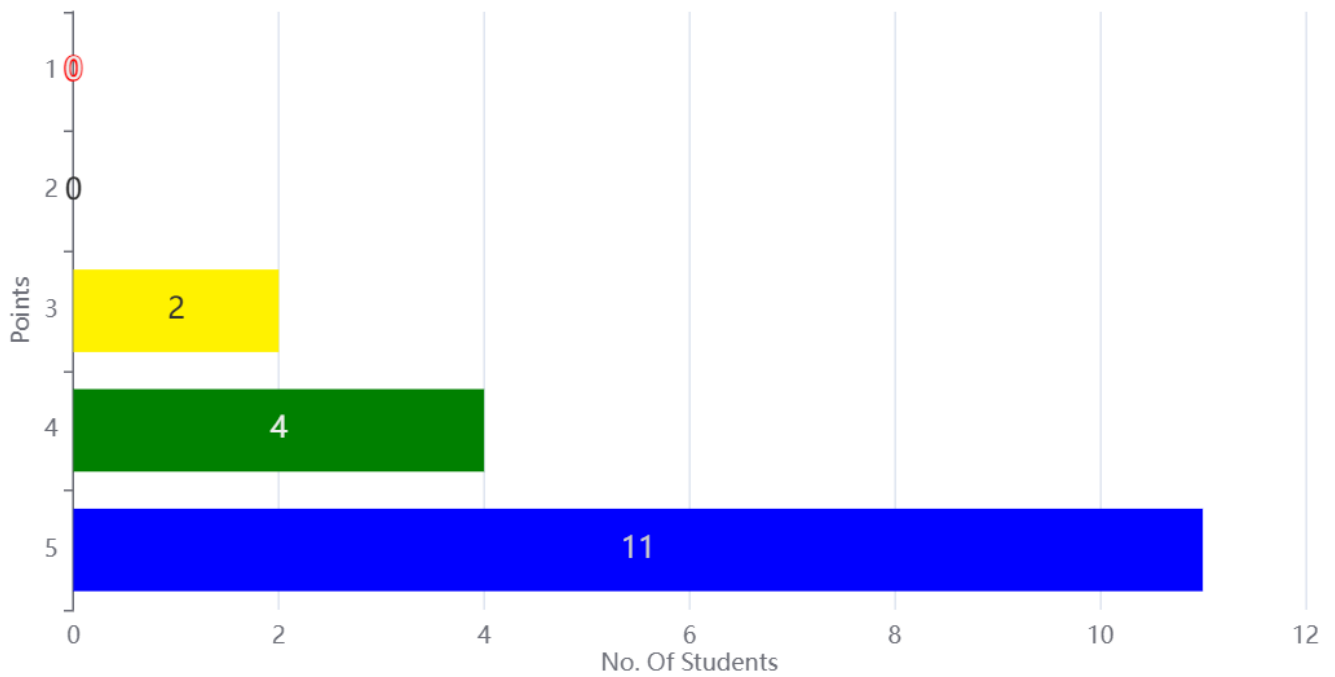## About the Course
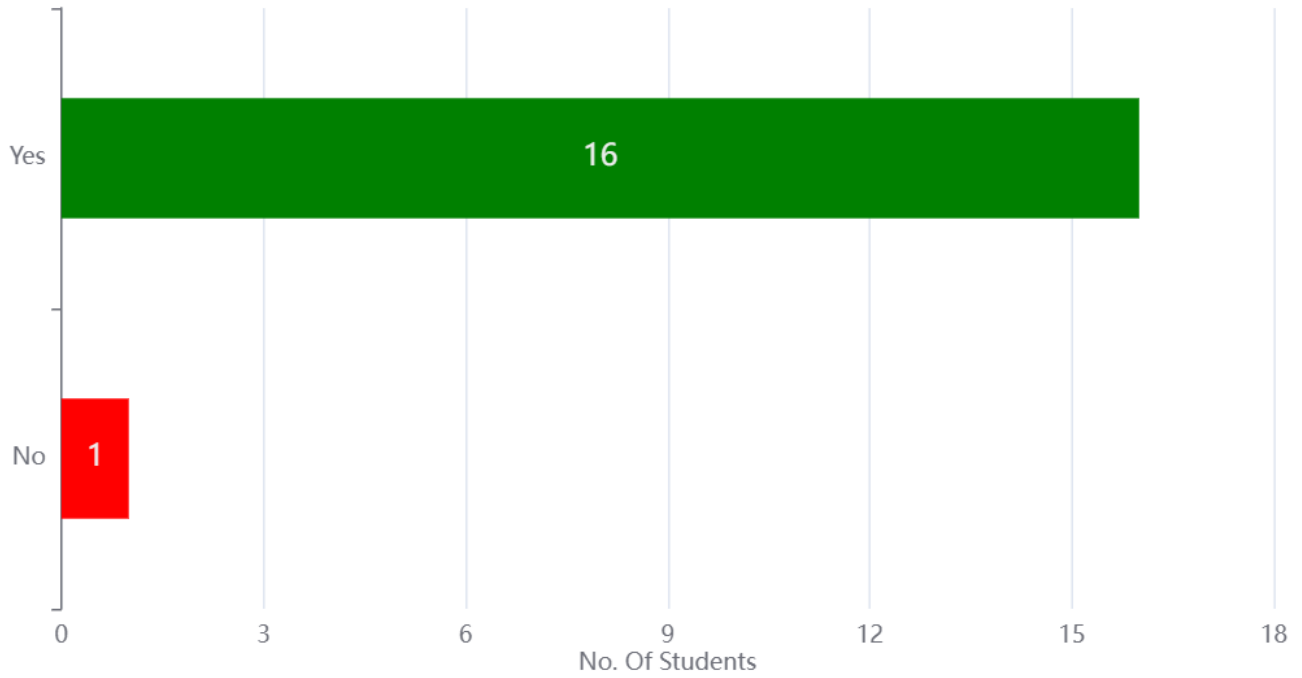
1. The content of the course as per its objective :
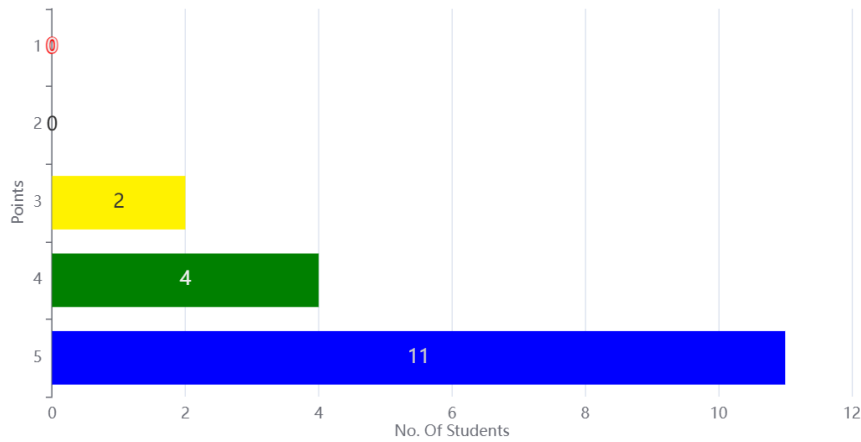
2. The relevance of the course in the present context :
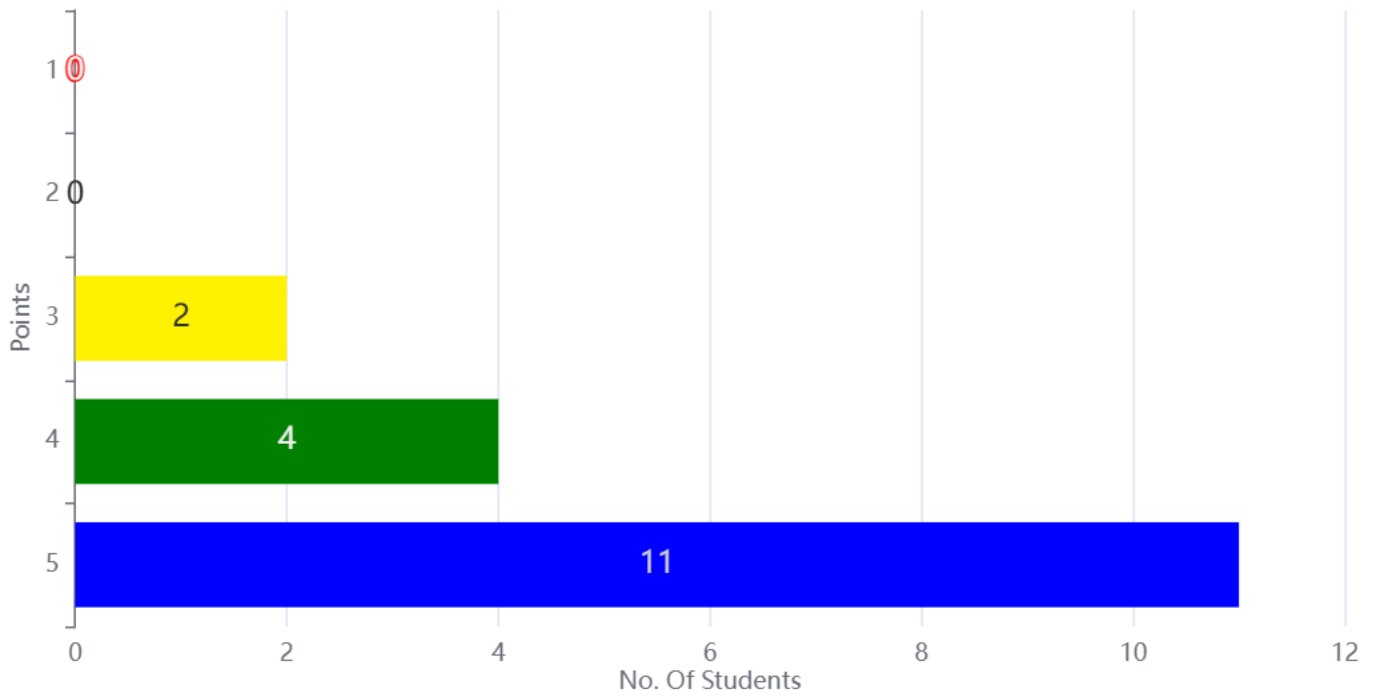
3. The learning outcome(s) for you from this course :

4. Are the suggested study materials available :

Yes — 16
No — 1

No. Of Students

5. Did the course make you interested to study further :

Yes — 15
No — 2

No. Of Students
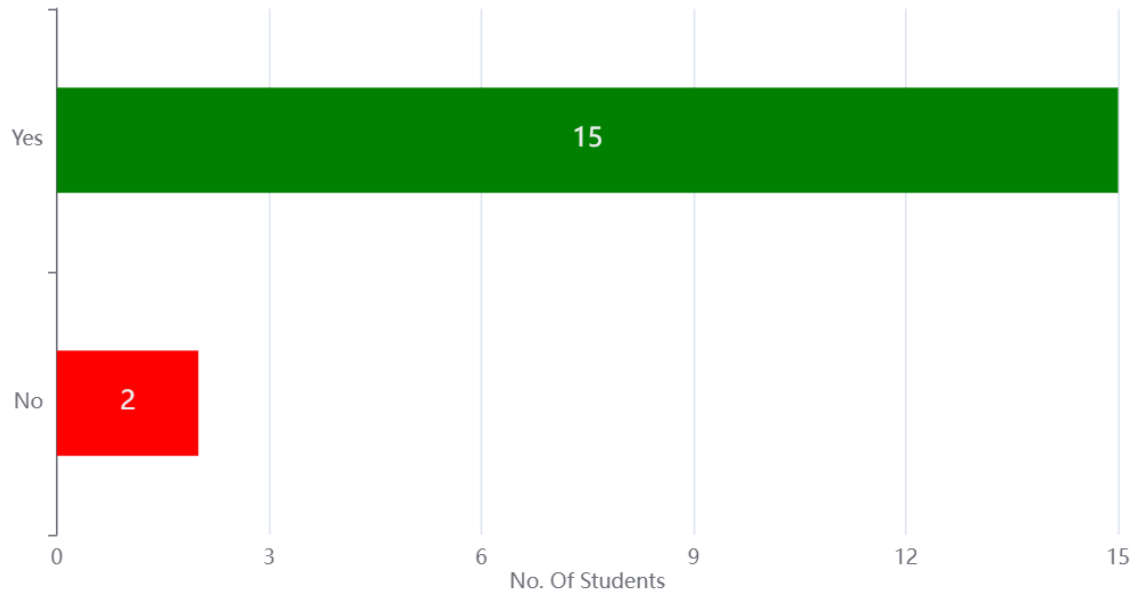
If "No", Reason :

6. Your suggestion for improvement in the course content:

- No suggestions
- The course is already well-designed.

About the Teacher

1. The regularity of classes taken by the faculty member :
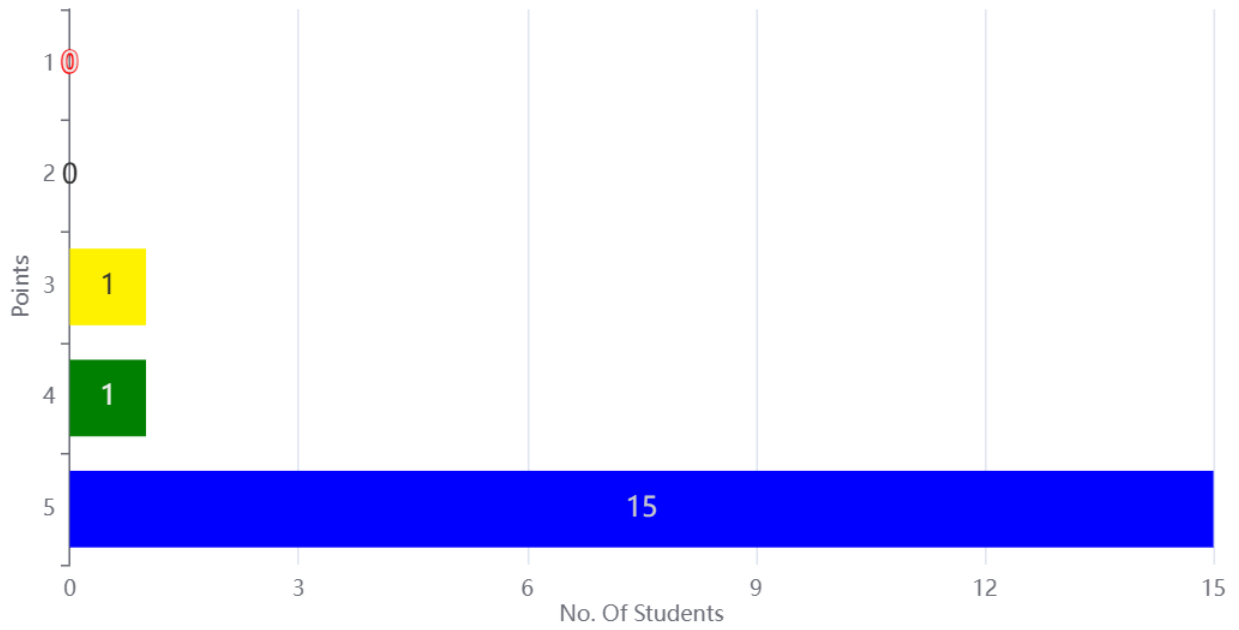
2. The preparedness, clarity and command of the faculty member for the class :
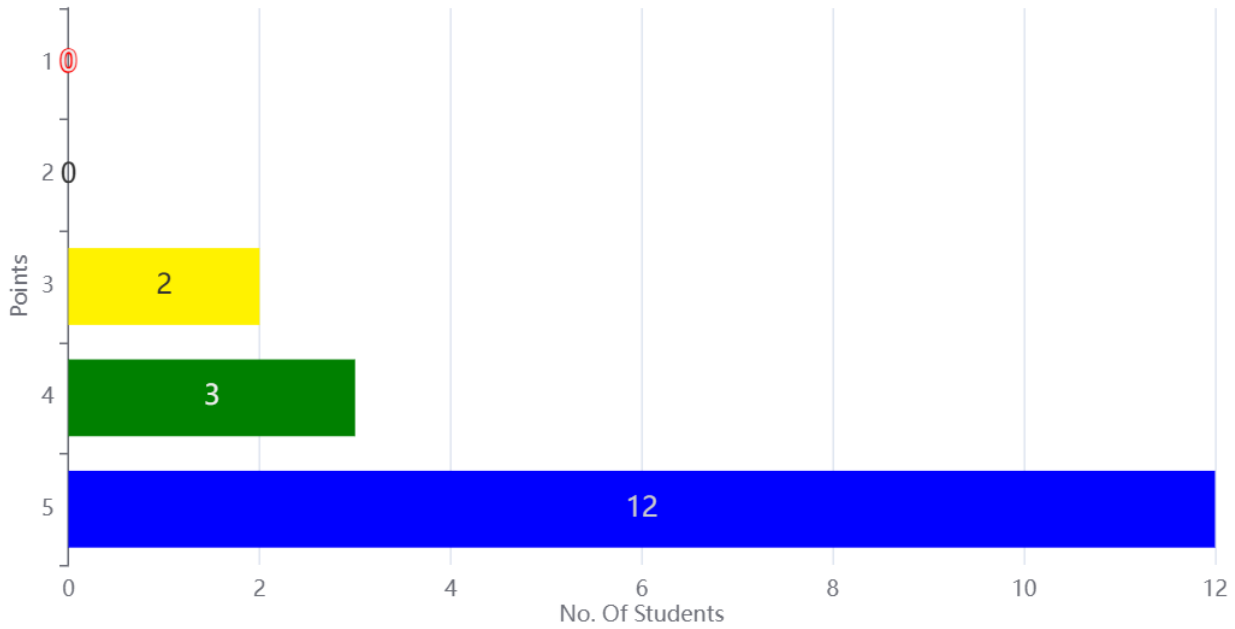
3. Interaction and engagement by faculty member in the class :
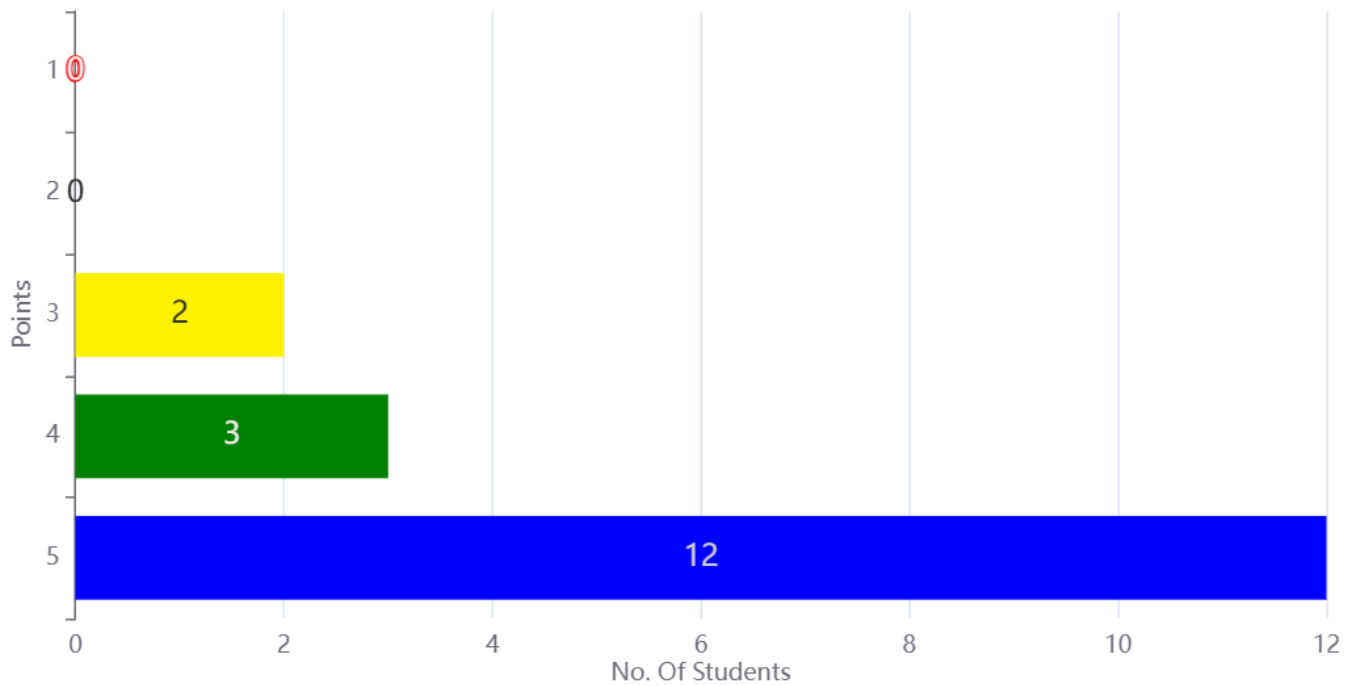
4. Accessibility of the faculty member beyond the classroom :
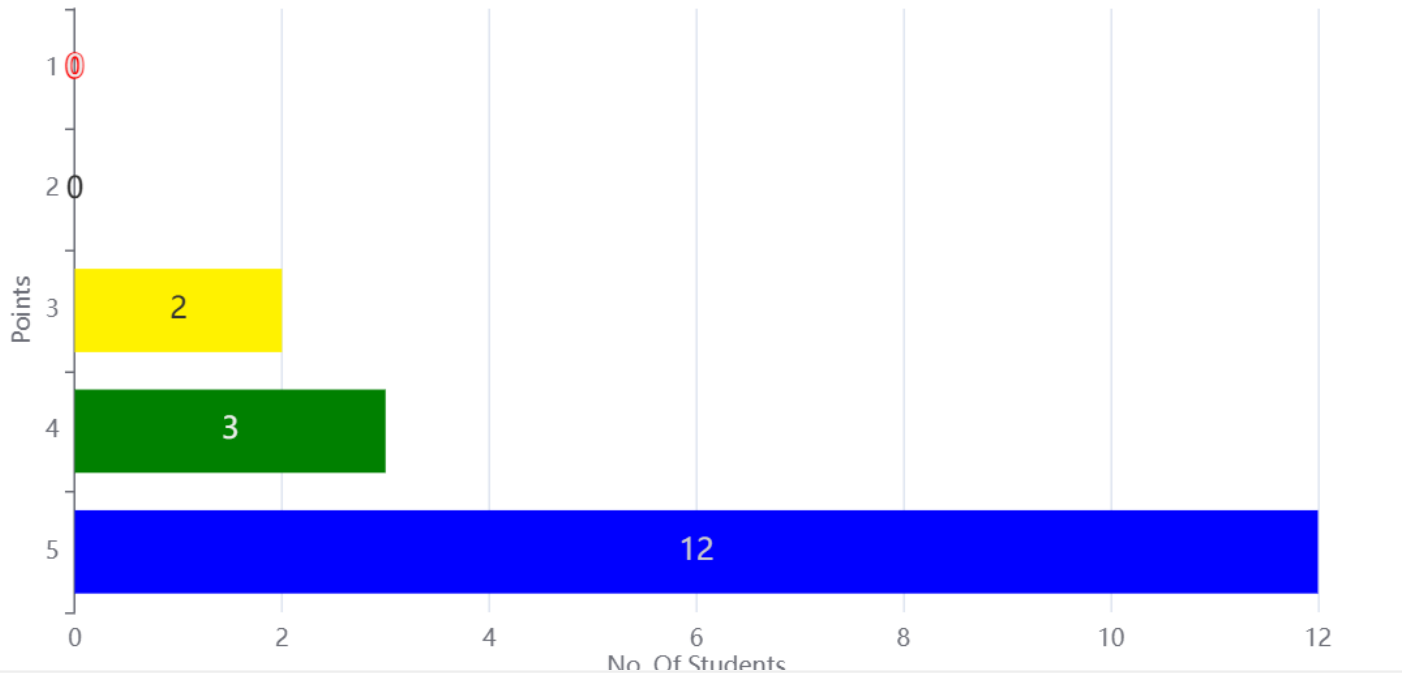
5. Is the faculty member impartial :
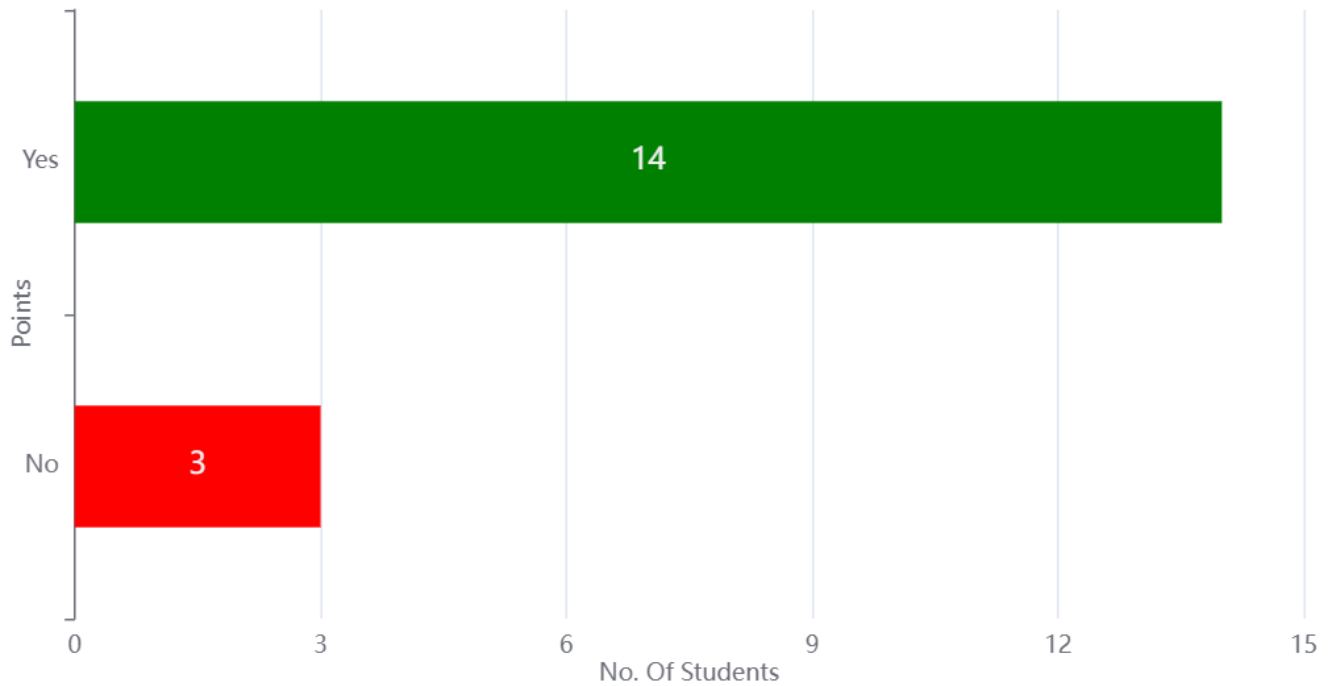
6. Your overall perception on teaching approach of the faculty member in this course :
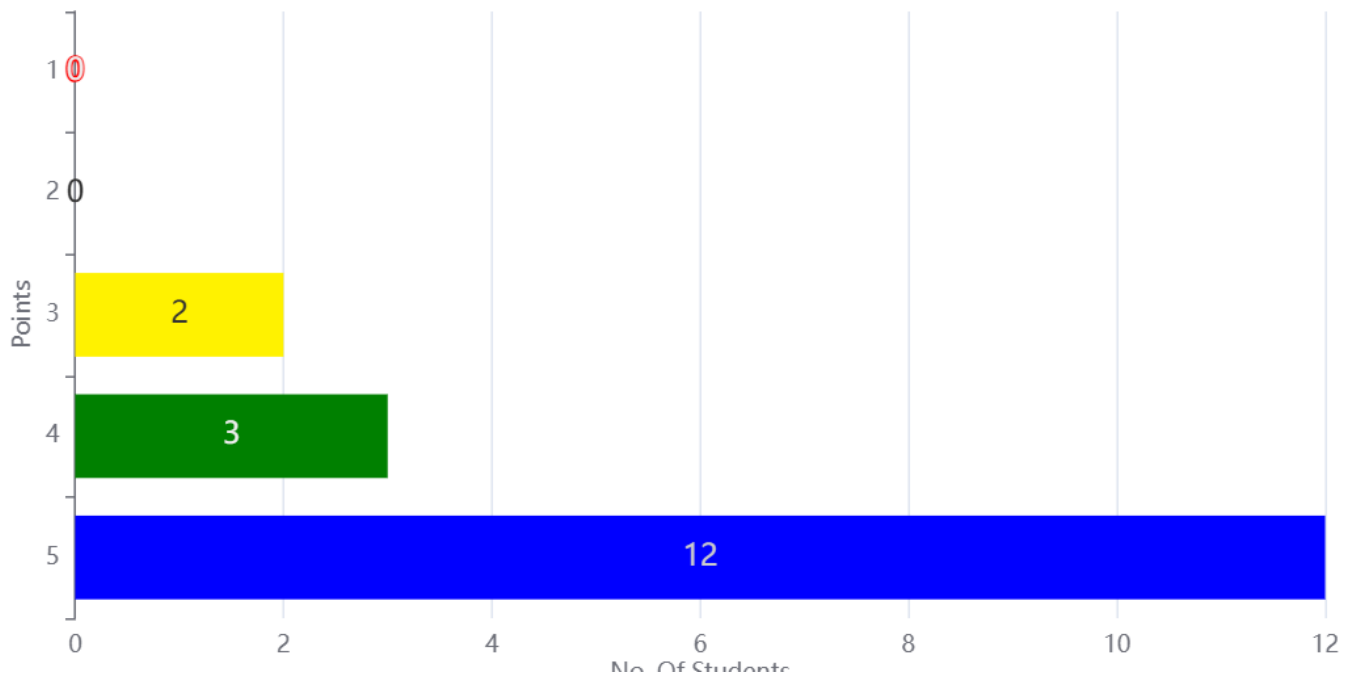
7. comments on any attributes about the faculty member including teaching methodology :

- Interesting classes
- Excellent!

भारतीय प्रौद्योगिकी संस्थान कानपुर
Indian Institute of Technology Kanpur

No/A (PG)/Roll. No./13104196/2020

Date: September 29, 2020

CERTIFICATE

This is to certify that **Mr. Tharun Kumar Reddy Bollu, Roll No. 13104196**, has successfully completed all the requirements for the award of degree of **Doctor of Philosophy (PhD)** in **Electrical Engineering** from Indian Institute of Technology, Kanpur on **July 6, 2020** securing a CPI of **9.60** out of the maximum CPI of 10.00.

The title of his thesis is:

Optimal learning and filtering approaches for EEG based Reaction Time prediction

The degree shall, however, be conferred in the next Convocation subject to **the student completing No-Dues from the Institute** and subsequent approval of graduation by the Senate and by Board of Governors of the Indian Institute of Technology, Kanpur.

Assistant Registrar
(Academic Affairs)

सहायक कुलसचिव (शैक्षिक कार्य)
Assistant Registrar (Academic Affairs)
भारतीय प्रौद्योगिकी संस्थान, कानपुर
Indian Institute of Technology, Kanpur

क्रम सं./Serial No.: PG-54U954CP अनुक्रमांक/Roll No. 13104196

विद्या परिषद की अनुशंसा पर

भारतीय प्रौद्योगिकी संस्थान कानपुर

के संचालक मण्डल द्वारा

थरून कुमार रेड्डी बोल्लू

को

डॉक्टर ऑफ फिलॉसफी

की उपाधि

समस्त सम्मानों विशेषाधिकारों व दायित्वों के साथ

बाईस अक्टूबर दो हजार बीस को कानपुर में

प्रदान की गयी।

THE BOARD OF GOVERNORS
OF THE

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

UPON THE RECOMMENDATION OF THE SENATE
HEREBY CONFERS ON

THARUN KUMAR REDDY BOLLU

THE DEGREE OF

DOCTOR OF PHILOSOPHY

WITH ALL HONOURS, PRIVILEGES AND OBLIGATIONS
THEREUNTO PERTAINING

GIVEN AT KANPUR ON THIS TWENTY SECOND DAY OF OCTOBER
TWO THOUSAND TWENTY.

अध्यक्ष, संचालक मण्डल
CHAIRPERSON
BOARD OF GOVERNORS

कुलसचिव
REGISTRAR
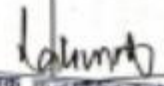
अध्यक्ष, विद्या परिषद
CHAIRPERSON
SENATE

डॉक्टर ऑफ फिलॉसफी उपाधि प्रौद्योगिकी स्नातकोत्तर तथा डॉक्टर ऑफ फिलॉसफी (संयुक्त उपाधि) के अन्तर्गत प्रदान की गयी।
Ph.D DEGREE AWARDED UNDER M.TECH. – Ph.D (JOINT DEGREE).

विद्या परिषद की अनुशंसा पर
भारतीय प्रौद्योगिकी संस्थान कानपुर
के संचालक मण्डल द्वारा
थरुन कुमार रेड्डी बोल्लू
को

प्रौद्योगिकी स्नातक
की उपाधि
विद्युत अभियांत्रिकी
में निर्धारित अर्हताएँ सफलतापूर्वक पूर्ण कर लेने पर
पाँच जुलाई दो हजार तेरह को
प्रदान की गयी।

THE BOARD OF GOVERNORS
OF THE
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
UPON THE RECOMMENDATION OF THE SENATE
HEREBY CONFERS ON
THARUN KUMAR REDDY BOLLU
THE DEGREE OF
BACHELOR OF TECHNOLOGY
IN
ELECTRICAL ENGINEERING
ON HAVING SUCCESSFULLY COMPLETED THE
PRESCRIBED REQUIREMENTS

GIVEN AT KANPUR ON THIS FIFTH DAY OF JULY
TWO THOUSAND THIRTEEN

अध्यक्ष, संचालक मण्डल
CHAIRMAN
BOARD OF GOVERNORS

कुलसचिव
REGISTRAR

अध्यक्ष, विद्या परिषद
CHAIRMAN
SENATE

क्र सं./Serial No.: MP-38Q484DA

अनुक्रमांक/Roll No 13194195

विद्या परिषद की अनुशंसा पर

भारतीय प्रौद्योगिकी संस्थान कानपुर

के संचालक मण्डल द्वारा

थरुन कुमार रेड्ढी बोल्लू

को

प्रौद्योगिकी स्नातकोत्तर

की उपाधि

विद्युत अभियांत्रिकी

में निर्धारित अर्हताएँ सफलतापूर्वक पूर्ण कर लेने पर
बाईस अक्टूबर दो हजार बीस को कानपुर में

प्रदान की गयी।

THE BOARD OF GOVERNORS
OF THE

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

UPON THE RECOMMENDATION OF THE SENATE
HEREBY CONFERS ON

THARUN KUMAR REDDY BOLLU

THE DEGREE OF

MASTER OF TECHNOLOGY

IN

ELECTRICAL ENGINEERING

ON HAVING SUCCESSFULLY COMPLETED THE
PRESCRIBED REQUIREMENTS

GIVEN AT KANPUR ON THIS TWENTY SECOND DAY OF OCTOBER
TWO THOUSAND TWENTY.

संचालक मण्डल अध्यक्ष
CHAIRPERSON
BOARD OF GOVERNORS

कुलसचिव
REGISTRAR

अध्यक्ष, विद्या परिषद
CHAIRPERSON
SENATE

अंतर्विषयक प्रौद्योगिकी स्नातकोत्तर उपाधि (संयुक्त उपाधि) के अन्तर्गत प्रदान की गयी
M.TECH. DEGREE AWARDED UNDER M.TECH. - Ph.D./JOINT DEGREES

email : dosa@iitk.ac.in , fax (0512) 2590957   Telephones : 2597198, 2597989

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
ACADEMIC SECTION
GRADE REPORT

13104196

THARUN KUMAR REDDY BOLLU

Department : ELECTRICAL ENGG.

Degree : DOCTOR OF PHILOSOPHY

Year & Semester	Course No.	Course Title	Credit	GRADE	SPI	CPI
2013-14 FIRST	EE621	REPRESENTATION AND ANALYSIS OF RANDOM SIGNALS	4	A		
	EE627	SPEECH SIGNAL PROCESSING	4	A		
	EE698J	KALMAN FILTERING & APPLICATIONS	4	B		
	EE698K	CHAOTIC DYNAMICAL SYSTEMS & CONTROL	4	A		
2013-14 SECOND	BSE653	BIOELECTRICITY AND BIO-ELECTRONIC DEVICES	4	A	9.50	9.50
	CS682	QUANTUM COMPUTING	4	B		
	MTH755	STATISTICAL INFERENCE	4	A		
	PHY695	NONLINEAR SYSTEM & DYNAMICS	4	A		
2014-15 FIRST	EE601	MATHEMATICAL METHODS IN SIGNAL PROCESSING	4	A	9.50	9.50
	EE799	PHD THESIS	8	2S		
	MTH686	NON-LINEAR REGRESSION	4	A		
2014-15 SECOND	EE799	PHD THESIS	16	4S	10.00	9.60
2014-15 SUMMER	EE799	PHD THESIS	8	2S		9.60
2015-16 FIRST	EE799	PHD THESIS	16	4S		9.60
2015-16 SECOND	EE799	PHD THESIS	16	4S		9.60
2016-17 FIRST	EE799	PHD THESIS	16	4S		9.60
2016-17 SECOND	EE799	PHD THESIS	16	4S		9.60
2016-17 SUMMER	EE799	PHD THESIS	8	2S		9.60
2017-18 FIRST	EE799	PHD THESIS	16	4S		9.60
2017-18 SECOND	EE799	PHD THESIS	16	4S		9.60
2017-18 SUMMER	EE799	PHD THESIS	8	2S		9.60
						9.60

Academic Section
I.I.T. Kanpur

Declaration :

सहायक कुलसचिव (शैक्षिक कार्य)
Assistant Registrar (Academic Affairs)

On completion of the graduating requirements, a declaration is recorded as "The Student has completed the Programme on ...."

1. Grading System :

Letter Grade	B.Tech/M.Sc Performance	Numerical Value
A	Excellent	10
B	Good	8
C	Average	6
D	Marginal	4
F	Fail	2
I	Incomplete	-
S	Satisfactory	-
X	Unsatisfactory	-
W	Waiver	-

Letter Grade	M.Tech/Ph.D Performance	Numerical Value
A	Excellent	10
B	Good	8
C	Average	6
D	Marginal	4
E	Fail	2
F	Fail	0
I	Incomplete	-
S	Satisfactory	-
X	Unsatisfactory	-
W	Waiver	-

2. Special Symbols :

SPI indicates Semester Performance Index
CPI Indicates Cumulative Performance Index

Letter R/S after letter grade indicates that the course has been repeated/substituted.

3. Minimum Graduating CPI :

B.Tech and 5 Yrs integrated M.Sc. Degree	: 5.00
2 Yrs M.Sc. Degree	: 6.00
BTech.-M.Tech.(DUAL)/M.Tech./M.DES./M.B.A. Degree	: 6.50
Ph.D. Degree / M.Sc. - Ph.D. (DUAL) Degree	: 7.00

Maximum CPI: 10.00

NOTE : NO CLASS OR DIVISION IS ASSIGNED IN ANY OF THE DEGREES SINCE 1982

email : doaa@iitk.ac.in • Fax : (0512) 2590534   Telephones : 2597195, 2597985

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
ACADEMIC SECTION
GRADE REPORT

THARUN KUMAR REDDY BOLLU

Department : ELECTRICAL ENGG.

Degree : BACHELOR OF TECHNOLOGY

Year & Semester	Course No.	Course Title	Credit	GRADE	SPI	CPI
2009-10 FIRST	ESC102N	INTRODUCTION TO ELECTRONICS	5	B		
	MTH101N	MATHEMATICS I	4	B		
	PE101	MORNING EXERCISE	0	S		
	PHY103N	PHYSICS - II	4	B		
	PSY152	APPLICATION OF PSYCHOLOGY TO LIFE	4	B		
	TA101N	ENGINEERING GRAPHICS	4	C		
2009-10 SECOND	CHM101N	CHEMISTRY LAB	2	B	7.6	7.6
	EE100	INTRODUCTION TO PROFESSION	0	S		
	ESC101N	FUNDAMENTAL OF COMPUTING	5	C		
	MTH102N	MATHEMATICS - II	4	B		
	PE102	EVENING EXERCISE	0	S		
	PHY101N	PHYSICS LAB	2	C		
	PHY102N	PHYSICS-I	4	B		
2010-11 FIRST	CHM201N	CHEMISTRY	4	A	7.2	7.4
	EE200	SIGNALS, SYSTEMS AND NETWORKS	4	C		
	ESO211	DATA STRUCTURES AND ALGORITHMS	4	C		
	MTH203N	MATHEMATICS - III	4	C		
	TA201N	INTRODUCTION TO MANUFACTURING PROCESSES	5	B		
2010-11 SECOND	ECO201	MICROECONOMICS - I			7.2	7.4
	EE210	MICROELECTRONICS-I	4	C		
	EE250	CONTROL SYSTEMS ANALYSIS	4	C		
	ESO209	PROBABILITY AND STATISTICS	4	B		
	ESO210	INTRODUCTION TO ELECTRICAL ENGINEERING	4	A		
			5	C		
2011-12 FIRST	EE320	PRINCIPLES OF COMMUNICATIONS	4	A	7.1	7.3
	EE330	POWER SYSTEMS	4	C		
	EE370	DIGITAL ELECTRONICS & MICROPROCESSOR TECHNOLOGY	4	B		
	EE380	ELECTRICAL ENGINEERING LAB I	4	B		
	EE698A	INTELLIGENT SYSTEMS AND CONTROL	4	A		
	SOC470	SOCIOLOGY OF DEVELOPMENT	4	A		
2011-12 SECOND	EE301	DIGITAL SIGNAL PROCESSING	4	A	8.7	7.6
	EE311	MICROELECTRONICS II	4	A		
	EE321	COMMUNICATION SYSTEMS	4	B		
	EE340	ELECTROMAGNETIC THEORY	4	B		
	EE381	ELECTRICAL ENGINEERING LAB II	4	B		
	SE301	QUANTUM PHYSICS	4	A		
2012-13 FIRST	EE491	PROJECT I	3	A	9.3	7.9
	EE604	IMAGE PROCESSING	4	A		
	EE650	BASICS OF MODERN CONTROL SYSTEMS	4	A		
	EE698E	QUANTUM INFORMATICS	4	A		
	SE314	CLASSICAL MECHANICS	4	B		
					9.6	8.2

Academic Section
I.T. Kanpur

Declaration : The Student has completed the Programme in May-2013

उप कुलसचिव (शिक्षा)
DEPUTY REGISTRAR (ACADEMIC)
भारतीय प्रौद्योगिकी संस्थान, कानपुर
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
ACADEMIC SECTION
GRADE REPORT

THARUN KUMAR REDDY BOLLU

Department : ELECTRICAL ENGG.

Degree : BACHELOR OF TECHNOLOGY

Year & Semester	Course No.	Course Title	Credit	GRADE	SPI	CPI
2012-13 SECOND	EE492	PROJECT II	5	A		
	EE698	DIGITAL VIDEO SIGNAL PROCESSING	4	A		
	EE670	WIRELESS COMMUNICATIONS	4	B		
	HSS403	SOCIAL AND BEHAVIOURAL ASPECTS OF HEALTH	4	A		
	SE312	ORDER AND CHAOS	4	B		
					9.2	8.3

The Student has completed the Programme in May-2013

DEPUTY REGISTRAR (ACADEMIC)
INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Declaration

On completion of the graduating requirements, a declaration is recorded as "The Student has comp...
the Programme on ....

1. **Grading System :**

Letter Grade	B.Tech/M.Sc Performance	Numerical Value
		10
A	Excellent	8
B	Good	6
C	Average	4
D	Marginal	2
F	Fail	-
I	Incomplete	-
S	Satisfactory	-
X	Unsatisfactory	-
W	Waiver	

Letter Grade	M.Tech/Ph.D Performance	Numerical Value
		10
A	Excellent	8
B	Good	6
C	Average	4
D	Marginal	2
E	Fail	0
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I	Incomplete	-
S	Satisfactory	-
X	Unsatisfactory	-
W	Waiver	-

2. **Special Symbols :**

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2 Yrs M.Sc. Degree	: 6.00
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Ph.D. Degree / M.Sc. - Ph.D. (DUAL) Degree	: 7.00

Maximum CPI : 10.00

NOTE : NO CLASS OR DIVISION IS AWARDED IN ANY OF THE DEGREES SINCE 1982

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
ACADEMIC SECTION
GRADE REPORT

email: dean@iitk.ac.in · Fax: (0512) 2590907

Department: ELECTRICAL ENGG.
Degree: DOCTOR OF PHILOSOPHY

THARUN KUMAR REDDY BOLLU

Year & Semester	Course No	Course Title	Credit	GRADE	SPI	CPI
2018-19 FIRST	EE799	PHD THESIS	16	AS		
2018-19 SECOND	EE799	PHD THESIS	16	AS		9.60
2018-19 SUMMER	EE799	PHD THESIS	0	OS		9.60
2019-20 FIRST	EE799	PHD THESIS	16	AS		9.60
2019-20 SECOND	EE799	PHD THESIS	0	OS		9.60
						9.60

TOTAL RESEARCH CREDITS= 192
The student has completed the
MTech and PhD (Joint Degree)
on 06-JUL-20 .

सहायक कुलसचिव (शैक्षिक कार्य)
Assistant Registrar (Academic Affairs)
भारतीय प्रौद्योगिकी संस्थान, कानपुर
Indian Institute of Technology, Kanpur

Academic Section
I.T. Kanpur

भारतीय प्रौद्योगिकी संस्थान कानपुर
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
कार्यालय, अधिष्ठाता शैक्षिक कार्य
DEAN OF ACADEMIC AFFAIRS' OFFICE

मनोज कुमार दिवाकर
Manoj Kumar Diwakar
उप कुलसचिव (शैक्षिक)
Deputy Registrar (Academic)

पता – आई.आई.टी. कानपुर – 208 016 (भारत)
Post Office : I.I.T., Kanpur - 208 016 (India)

May 31, 2013

CHARACTER CERTIFICATE

This is to certify that Mr. THARUN KUMAR REDDY BOLLU, Roll No. Y9623, S/o SHRI YADA GIRI REDDY BOLLU, was a bonafide student of this Institute from July-2009 to May-2013.

He has successfully completed all the requirements for the award of BACHELOR OF TECHNOLOGY (B.Tech.) degree in ELECTRICAL ENGINEERING in May 2013.

To the best of my knowledge, his conduct and character during his stay at this Institute were good.

(M K Diwakar)