Bio-data

Name: **Ravindra Kumar Ambikesh**
Designation: Associate Professor
Department: Mechanical Engineering
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Contact Number (Personal): 9450071422

Personal Information:

Date of birth: 07.12.1978
Gender: Male
Marital status: Married
Spouse: Kusum Lata
Children: Two boys Vibhor and Vihan
Nationality: Indian

Educational Qualification:-

Sl. No.	Education	University/Board	Specilization	Year of Passing	Marks Percentage	Divison
1.	Ph.D.	H.B.T.U. , Kanpur	Mech.Engg.	Pursuing (2020)		
2.	M.Tech.	IIT Roorkee	Prod. & Indl. Engg.	2001	6.94/10	I
3.	B. Tech.	IET Lucknow	Mechanical Engg.	1999	70.4	I
4.	Intermediate	GIC Allahabad	Science Group	1994	66	I
5.	High School	LDDIC Mauranipur, Jhansi	Science Group	1992	70	I

Professional Experience:-

Sl. No.	Designation	Organization	From	To	Experience
1	Lecturer	DIT Dehradun	16.02.2001	20.04.2002	1Yr 2 Month
2	Lecturer	HCST Mathura	06.09.2002	26.02.2003	5 Months
3	Asst. Prof.	HBTU Kanpur	28.02.2003	28.02.2016)	13 Years
4	Assoc. Prof.	HBTU Kanpur	28.02.2016	Till date	7 Years

B.Tech. Project: "**Development of Preventive Maintenance Schedule for a Boiler-Turbine System of a 110 MW Thermal Power Plant"**

M.Tech. Project: "**Facility layout design using Genetic Algorithm**"

Subjects taught at HBTU Kanpur:-

UG Level:

1. Engineering Mechanics
2. Industrial Engineering
3. Automobile Engineering
4. Engineering Materials
5. Non-Conventional Energy Sources
6. Elements of Mechanical Engineering
7. Principles of Machine Tool Design
8. Machine Drawing
9. Solar Energy

PG Level:

1. Simulation, Modeling and Analysis
2. Manufacturing Automation
3. Machine Tool Design
4. Optimization for Engineering Design
5. Advanced Materials Engineering
6. Applied Operation Research
7. Design of Production Systems
8. Composite Material

9. Numerical Methods & Computer Programming

B. Tech Projects Guided (Completed 31)

1. Plant layout design based on genetic algorithm (2008)
2. Cell formation using genetic algorithm (2008)
3. Unit load and material handling considerations in facility layout design (2009)
4. Manufacturing cell formation using neural network (2009)
5. To design & develop anti lock braking system for automobiles & performance analysis (2010)
6. Optimization of line balancing in LML Kanpur (2010)
7. Design, fabrication & performance analysis of automatic guided vehicle for pipe inspection (2011)
8. Design, fabrication & performance analysis of automatic transmission for automotive applications (2011)
9. Design, fabrication & performance analysis of torsion bar suspension system (2012)
10. Design & Development of electromagnetic clutch (2012)
11. Design & Development of Motorized Scissor Jack (2013)
12. Design & fabrication of four wheels steering mechanism (2014)
13. Automated maintenance & inspection schedule for an automobile (2014)
14. Design and development of Nylon based Torsion bar suspension system (2015)
15. Development and performance analysis of paddle driven By-cycle (2015)
16. Design and fabrication of automated electro hydraulic jack (2016)
17. Design, development and fabrication of Dry-Wet-Dry cleaning machine (2016)
18. To develop the experimental set up and performance analysis of Disc Brake (2017)
19. Development and analysis of experimental setup of Magnetic Braking System (2017)
20. Design and Development of auto roll punching machine using Geneva mechanism.(2018)
21.Design and Development of vacuum assisted power braking system.(2018)
22.Design fabrication and testing of GFRP leaf spring. (2018)
23.Design, Development and Fabrication of Hybrid machine for grass cutting and surface grinding.(2019)
24.Design, Development and Fabrication of Solar Energy based vehicle for Agricultural Applications. (2019)

25. Design and development of Intelligent braking system (2020)
26. Design , fabrication and Simulation of vacuum assisted power brake (2020)
27. Design & Analysis of Solar powered Air Purifier (2021)
28. Design & Analysis of Automatic Pneumatic Hammer (2021)
29.Design & fabrication of vehicle Anti-hydro-locking Exhaust System(2022)
30.Design & Analysis of Cube Sat structure (2022)
31. Design & Analysis of Shock Absorber for Two wheeler (2022)
32. Design, fabrication and Analysis of Solar Distillation System (2023)
33.Design and Fabrication of Humidification- Dehumidification based Desalination System (2023)

M.Tech Thesis Guided (Completed 24)

1 .A comparative study of heuristic methods & genetic algorithm to solve flow shop scheduling problem for optimization make span (2011)
2. Multi objective facility layout design using genetic algorithm (2013)
3. Computer aided design and Thermo-Mechanical analysis of IC engine piston (2013)
4. FEM analysis of Automobile Frame of Chassis using ANSYS (2014)
5. Multi Objective Design optimization of ball bearing using genetic algorithm (2014)
6. Computer aided design & analysis of injection mold plastic component through mold flow advisor (2014)
7. Design and optimization of crank shaft using ANSYS (2015)
8. Design, analysis and optimization of gearbox using ANSYS. (2016)
9. Analysis of waste tyre rubber and epoxy composite (2016)
10 Optimization of connecting rod using ANSYS (2016).
11. Numerical Analysis o various types of Disc Brake Rotor for AI/SiC Metal Matrix Composite material Using ANSYS.(2017)
12. Parametric optimization of drum brake using Genetic Algorithm (2017)
13. Design and analysis of brake drum using ANSYS By Kailash Nath (2018)
14. Enhancing crashworthiness of Automobile Bumper beams by incorporating energy absorber by Chhaya Yadav (2018)
15. Lean and Six Sigma Integration approach in aircraft maintenance organisation by Hirdesh Kumar(2018)
16. FEM Analysis and optimization of composite leaf spring by Shkha Tripathi (2019)
17. Optimization of spur gear pair using FEA on Ansys by Anand Gaurav (2019)

18. Finite Element analysis of For wheeler Connecting Rod for weight minimization by Shubham Saxena (2020)
19. Finite Element Analysis and Optimization of Crankshaft of Petrol Engine by Divyanshu Singh (2020)
20. Topological optimization of Double Wishbone Suspension System by Anuj Awashthi (2021)
21. Finite Element Analysis of Motor Cycle Frame using Different Materials by Shivam Tripathi (2021)
22. Modeling and Analysis of Front Axle Heavy Duty Commercial Vehicle (2022)
23. Modelling and Analysis of Differential Gear Box Using Ansys (2022)
24. Thermodynamic Analysis of Solar vapor absorption System using different absorbent refrigerant fluids (2023)

Number of Seminars/Conferences/Workshops organized (3)

1.International Conference on Design, Materials & Manufacturing Concerns in Production of Quality Engineering Goods from 27-29 March 2017 at HBTU Kanpur.

2.Organised Three-day training on reverse engineering and rapid prototype at HBTU Kanpur as Deputy Coordinator Jan 5-7, 2017

3.Organized One week Faculty Development Program on Optimization Techniques in Engineering at MED, HBTU, Kanpur from October 4-8, 2021 as Coordinator.

Participation in Seminars (1)

1. R.K. Ambikesh "Advances in material for automotive application" All India seminar on advances in materials and material selection in design at HBTI Kanpur,2012

Short Term Courses Attended (47)

1. Robotics and Automation at IIT, Kanpur from July 7-18, 2003
2. Computer Aided Advanced Computational Methods and Modelling at TIET, Patiala from July 5-16, 2004
3. Intellectual Property Rights and Patent Information through NITTR, Chandigarh held at HBTI, Kanpur from Sept. 27-October 1, 2004
4. Mathematical Modelling of Real Life Problems at IIT, Roorkee from July 4-15, 2005
5. Workshop on Energy at BIET, Jhansi from Nov. 19-20, 2005

6. Computer Machine Interfacing at NITTR, Chandigarh from Feb. 19-23, 2007
7. Advances in Materials & Material Selection in Design at HBTI, Kanpur from August 24-25, 2012
8. Modelling, Simulation and Analysis of Engineering Systems at HBTI, Kanpur from October 25-20, 2013
9. Fatigue and Fracture of Advanced Materials at IIT, Roorkee from July 22-23, 2013
10. Engineering Education: Opportunities, Challenges & Future Directions at HBTI, Kanpur from March 7-12, 2014
11. Mechanics in Physics at IIT, Kanpur from June 23-27, 2014
12. Workshop on Statistical Analysis for Engineers - 2015 at IIT, Kanpur from May 4-8, 2015
13. State Level Faculty Interaction Seminar at HBTI, Kanpur from June 8-9, 2015
14. Workshop on MATLAB Programming and its Applications at HBTI, Kanpur from Feb. 25-26, 2015
15. Mechanics School at IIT, Kanpur from Feb. 20-24, 2015
16. Strategic Planning and Management of Technical Institutions through ICT at UPTTI, Kanpur from August 17-21, 2015
17. FDP on Achieving Academic Excellence at IIM, Raipur from Sept. 7-12, 2015
18. Materials Microstructure Characterization using Optical & Scanning Electron Microscopy at IIT, Hyderabad from Dec. 20-24, 2015
19. FDP on Applied Research, Training and Education in Lipid Science at HBTI, Kanpur from August 22-27, 2016
20. FDP on Entrepreneurship Development at IED, Lucknow from Aug.29 - Sept. 2, 2016
21. Occupational Health and Safety Management Practices organized by ESCI, The Institution of Engineers (India) and HBTU, Kanpur from October 3 - 5, 2016
22. Two days workshop on Matlab Programming and Its Applications from 25-26 February, 2015 at Harcourt Butler Technological Institute, Kanpur.
23. IMDM 2015 National Conference on Innovations in materials, design and manufacturing March 27-28, 2015 at HBTI Kanpur.
24. Workshop on Statistical Analysis for Engineers – 2015 from May 04-08, 2015 at Indian Institute of Technology Kanpur.
25. Seminar on State Level Faculty Interaction held during 8-9 June, 2015 at Harcourt Butler Technological Institute, Kanpur.

26. Faculty Development Programme on Achieving Academic Excellence held during September 07-12, 2015 at Indian Institute of Management Raipur.
27. Short Term Course on Strategic Planning and Management of Technical Institutions through ICT from 17-18 August, 2015 at U.P.T.T.I., Kanpur.
28. Five Days workshop on Materials Microstructure Characterization using Optical & Scanning Electron Microscopy during 20-24 december,2015 at IIT Hyderabad.
29. Faculty Development Programme on Corrosion Control in Chemical and Allied Industries from 22-27 August, 2016 at Harcourt Butler Technological Institute, Kanpur.
30. Faculty Development Programme on Entrepreneurship Development from 29 August to 2 September, 2016 at Institute of Entrepreneurship Development, Lucknow.
31. Workshop on Occupational Health and Safety Management Practices from 3-5 October, 2016 at HBTU Kanpur.
32. Management Development Programme on Management Capacity Enhancement Programme from 5-10 December, 2016 at IIM Kozhikode.
33. Three Days Training Programme on Reverse Engineering and Rapid Prototyping from 5-7 January, 2017 at HBTU Kanpur.
34. Training Programme on Computer Aided Engineering of Vehicle Development from 17-18 January, 2017 at HBTU Kanpur.
35. Three days workshop on Energy Conservation and Energy Audit in Academic Institutions from 07-09 March 2017 at Chemical Engineering Department, HBTU Kanpur.
36. International Conference on Design, Materials & Manufacturing Concerns in Production of Quality Engineering Goods from 27-29 March 2017 at HBTU Kanpur.
37. Three day training workshop for Faculty Mentors on Induction Programme for New Students from 22-24 September, 2017 at HBTU, Kanpur.
38. One week Induction Programme for New Entrants from 15-21 January, 2018 at HBTU Kanpur.
39. Five days Training workshop on Academic process for the Implementation of outcome based Education (OBE) from 19-23 February, 2018 at HBTU Kanpur in collaboration with Thiagarjar College of Engineering, Madurai.
40. Two days workshop on Outcome based Accreditation for Undergraduate engineering programs from 22-23 March, 2018 at HBTU Kanpur.

41. Six days Professional Development Training (PDT) from 21-25 May, 2018 at Indian Institute of Management (IIM) Kashipur.
42. Six days Summer Training Program on Active Learning for Senior Faculty from 11-15 June, 2018 at IIT Kanpur.
43. Five days Faculty Development Programme (FDP) on Mathematical Modeling & Research Methodology from 08-12 October, 2018 at Department of Mathematics HBTU Kanpur.
44. Four days Faculty Development Programme on Material Synthesis and Advanced Characterization Techniques from 01-04 December, 2018 at Department of Chemistry HBTU Kanpur.
45. Six days faculty Development program on Advancement in Material Characterization Techniques, at HBTU Kanpur from December 16-21, 2019.
46. Five days Professional Development Training at IIM Raipur from January 28- February 01, 2020.
47. Online Five days FDP on Transportation and Automobile Design at Karpagam College of Engineering from September 21-25, 2020.

Membership

Life member of The Indian Society for Technical Education.

Administrative work at HBTI/HBTU Kanpur:

- Convener Yoga Club (2004-2011)
- In-Charge Automobile Engineering Lab (2004-till date)
- In-Charge machine Drawing Lab (2023-till date)
- In-Charge Vehicle, HBTI, Kanpur (April 2008-April 2010)
- Warden DBRA 2 hostel (May 2012- July 2015)
- Warden DBRA 1 hostel (July 2016- 2017)
- Time-table In-charge (Mechanical Engineering Department) 2017, 18, 19.20,21,22,23
- Organized SEE 2006, 2007, 2008, 2009, 2010 as Centre Superintendent in UPTU.
- Organized SEE-15 as Nodal Officer at BIET, Jhansi.
- Assistant Centre Superintendent of Examination at HBTI Kanpur, 2011.
- In-Charge Energy Conversion Lab (2017-2023)
- Member of Staff Selection Committee at IIT, Kanpur
- Verification of Machines Installed in various Industries under State Government Scheme

- Member Guest Faculty Selection Committee in various Departments at HBTI/HBTU Kanpur
- Member student admission Counseling Committee
- Member SC/ST Scholarship committee
- Member Furniture purchase committee, REC Mainpuri & Kannauj
- Member stock verification committee/Library Books Verification Committee.
- Regular member of various university level committees like Anti-ragging committee, sports committee, Convocation committee, Alumni day celebration committee.

Research Publications in International Journals

1. Nikhil Mittal, R.K. Ambikesh, " Numerical analysis of various types of Disc brake Rotor for Al/Sic MMC material using ANSYS" International Journal of Emerging Technology and Advance Engineering, pp 31-39, Volume 7 Issue 12, December 2017.
2. Divyanshu Singh,R. K. Ambikesh,' CAD modelling and Topological Optimization of two wheeler Motorcycle Crank shaft using ANSYS, International Research Journal of Engineering and Technology (IRJET), Volume 07, Issue 09, September 2020, p 271-273.
3. Anuj Awasthi, R.K.Ambikesh," Design and Analysis of double wishbone suspension system for SUV", International Research Journal of Engineering and Technology (IRJET), Volume 8, Issue 7, July 2021 pp 3226-3230.
4. Shivam Tripathi, R.K.Ambikesh," Finite Element Analysis and Optimization of Motor cycle Frame for weight reduction", International Research Journal of Engineering and Technology (IRJET), Volume 8, Issue 7, July 2021 pp 4042-4045.
5. Shivam Tripathi, R.K.Ambikesh," Design and Finite Element Analysis of Motor cycle Frame using carbon/ Flax hybrid composite as a light weight substitute to steel ", International Research Journal of Engineering and Technology (IRJET), Volume 8 Issue 7, June 2021 pp 4554-4557.
6. Anuj Awashthi, Ravindra Kumar Ambikesh, " A review paper on design and analysis of control arm", I Manager Publications, Accepted on July 18, 2021 .
7. Abhishek Pal, R.K.Ambikesh," A review on the design and analysis of front axle of heavy duty vehicles", International Journal of Research

and Analytical Reviews (IJRAR), Volume 9 Issue 3 July 2022, pp-688-692.
8. Abhishek Pal, R.K.Ambikesh," Modelling and analysis of front axle of heavy duty commercial vehicle", International Journal of Research and Analytical Reviews (IJRAR), September 2022, Volume 9, Issue 3, pp- 252-260.
9. Ravi Sachan, R.K.Ambikesh," A Review on Design and Analysis of Automotive Differential Gearbox", International Journal of Research and Analytical Reviews (IJRAR), Volume 9, Issue 3 , July 2022, pp-677-681.
10. Ravi Sachan, R.K.Ambikesh," Modeling and analysis of Differential gear box using Ansys", International Journal of Research and Analytical Reviews (IJRAR), Volume 9, Issue 3 , September 2022, pp-611-619.

Research Publications in National Journals

1. Anand Kumar Gaurav, R.K.Ambikesh,'Weight optimization of Helical Gear Pair using FEA on ANSYS',Journal of material Science and Mechanical Engineering(JMSME), Volume 6, issue 3, April-June , 2019, pp.163-168.
2. Anand Kumar Gaurav, R.K.Ambikesh, 'Weight optimization of Spur Gear Pair using FEA on ANSYS', Journal of material Science and Mechanical Engineering(JMSME),), Volume 6, issue 3, April-June , 2019, pp.169-177.
3. Shikha Tripathi, R.K.Ambikesh,'Study of Composite Materials for leaf spring ," ,Journal of material Science and Mechanical Engineering(JMSME), Volume 6, issue 3, April-June , 2019, pp.142-146.
4. Shikha Tripathi and R.K.Ambikesh,'FEM Analysis and weight optimization of composite leaf spring ," ,Journal of Material Science and Mechanical Engineering(JMSME), Volume 6, issue 3, April-June , 2019, pp.147-151.
5. Divyanshu singh, R.K.Ambikesh,'Review on Modelling , Analysis and Optimization of Crank Shaft ," ,Journal of Material Science and Mechanical Engineering(JMSME), Volume 7, issue 3, April-June , 2020, pp.1-5.
6. Shubham Saxena, R.K.Ambikesh,'A riew paper on technical advancement of I.C. Engine connecting rod" ,Journal of Material Science and Mechanical Engineering(JMSME), Volume 7, issue 2, April-June , 2020, pp.6-8.

Publications in International Conferences

1. Ravi Anand, R.K. Ambikesh "FEM analysis of crankshaft using ANSYS for weight minimization" International Conference on Design, materials & manufacturing concerns In production of quality engineering goods, March 27-29,2017 at HBTU Kanpur
2. Pradeep Kumar Sharma, R. K. Ambikesh "FEM analysis of Gear Box using ANSYS for weight minimization" International Conference on Design, materials & manufacturing concerns In production of quality engineering goods, March 27-29,2017 at HBTU Kanpur
3. Divyanshu Singh and R. K. Ambikesh," Computer assisted FEM analysis of single Cylinder petrol Engine Crank shaft", AIP Coference proceedings, May 13, 2021.
4. Asheesh Kumar and R.K. Ambikesh," Comparative exeregetic analysis of vapor absorption refrigeration system using three different absorbent refrigeration fluids, LiBr-H_2O, Licl-H_2O and NH_3-H_2O" 2nd Biennial International Symposium on fluids and Thermal Engineering (Flute 2023), July 20-21, 2023.
5. Ashessh Kumar and R. K. Ambikesh, " Thermodynamic analysis of vapor absorption refrigeration system using three different absorbent refrigeration fluids, LiBr-H_2O, $LiNO_3$-H_2O and NH_3-H_2O", 2nd International conference on Design and Materials" (ICDM 2023), July 28-29, 2023.

Publications in National Conferences

1. R.K. Ambikesh, "Facility Layout Optimization using Genetic Algorithm" National conference on innovations in materials Design and Manufacturing, 2015.
2. Sujit Morya, R.K. Ambikesh, "Computer Aided Design and Analysis of injection Mold Plastic Component through mold Flow Advisor" National conference on innovations in materials Design and Manufacturing,2015.
3. Ashish Tiwari, R.K. Ambikesh, "FEM Analysis of Automobile Frame of Chassis using ANSYS" National conference on innovations in materials Design and Manufacturing,2015.
4. Shikha Tripathi, R.K.Ambikesh," Review on Design and Analysis of composite leaf springs", national Conference on Futuristic in Mechanical Engineering", at MMTU Gorakhpur(FME-2019), March 28-29 , 2019, pp114-117.

5. Anand Kumar Gaurav, R.K.Ambikesh," Review on Optimization of spur gear train using GEnetic Algorithm and FEA analysis", National Conference on Futuristic in Mechanical Engineering", at MMTU Gorakhpur(FME-2019), March 28-29 , 2019, pp 346-350.

Sponsored Project

Development of Low Capacity and Cost Effective Solar Air Conditioner
Project Cost: Rs. 10,63,000/-
Duration : Two years (2020-2022)
Principle Investigator: Dr. Onkar Singh
Co P.I.: R. K. Ambikesh

I herby certify that the information provided above is accurate and recent to the date indicated below.

Date:10.11.2023 **Signature**

Place: Kanpur **Name: Ravindra Kumar Ambikesh**