

**Dr. Sushen Kirtania**

Assistant Professor

Department of Mechanical Engineering

Tezpur University, Tezpur-784028, Assam, India.

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Education:

- PhD, Mechanical Engineering, IIT Guwahati
- M.Tech. (Machine Design), Mechanical Engineering, IIT Guwahati
- B.E., Mechanical Engineering, Indian Institute of Engineering Science and Technology, Shibpur, West Bengal

Academic and research projects:

- PhD thesis on “Finite Element Analysis of Carbon Nanotube (CNT)-Reinforced Composites having a Broken CNT”.
- M.Tech thesis on “Finite Element Based Characterization of Carbon Nanotubes”.
- B.E. project on “Study on Various Industrial Problems of Industries in Howrah and Kolkata”.

Area of interest:

Graphene and CNT-reinforced nanocomposites, Natural and synthetic fiber-reinforced composites, Hybrid composites, Fracture mechanics, and Finite element method.

Awards and scholarships:

1. Best paper award in the 2nd international conference on recent and advanced composite materials, 2023.
2. Institute fellowship during Ph.D (from July 2007-August 2008)
3. GATE scholarship during M.Tech. (from July 2004- July 2006)

Teaching experience:

- From 2022 to till date: Associate Professor (Academic Level-13A), Department of Mechanical Engineering, Tezpur University.
- From 2019 to 2022: Assistant Professor (Academic Level-12), Department of Mechanical Engineering, Tezpur University
- From 2014 to 2019: Assistant Professor (Stage-II), Department of Mechanical Engineering, Tezpur University
- From 2008-2014: Assistant Professor (Stage-I), Department of Mechanical Engineering, Tezpur University

E-Content developed:

1. Advanced Solids Mechanics (PG, Core), 2. Finite Element Method in Engineering (UG, Elective), 3. Finite Element Methods (PG, Core), 4. Computer-Aided Engineering (UG, Core)

Courses developed:

1. Advanced Solids Mechanics (PG, Core), 2. Finite Element Method in Engineering (UG, PG, Elective), 3. Introduction to Fracture Mechanics (PG, Elective), 4. Failure Analysis of Materials (PG,

Elective), 5. Advanced Mechanics of Solids (UG, Elective), 6. Machine Design-I (UG, Core), 7. Machine Design-II (UG, Core), 8. Kinematics of Machinery (UG, Core), 9. Dynamics of Machinery (UG, Core), 10. Computer-Aided Engineering (UG, Core).

Courses taught:

Core courses

1. Mechanical Design, Solid Mechanics, 2. Theory of Mechanisms & Machines, 3. Computer-Aided Engineering, 4. Machine Drawing, 5. Manufacturing Technology-II, 6. Engineering Mechanics, 7. Engineering Graphics, 8. Advanced Solids Mechanics, 9. Finite Element Methods.

Electives courses

1. Finite Element Method in Engineering, 2. Mechanics of Composite Materials.

Laboratory courses

1. Theory of Machine Laboratory, 2. Strength of Materials Laboratory, 3. Vibration Laboratory.

Laboratory developed:

Advanced Solid and Fluid Mechanics Laboratory: There are two parts in this laboratory i.e solid mechanics and fluid mechanics. I have developed solid mechanics laboratory for M.Tech programme in applied mechanics, Department of Mechanical Engineering, Tezpur University.

Laboratory manual prepared:

1. Prepared engineering mechanics laboratory manual in 2017.
2. Prepared vibration laboratory manual in 2010.

Sponsored research project:

Project title: Underwater repair and maintenance of corroded steel structure using fiber-reinforced polymer nanocomposites.

Sponsor: IIT Guwahati Technology Innovation and Development Foundation (IITGTIDF) and this project is under Scheduled Caste Sub Plan (SCSP) on Technologies for Underwater Exploration.

International Journal:

1. Deka NP, Hazarika KP, Upadhaya N, Kashyap S, Ali A, **Kirtania S**, Banerjee S. Effect of hybridisation on the mechanical and weathering characteristics on jute-arecanut leaf epoxy composites. *Advances in Materials and Processing Technologies*. (Published online: 14-7-2024).

2. Bhadra R, Banerjee S, Mondal AK, **Kirtania S**, Kashyap S, Gogoi S, Mushahary S, Roy P. Numerical modeling of dynamic heat flow behaviour during friction stir welding of Al-Cu alloy. *International Journal on Interactive Design and Manufacturing*. (Published online: 13-7-2024).

3. Ali A, Kashyap S, **Kirtania S**. Investigation of the properties and weathering behaviour of arecanut sheath fibre reinforced epoxy composites. *Advances in Materials and Processing Technologies*. (Published online: 10-7-2024).

4. Parbin S, Kirtania S, Kashyap S. Investigation on mechanical and biodegradable behaviour of banana/betel nut shell fiber reinforced epoxy composites. *Biomass Conversion and Biorefinery*. (Published online: 02-03-2024)

5. Parbin S, **Kirtania S** and Kashyap S. Analytical and finite element analysis of natural fiber reinforced composites for application in food packaging industry. *Journal of The Institution of Engineers (India): Series D*. (Published online: 12 December 2023).

6. Choudhury ND, Saikia P, Saikia M, **Kirtania S**, Banerjee S, Kashyap S. Evaluation of elastic properties of CNT/GNP/epoxy hybrid nanocomposite for different weight fractions of CNT and GNP. *Journal of The Institution of Engineers (India): Series D*. (Published online: 16 October 2023).
7. Das M, **Kirtania S**, Kashyap S and Banerjee S. Evaluation of elastic properties of graphene reinforced aluminum matrix nanocomposites. *International Journal of Materials Engineering Innovation*. (Accepted on 02 September 2023).
8. Nandy AK, Ali A, Kashyap S, **Kirtania S** and Banerjee S. Modeling the mechanical properties and stress mapping of aluminium based metal matrix composite used in brake disc rotor. *International Journal of Materials Engineering Innovation*. (Accepted on 12 July 2023)
9. Banerjee S, Gogoi S, Siddiqui HR, **Kirtania S**, Kashyap S and Bhadra R. Development of Hall-Petch and Hollomon models for thermo-mechanically treated Al-Cu-Mg alloys with trace additions of Sn. *Advances in Materials and Processing Technologies*. (Published online: 20 Mar 2023).
10. Gogoi S, Siddiqui HR, Banerjee S, Kashyap S, **Kirtania S** and Bhadra R. Correlating fractography with mechanical properties of microalloyed 2219Al alloys under different thermo-mechanical conditions. *Advances in Materials and Processing Technologies*. (Published online: 20 Mar 2023).
11. Gogoi S, Siddiqui HR, Banerjee S, Kashyap S, **Kirtania S** and Bhadra R. Hall–Petch and Hollomon modeling for microalloyed 2219Al alloys under different thermo-mechanical treatments. *International Journal on Interactive Design and Manufacturing*. 18, 6543-6557, 2024.
12. Borah PP, Kashyap S, **Kirtania S** and Banerjee S. Finite element and numerical analysis for structural responses of natural fibre-based epoxy composites. *International Journal on Interactive Design and Manufacturing*, 18(4), 1955-1967, 2024.
13. Gogoi S, Banerjee S, **Kirtania S**, Kashyap S and Bhadra R. Computational modelling of tensile flow parameters for 2219Al alloys microalloyed with Cd. *International Journal on Interactive Design and Manufacturing*, 18(4), 2007-2016, 2024.
14. Kapila, K., **Kirtania, S.**, Devi, L.M., Saikumar, A., Badwaik, L.S. and Rather, M.A. Potential perspectives on the use of poly (vinyl alcohol)/graphene oxide nanocomposite films and its characterization. *Journal of Food Measurement and Characterization*, 18(2), 1012-1025, 2024.
15. Ali A, Kashyap S and **Kirtania S**. Mechanical and thermal characterization of jute fiber reinforced epoxy composites and lime sludge as a filler. *Journal of The Institution of Engineers (India): Series D*, 105(2), 1059-1067, 2024.
16. Borah CA, **Kirtania S**, Banerjee S and Kashyap S. Through thickness stress analysis of GNP/epoxy nanocomposites with low graphene content. *Journal of The Institution of Engineers (India): Series D*. 105(2), 1201-1208, 2024.
17. Barkataki R, Kalita Z, **Kirtania S**. Anthropomorphic design and control of a polycentric knee exoskeleton for improved lower limb assistance. *Intelligent Service Robotics*, 17, 555-577, 2024.
18. Borah PP, Kashyap S, Banerjee S and **Kirtania S**. Modeling the buckling characteristics of pineapple leaf fibre reinforced laminated epoxy composites. *Mechanics of Advanced Composite Structures*, 10(2), 233-246, 2023.
19. Bordoloi MM, **Kirtania S**, Banerjee S and Kashyap S. Analysis of stress through the thickness of hybrid laminated nanocomposites using finite element method. *Journal of The Institution of Engineers (India): Series D*. 104(2), 51-59, 2023.
20. Joardar SD, Neog A, Parvez S, **Kirtania S**, Kashyap S and Banerjee S. Micromechanics based finite element analysis of effective elastic properties of natural fiber reinforced composites. *Journal of Natural Fibers*, 19(17), 15790-15807, 2022.
21. Debnath S, Rava J, Sharma AJD, **Kirtania S**, Kashyap S, and Banerjee S. Experimental and finite element analysis of carbon fibre fabric/polypropylene composites under different

processing parameters. *International Journal of Engineering Trends and Technology*, 70(5), 30-36, 2022.

22. Mahmud A and **Kirtania S**. Evaluation of elastic properties of graphene nanoplatelet/epoxy nanocomposites. *Materials Today: Proceedings*, 44, 1531-1535, 2021.

23. Bora J and **Kirtania S**. Comparative study of elastic properties and mode I fracture energy of carbon nanotube/epoxy and carbon fibre/epoxy laminated composites. *Micro and Nano Systems Letters*, 8(19), 1-10, 2020.

24. **Kirtania S** and Chakraborty D. Determination of thermoelastic properties of carbon nanotube/epoxy composites using finite element method. *Journal of Material Engineering and Performance*, 27(7), 3783-3788, 2018.

25. Gohain BN and **Kirtania S**. Evaluation of axial Young's modulus of CNT-based composites using square, hexagonal and cylindrical representative volume elements. *ADBU Journal of Engineering and Technology*, 6(1), 00610601(6PP), 2017.

26. Saxena M and **Kirtania S**. Stiffness analysis of symmetric cross-ply laminated composite plates. *ADBU Journal of Engineering and Technology*, 4(1), 76-81, 2016.

27. **Kirtania S** and Chakraborty D. Failure analysis of carbon nanotube/epoxy composites having a broken carbon nanotube. *Journal of Reinforced Plastics and Composites*, 34(19), 1639-1647, 2015.

28. **Kirtania S** and Chakraborty D. Fracture behavior of carbon nanotube-based composites with a broken fiber using multi-scale finite element modeling. *Journal of Computational and Theoretical Nanoscience*, 11(3), 676-684, 2014.

29. **Kirtania S** and Chakraborty D. Analysis of carbon nanotube-reinforced alumina matrix nanocomposites with a broken fiber. *Journal of Reinforced Plastics and Composites*, 33(4), 389-398, 2014.

30. **Kirtania S** and Chakraborty D. Multi-scale modeling of carbon nanotube reinforced composites with a fiber break. *Materials and Design*, 35, 498-504, 2012.

31. **Kirtania S** and Chakraborty D. Finite element based characterization of carbon nanotubes. *Journal of Reinforced Plastics and Composites*, 26(15), 1557-1570, 2007.

Book Chapters:

1. Barkataki, R., Kalita, Z., and **Kirtania, S**. Finite element analysis of a novel lower extremity exoskeleton with a polycentric knee joint. In: *Recent Advances in Machines, Mechanisms, Materials and Design*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 475-488, 2024. [Edited by R.S. Kumar, S. Sanyal, and P.M. Pathak]

2. Kashyap S, **Kirtania S**, Banerjee S. Smart biomaterials for thermal regulation in biomedical applications. In: *Engineering Materials for Efficient Energy Storage and Conversion*. IGI Global, pp. 377-417, 2024. [Edited by A.K. Shukla, R.K. Phanden, and J.P. Davim]

3. Gogoi S, Kumar D, Banerjee S, **Kirtania S** and Kashyap S. Tribological characterization of microalloyed Al-Cu alloys by artificial neural network modelling. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 83-92, 2023.

4. Gogoi S, Boruah R, Ahmed M, Banerjee S, **Kirtania S** and Kashyap S. Design and fabrication of impression creep testing set-up and experimental validation with 2219Al alloys. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 93-106, 2023.

5. Borah PP, Kashyap S, **Kirtania S** and Banerjee S. Modeling of structural responses for pineapple leaf fibre epoxy composite. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 199-210, 2023.

6. Bordoloi MM, **Kirtania S**, Kashyap S and Banerjee S. Investigation of mechanical properties of carbon fiber/graphene nanoplatelet/epoxy hybrid nanocomposites. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 211-223, 2023.
7. Das BM, **Kirtania S**, Banerjee S and Kashyap S. Finite element analysis of natural hemp fiber-based composite for semi-elliptical multi leaf spring. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 225-237, 2023.
8. Gogoi S, Nath B, Kowar B, Bora A, Banerjee S, Kashyap S and **Kirtania S**. Investigating machinability of microalloyed Al-Cu alloys by simulation of cutting force. In: *Recent Advances in Materials Processing and Characterization*, Lecture Notes in Mechanical Engineering. Publisher: Springer Nature Singapore, pp. 275-286, 2023.
9. Kapila K and **Kirtania S**. Fabrication and characterization of ramie fiber based hybrid composites. In: *Recent Advances in Mechanical Engineering*, Lecture notes in Mechanical Engineering. Springer, pp.839-848, 2021.
10. Bora J and **Kirtania S**. A comparative study on mechanical properties of carbon fiber/epoxy and carbon nanotube/epoxy composite laminates. In: *Spectrum: Recent Trends in Multidisciplinary Research*, Eudoxia Research Centre, Vol.1, pp. 510-524, 2020.
11. **Kirtania S** and Chakraborty D. Stress transfer characterization at fiber break in carbon nanotube-reinforced composites. In: *Advanced Nanomaterials and Nanotechnology - Springer Proceedings in Physics*, Springer, Vol.143, pp.333-346, 2013.
12. **Kirtania S**, Talukdar RG, Kalita TJ and Medhi P. Bending analysis of beams using finite element method. In: *Recent Advancements in Mechanical Engineering*, New Delhi, Excel India Publishers, pp.127-132, 2013.
13. **Kirtania S**, Kalita K, Gohain AP and Medhi J. Modeling and simulation of fiber-reinforced composites, and bending tests of bamboo. In: *Recent Advancements in Mechanical Engineering*, New Delhi, Excel India Publishers, pp. 231-238, 2013.
14. **Kirtania S** and Chakraborty D. Finite element based determination of effective Young's modulus and coefficient of thermal expansion of carbon nanotube-based composites. In: *Modelling and Simulation in Computational Mechanics: Engineering Applications*, Germany: Lambert Acad. Publ., pp.76-90, 2009.
15. **Kirtania S** and Chakraborty. Finite element based determination of Young's modulus and axial coefficient of thermal expansion of SWCNTs. In: *Recent Advances in Computational Mechanics and Simulations*, New Delhi: I. K. Int. Publ. House Pvt. Ltd, Vol.2, pp.2107-2113, 2006.

International Conferences:

1. Kapila K and Kirtania S. Development of PVA-based electro-spin nanofiber mats and its characterization. In the *Virtual Int. Scientific Conf. on Applications of Chemistry in Nanosciences and Biomaterials Engineering*, 22-24 November 2023; The Academy of Romanian Scientists.
2. Kapila K and **Kirtania S**. Fabrication and characterization of hybrid polyvinyl alcohol/carboxymethyl cellulose polymer films. In the *2nd Int. Conf. on Recent Advances in Composite Materials*, February 22-24, 2023; SRM Institute of Science & Technology, Kattankulathur Campus, Tamil Nadu, India.
3. Kapila K and **Kirtania S** and Badwaik LS. Mechanical and optical characterization of hybrid PVA-CMC based biodegradable films. In the *Int. Conf. on Sustainable Approaches in Food Engineering and Technology*, October 19-20, 2022; Tezpur University, Assam, India.
4. Parbin S, **Kirtania S** and Kashyap S. Investigation of mechanical property of a biodegradable composite for application in food packaging. In the *Int. Conf. on Sustainable Approaches in Food Engineering and Technology*, October 19-20, 2022; Tezpur University, Assam, India.

5. Ali A, Kashyap S and **Kirtania S**. Mechanical and thermal characterization of jute fiber reinforced epoxy composites for food packaging. In the *Int. Conf. on Sustainable Approaches in Food Engineering and Technology*, October 19-20, 2022; Tezpur University, Assam, India.
6. Bora J and **Kirtania S**. Enhancement of elastic and fracture properties of carbon nanotube-reinforced aluminum laminated composites. *AIP Conference Proceedings*, 2341, 020024-1-020024-10, 2021.
7. **Kirtania S** and Chakraborty D. Finite element based studies on elastic properties of carbon nanotube-reinforced metal matrix composites. In the *Int. Conf. on Advances in Mechanical Engineering*, January 16-18, 2020; Kolkata, India, pp.210-216.
8. Gautam S, Choudhary SA, Das G and **Kirtania S**. Fabrication and finite element analysis of L-pin mechanism for gearless power transmission. In the *Int. Conf. on Advances in Mechanical Engineering*, January 16-18, 2020; Kolkata, India, pp.415-420.
9. **Kirtania S** and Chakraborty D. Investigation of stress distribution and strain energy release rate in carbon nanotube/aluminum composites having a broken carbon nanotube. In the *4th Int. Conf. on Advanced Nanomaterials and Nanotechnology*, December 08-11, 2015; IIT Guwahati, India.
10. **Kirtania S** and Chakraborty D. Multi-scale analysis of carbon nanotube (CNT)-reinforced metal matrix composites with a broken fiber. In the *4th Int. Conf. on Recent Advances in Composite Materials*, February 18-20, 2013; Goa, India.
11. **Kirtania S** and Chakraborty D. Evaluation of thermoelastic properties of carbon nanotube-based composites using finite element method. In the proceedings of the *8th Int. Conf. on Mechanical Engineering*, December 26-28, 2009; Dhaka, Bangladesh, Paper no: AM-13.

National Conferences:

1. Borgohain P and **Kirtania S**. Finite element analysis of concrete railway sleeper. In the *Proceeding of Nat. Conf. on Advances in Mechanical Engineering*, May 27-28, 2021; SVNIT Surat, India, pp. 165-169.
2. Kalita MJ, Das P, Mahfuz T and **Kirtania S**. Finite element analysis of flywheels used for punching operation. In the *Proceeding of Nat. Conf. on Advances in Mechanical Engineering*, May 27-28, 2021; SVNIT Surat, India, pp.155-159.
3. Chaliha A, Sarkar A, Brahma S and **Kirtania S**. Comparative study between composite and conventional steel shafts using finite element method. In the *Nat. Conf. on Advances in Civil and Infrastructure Engineering*, February 16-17, 2018; Tezpur University, India.
4. **Kirtania S** and Chakraborty D. Representative volume element based finite element modeling of carbon nanotube (CNT)-reinforced composites with a broken CNT. In the proceedings of the *Nat. Conf. on Sustainable Mechanical Engineering: Today and Beyond*, March 25-26, 2017; Tezpur University, India, pp.61-67.
5. Gohain BN and **Kirtania S**. Comparison between square and hexagonal representative volume element for evaluation elastic properties of CNT-reinforced composites. In the proceedings of the *Nat. Conf. on Sustainable Mechanical Engineering: Today and Beyond*, March 25-26, 2017; Tezpur University, India, pp.93-98.
6. Talukdar S, Das N, Sinha D, Patni S, Kumar G, Meena BK, Dutta PP and **Kirtania S**. Fabrication and vibration analysis of shaft of a pedal powered washing machine. In the proceedings of the *Nat. Conf. on Sustainable Mechanical Engineering: Today and Beyond*, March 25-26, 2017; Tezpur University, India, pp.99-104.
7. Shukla SS, Kumar B, Kumar A and **Kirtania S**. Modeling and analysis of an in-house built tadpole type base structure of a human powered vehicle using finite element method. In the proceedings of *Advances in Civil and Infrastructure Engineering*, May 08-09, 2015; Tezpur University, India, pp.72-77.

8. Barua E, **Kirtania S** and Das A. Determination of elastic moduli of single layered Graphene sheets using finite element method. In the proceedings of *Advances in Civil and Infrastructure Engineering*, May 08-09, 2015; Tezpur University, India, pp.78-83.

PhD supervised:

1. Effect of hybridization on bamboo fiber reinforced composites. (Ongoing, from 2024) with Dr. Satadru Kashyap.
2. Analysis of jute fiber reinforced hybrid biocomposites. (Ongoing, from 2021) with Dr. Satadru Kashyap.
3. Investigation of mechanical, thermal, morphological, and biodegradable behavior of banana fiber-reinforced hybrid sustainable biocomposites. (Ongoing, from 2020) with Dr. Satadru Kashyap.
4. Study of PVA/CMC/GO hybrid nanocomposites for food packaging applications. (Ongoing, from 2019).

M. Tech. Project supervised:

1. Finite element analysis of steel structure used in underwater applications. (Ongoing)
2. Failure analysis of carbon fiber/graphene nanoplatelet/epoxy hybrid laminated composite for underwater application. (2023-2024).
3. Fabrication and analysis of jute fiber /chicken feather filler / epoxy hybrid laminated composites. (2023-2024) with Dr. Sanjib Banerjee.
4. Theoretical and finite element analysis of graphene nanoplatelet reinforced aluminum matrix nanocomposites. (2022-2023)
5. Design and control of a lower limb exoskeleton with a polycentric knee joint. (2022-2023) with Dr. Zhanupriya Kalita
6. Characterization, stress analysis, and mode I fracture analysis of carbon fiber/graphene nanoplatelet/epoxy hybrid laminated nanocomposites. (2021-2022)
7. Determination of elastic properties and fracture parameters of flax/glass/epoxy hybrid laminated composite. (2021-2022)
8. Finite element analysis of concrete railway sleeper. (2020-2021)
9. Effect of volume fraction on mechanical properties and stress analysis of graphene nanoplatelet/epoxy laminated nanocomposite. (2020-2021)
10. Evaluation of elastic properties and stress analysis of graphene nanoplatelet/epoxy laminated nanocomposite. (2019-2020)
11. Delamination analysis of CNT reinforced composite materials. (2018-2019)
12. Experimental investigations on some of the mechanical properties of lime sludge filled coir-jute hybrid reinforced epoxy and polyester composites. (2017-2018) with Dr. Satadru Kashyap.
13. Finite element analysis of different types of representative volume elements under thermo-mechanical loading. (2016-2017)
14. Analysis of jute-glass fabric reinforced interply hybrid polymer composite. (2015-2016)
15. Finite element analysis of single-layered graphene sheets and single-walled carbon nanotubes. (2014-2015)

B. Tech. Project supervised:

Completed: 19, Ongoing: 01.

Reviewer of Journals:

1. Journal of Natural Fibers (Publisher: Taylor & Francis)
2. Advanced Engineering Materials (Publisher: Wiley)
3. Science and Engineering of Composite Materials (Publisher: De Gruyter)

4. Journal of Food Measurement and Characterization (Publisher: Springer)
5. Sadhana (Publisher: Springer)
6. Journal of The Institution of Engineers (India): Series D (Publisher: Springer)
7. Sigma Journal of Engineering and Natural Science (Publisher: Springer)
8. Journal of Applied Research and Technology (Publisher: UNAM)

Invited Lectures / Talks:

1. I have delivered a talk on “Investigation of stress distribution and strain energy release rate in carbon nanotube/aluminum composites having a broken carbon nanotube.” in the 4th International Conference on Advanced Nanomaterials and Nanotechnology, December 2015; IIT Guwahati, India.

2. I have delivered 4 lectures (including two laboratory classes: hand on practice for modeling and analysis of structural component using ANSYS) in one week faculty development program on “Recent Trends in Computational and Experimental Mechanics” during 11-15 December 2017; Tezpur University, India.

New M.Tech Program:

1. Member: Restructuring the M.Tech in Mechanical Engineering Program (Specialization: Machine Design), Department of Mechanical Engineering, Tezpur University (2024).
2. Coordinator: M.Tech in Mechanical Engineering (Specialization: Machine Design), Department of Mechanical Engineering, Tezpur University (2018).
3. Member: M.Tech in Mechanical Engineering (Specialization: Applied Mechanics), Department of Mechanical Engineering, Tezpur University (2013).

Revision of B.Tech curriculum:

1. Member: B.Tech curriculum revision committee as per AICTE model curriculum (2024).
2. Member: B.Tech curriculum revision committee as per AICTE guidelines (2018).
3. Member: B.Tech curriculum revision committee (2015).

Seminar/Conference/Short-Term Course/Workshop organized:

1. Coordinator: One day workshop on “Elements of Style in Technical Communication” on 3rd February 2024.
2. Joint Coordinator: One week faculty development program on “Recent Trends in Computational and Experimental Mechanics” during 11-15 December 2017.
3. Treasurer: National Conference on “Sustainable Mechanical Engineering: Today and Beyond” during 25-26 March 2017.

Membership in professional bodies:

1. The Institution of Engineers (India), Associate member, AM153304-8, from 2014.
2. The Indian Society for Technical Education, Life membership, LM 132268, from 2021.
3. Indian Society of Mechanical Engineers, Life membership, FISME20121604, from 2021.
4. Materials Society Research of India, Life membership, LMB 3322, from 2021.

Administrative/Institute support work:

1. Coordinator, M.Tech admission: 2024, 2014
2. Coordinator, PhD admission: 2023 and 2022
3. Coordinator, M.Tech and PhD admission: 2022, 2020, and 2019
4. Coordinator, B.Tech admission: 2019

5. Coordinator, M.Tech project evaluation: 2024
6. Coordinator, Annual quality assurance report (AQAR): From 2019 to 2024 and 2011
7. Supervisor, Summer internship: 2024
8. Departmental coordinator, Anti-ragging week as per UGC notification: 2024 and 2023
9. Advisor, Course registration: From 2021 to 2024, 2017, 2014 and 2012
10. Coordinator, Prepared departmental academic calendar: 2024 and 2023
11. Coordinator, Course codes for newly offered courses: From 2020 till date
12. Counting Officer, Tezpur university students' council election: 2024, 2023 and 2017
13. Member, Academic and administrative audit team visit: 2024
14. Member, Departmental research committee: From 2019 to till date
15. Member, Doctoral committee: From 2022 to till date
16. Member, B.Tech Screening Cum Selection Committee (BSSC): 2023, 2018 and 2017
17. Member, Review committee for B.Tech admission process through NE quota: 2023
18. Faculty in-charge, Anti-ragging committee in campus: From 2021 to 2023, 2017 and 2009
19. Faculty in-charge, Anti-ragging committee squad in hostel: From 2021 to 2023, 2017 to 2019
20. Verifying Officer, Joint Seat Allocation Authority (JoSAA) / Central Seat Allocation Authority (CSAB): 2023 and 2021
21. Deputy Centre-in-Charge, CSAB: 2022 and 2021
22. Member Convenor, Monitor the unauthorized movement of students during and after completion of "Cultural Night of 25th Annual Meet" and security issues: 2023
23. Member, Monitor the overall arrangement of the "Cultural Night of 25th Annual Meet" including the expenditure, negotiation of the remuneration/charges of artist, venue, timing etc.: 2023
24. Member, Merit list preparation for the internal branch sliding of the B.Tech 1st semester students: 2023
25. Member, NBA accreditation of B.Tech programme: 2023, 2018 and 2014
26. Departmental coordinator, NBA accreditation of M.Tech programme: 2017
27. Instructor, GATE coaching: 2022
28. Member, Induction programme: 2022
29. Convenor, Induction programme: 2021
30. Senior warden: 2022 and 2023
31. Warden: From 2016 to 2022
32. Member, Screening and selection committee, AICTE Doctoral Fellowship (ADF) candidate: 2022 and 2021
33. Instructor, Summer term course: 2022 and 2021
34. Faculty in-charge, CAD laboratory: From 2015 to till date
35. Faculty in-charge, SOM laboratory: From 2022 to till date
36. Faculty in-charge, TOM laboratory: From 2012 to 2022
37. Coordinator, Academic probation committee: 2018 to 2022 and 2013 to 2016.
38. Coordinator, Local areas visit: 2019
39. Member, Fund for improvement of S&T infrastructure (FIST): 2019
40. Center in-charge, TUEE: 2018, 2017 and 2012
41. Member, Lateral entry of diploma holders: 2018
42. Departmental coordinator: Prepared 13th plan proposal of the department, 2016
43. Member, Students' appeal committee: 2016, 2015 and 2009
44. Polling officer, TUSC: 2015
45. Departmental coordinator, Semester examination: 2014 and 2010
46. Member, CCB Committee: From 2011 to 2014
47. Coordinator, B.Tech project evaluation: 2014
48. Coordinator, Class time table preparation: From 2012 to 2014
49. Member, Academic audit preparation: 2013 and 2014

50. Coordinator, Industrial Summer Training: 2011
51. Coordinator, Placement Brochure: 2011
52. Judge, TechXETRA: 2010 and 2008
53. Faculty in-charge, Syllabus oriented visit:2009

References:	
Dr. Debabrata Chakraborty Professor, Department of Mechanical Engineering, Indian Institute of Technology Guwahati, North Guwahati-781039, Assam, India. Phone: +91361-2582666, Fax: +91-361-2582699, e-mail: chakra@iitg.ernet.in	Dr. K. S. R. K. Murthy Professor, Department of Mechanical Engineering, Indian Institute of Technology Guwahati, North Guwahati-781039, Assam, India. Phone: +91361-2582658, Fax: +91-361-2582699, e-mail: ksrkm@iitg.ernet.in