1. **NAME**: Professor/Dr. A.K. Madan

2. **QUALIFICATIONS**: B.Tech, M.Tech LONDON, PhD.

3. **Mail** – ashokmadan@dce.ac.in

4. **EXPERIENCE**: 31+ Years of Teaching experience at DCE/DTU. Also 10 years of Industrial experience in various reputed organizations in India and abroad.

5. **AREA OF SPECIALIZATION:** CAM, Automation, Robotics, CAPP, FMS, CIM, Industry 4.0, AI, IOT etc.

6. **PROFESSION**: Currently working as a Professor –Dept. of Mechanical Engineering, DTU (Formerly Delhi College of Engineering). Teaching/ Guiding Projects to BTech, MTech and PhD students.

S. No.	Name of the Employer	Duration		Nature of Duties
		From	To	
1	Delhi Technological University (Formerly DCE)	Apr-91	Till Date	Teaching & Guiding UG, PG & PhD Students.
2	Empire Industries	Jan-87	Apr-91	Assistant Manager
3	KG Khosla Compressor Ltd.	Jun-83	Jan-87	Senior Engineer (R&D)
4	GEC Ltd UK	Jun-81	Jun-83	Engineering Dept.

7. **PUBLICATIONS**: Approximately 125+ Research Papers in various National/ International journals of very high repute.

8. **MEMBERSHIPS**:
   i) Indian Society of Technical Education;
   ii) DCE/DTU alumni;
   iii) The City, University of LONDON alumini; etc.

9. **HOBBIES**: Music, Service to mankind/Weaker section of society.

10. **MEMBERSHIP OR FELLOWSHIP OF PROFESSIONAL BODIES:**
    i. Life member of Indian Society for Technical Education(LM-13960)

ii. Associate Member of Institution of Mechanical Engineers, London

iii. Active member of DCE/DTU alumni.

iv. Active member of City University London alumni.

9. **ACHIEVEMENT/AWARDS/RECOGNITION OBTAINED:**

- Successfully completed a project on Cut to Length Line and Roll Forming Line (From STAM, Italy) at Rail Coach Factory, Kapurthala well before the assigned period in the year 1990.
- I have helped the student community to strengthen the interface with the industries viz M/S Empire Industries Ltd, M/S RCF, M/S COFMOW, M/S Maruti, M/S OFD, M/S DCW etc & world class universities viz The City University, London, Thames

  College London, Imperial College, London, Birmingham University, Warley I n s t i t u t e o f T e c h n o l o g y, U K e t c .
  -Developed a CAM software for the production of a component which was earlier being imported and later with the help of this software it was possible to manufacture indigenously by DEFENCE organization and thereby a lot of saving of foreign currency has been possible as accepted & recognized by the organization

- A Research Paper on "Soft Computing Model for Optimisation of Quality in Technical Education – An Expert Approach" – accepted for publication in International Journal of Advance Research in Business, University of London.
- I was invited by the City, University of London and attended the workshop / programme in June 2017 with regards to the quality in technical education/ academics etc.

10. LIST OF RESEARCH PROJECTS:

I have guided about 66 UG students and about 42 PG students in their research projects in the field of Production Engg. Some of the projects are as under:

1. Computer aided manufacturing: A Feasibility Analysis.
2. Finite element analysis and two dimensional nesting of sheet metal parts used in railway coaches.
3. Die design and validation using simulation software.
4. Robust parameter design and multi-objective optimization of turning operation using Taguchi method.
5. Material optimization system for strip/blank layout in sheet metal operations
6. Prediction of cutting speed for varying hardness using FUZZY LOGIC technique.

7. Lean implementation in discreet and continuous process industries.

8. Soft computing technique a practical approach.

9. Study and effects of different feed rates on the surface finish on material in wire cut EDM.

10. Study the effect of current on material removal rate in electro discharge machining.

11. Experimental investigation of effects of feed on surface roughness in the WEDM process.

12. Troubleshooting CNC Problems

13. Study and economic analysis of Flexible Manufacturing System justifying their implementation.

14. Development of Servo Valves on CNC Machines.

15. Design of conveyor system in context with Material Handling System.

16. Sheet metal nesting of two dimensional shapes for reducing scraps using dynamic nesting approach.

17.Electricity cost Optimisation using Production Scheduling.

18 Criticasl review of scheduling of Flexible Manufacturing System

19. Implementation of Lean Manufacturing etc.

11. Research Papers

1. A.K. Madan et al 2016 Implementation of Lean Manufacturing Through Waste Elimination (ID: ICAPIE-2016- 254)
2. A.K. Madan et al The Self Cleaning Property of Super Hydrophobic Surfaces — An Analytical Approach. (ID: ICAPIE- 2016-267)
3. A.K. Madan and Sanjeev Jain 2016 "A Feasible Study Of Lean Manufacturing - An Expert Approach" International Joumal of Engineering Studies ISSN: 0975-6469 V018 No.2 (2016) pp 107-115.
4. A.K. Madan et al 2016 "Trajectory Generation Techniques - A study" (ID: ICAPIE-2016-269)
5. A.K Madan, 2016, "Soft Computing model for the optimization of quality in technical education-An expert approach", IJARB/International Conference on advanced research in business in University of London. Paper code: 1030. Date of acceptance July 2016.
6. A.K. Madan et al 2017, "Multi-objective scheduling in FMS using Meta Heuristic Approach," IJREI/ International Journal of Research in Engineering and Innovation Vol-l, Issue 6 (2017), 35-41

7. A.K. Madan et al 2019, "Non-traditional optimization techniques of scheduling in FMS: A Review", IJREI/ International Journal of Research in Engineering and Innovation Vol-3, Issue 2 (2019), 157-164
8. A.K. Madan et al 2019, MANUFACTURING PROCESS IMPROVEMENTS USING LEAN 6 SIGMA ICAPIE PAPER ID PEMF221. DEC,2019
9. A.K. Madan et al 2019, FABRICATION & CHARACTERISATION OF PVA BASED FILMS CROSSED LINKED WITH CITRIC ACID - ICAPIE PAPER ID PEMF226 DEC, 2019
10. A.K. Madan et al 2019, PREFERENCE SELECTION INDEX APPROACH AS MADM METHOD FOR RANKING OF FMS FLEXIBILITY- ICAPIE PAPER PAPER ID IE0316. DEC,2019.*THlS PAPER HAS ALSO BEEN SHORTLISTED FOR SPRINGER PUBLICATION..
11. A.K. Madan et al 2019, FMS AND ITS FEASIBILITY IN CONTEXT WITH INDIAN INDUSTRIES ICAPIE PAPER PAPER ID IE 0320. DEC,2019
12. A.K. Madan et al 2019, ANALYSIS OF JOINING OFHIGH DENSITY POLYETHYLENE PIPES ICAPIE PAPER PAPER ID PEML125 DEC,2019
13. A.K. Madan et al 2019, BLOCK CHAIN TECHNOLOGY AS A TOOL TO MANAGE A DIGITAL IDENTITY: A CONCEPTUAL STUDY- ICAPIE PAPER PAPER ID IEM415 DEC,2019
14. A.K. Madan et al 2019, PERFORMANCE MEASUREMENT OF FMS : A CASE STUDY. IJREI, VOL 3 ISSUE 4, 2019 (ISSN 2456-6934)
15. A.K. Madan et al 2019, FMS SCHEDULING USING AGV'S BY COMPUTING TECHNOLOGIES, IJREI, VOL 1 ISSUE 3, 2019 (ISSN 2456-6934)
18. A.K.Madan et al 2020, META HEURISTIC OPTIMISATION ALGORITHMS USED IN FLEXIBLE MANUFACTURING TECHNOLOGY : A REVIEW IRJEI, VOL 3, ISSUE 4 2020 (ISSN 2456-6934)
17. A.K. Madan et al 2020, A HYBRID FIREFLY ALGORITHM FOR MULTI OBJECTIVE OPTIMISATION IN FMS (MAY 2020) INTERNATIONAL RESEARCH JOURNAL OF ENGG & TECHNOLOGY VOL 7, ISSUE 05 (ISSN 2395-0072)
18. A.K. Madan et al 2020, THE EVOLUTION AND FUTURE OF SUSTAINABLE PROJECT MANAGEMENT (ACCEPTED IN RAME 2020). •THIS PAPER HAS ALSO BEEN SHORTLISTED FOR SPRINGER PUBLICATION.
19. A.K. Madan et al 2020, PRODUCTIVITY IMPROVEMENT IN MANIFOLD MACHINING USING CNC MACHINES PAPER ID RAME-2020 PAPER102 ACCEPTED IN JUNE 20
20. A.K. Madan et al 2021,OPTIMIZATION OF CUTTING PARAMTRES DURING TURNING USING ANSYS by Rittik Bhogal, AK Madan and MS Niranjan. SCI Journal & Scopus Q1 Journal. Acceptance Letter received. Paper ID - IJHCI_83411
21. A.K. Madan et al 2021, CUTTING FORCE & THERMAL ANALYSIS DURING TURNING USING ANSYS by Rittik Bhogal, Mahendra Singh and Ashok Madan.

Lecture Notes in Mechanical Engineering (LNME), a Scopus indexed series of Springer. Acceptance received. Paper ID - MATPR-D21-08988R1 (Elsevier, Science Direct)

22. A.K. Madan et al 2021, A STRATEGIC VISION OF INDUSTRY 4.0 by Rittik Bhogal, AK Madan and MS Niranjan. International Journal of Advance Research and Innovation. Acceptance received. Paper ID - ICARI-ME21-01-10
23. A.K. Madan et al 2021,Deep Learning and Machine Learning for Smart Manufacturing Methods and Applications, AK Madan and Arsh Nawaz ICMME October 2021.
24. A.K. Madan et al 2021, Advancement in Manufacturing operations with AI and Industry 4.0, AK Madan , IJARESM November 2021.
25. A.K. Madan et al 2021, Wire ARC Additive Manufacturing Process for Higher Deposition Rate and Mechanical strength, AK Madan IJERT Vol 10 Issue 10 2021.
26. A.K. Madan et al 2021, Design and Development from CNC Laser cutting machine in Different Sheet Metal. AK Madan IRJET Vol 8 2021.
27. A.K. Madan et al 2021, The Merger of Topology Optimization in Additive Manufacturing, AK Madan, IJRAME Vol 8 2021

23.125+ RESEARCH PAPERS ACCEPTED AND PUBLISHED IN JOURNALS OF HIGH REPUTE.

12. **PROFESSIONAL CONSULTANCY/INDUSTRY INTERACTION:** I have offered consultancy to a few companies viz

- M/S Heatley & Gresham
- M/S Engineering Innovations
- M/S Precision Machine Tools
- M/S Beacon Machine Tools etc.

I have interacted with industries viz M/S Maruti, M/S Hero Honda, M/S Empire Industries Ltd, M/S K.G. Khosla Compressors Ltd, M/S GEC, M/S TRTC(now DIET), M/S Heatley & Gresham, M/S Escorts Ltd, M/S Control & Switchgear, M/S COFMOW, M/S RCF, Kapurthala etc in the field of manufacturing etc.

13. CONTRIBUTION TO CORPORATE - INDUSTRY

I have had industrial experience of about ten years related to Production Engineering before joining Delhi College of Engineering and this experience has been highly useful during my teaching/guidance on the projects to the students of both UG and PG levels at DCE from April 1991 till date. This industrial experience has also been useful in arranging interactions of the students of the college /University with various industries at different levels which in turn has helped the students of both UG and PG levels to understand the relevant subject/ projects thoroughly. I have always tried to include the practical examples/aspects during my teaching/guidance

giving specific emphasis on the types of machine tools, measuring instruments, flexible manufacturing system/lines I have been continuously maintaining professional contacts with the relevant industries/Institutions viz M/s. Rail Coach Factory, M/s COFMOW, M/s MDCW, M/s HMT, M/s Empire Industries, M/s Control and Switch-gears, M/s BHEL, Haridwar and New Delhi, M/s Hero Honda, M/s Subros Ltd, M/s Carrier Aircon Ltd, M/s Sona Steering, and institutes like IITs, NSIT, Bhartiya Vidyapeeth college of engineering etc. to keep myself abreast with latest aspects of technology, machine tools, automation being used in major industries and institutions. I have also tried to understand the Research and Development taking place in the relevant departments in various industries/ institutions which in turn has helped me and thereby the students of both UG/ PG.