

Cover Letter

Dear Sir/Madam,

I am honored to offer a multi-disciplinary knowledge and research experience of leading auto operations and product development in the auto industry for 12 plus years that can be applicable to all other areas of Engineering and Research & Development as well as educational institutions.

My experience includes but not limited to research & development in products/processes and operations to balance efficiency, cost, and quality and follow up with implementation and training. The training includes short courses, hands on demonstrations, seminars, workshops, and one to one discussions. This research & development includes design evaluation and verification procedures, Material evaluation, Root cause analysis, Design optimization, Finite Element and Multi-body Dynamics modeling, Vibration analysis, and vehicle attributes trade off decisions using research methodology and problem solving techniques.

Add to this the experience I acquired by joining Sudan University of Science and Technology as assistant professor at the School of Mechanical Engineering. Where I taught and developed undergraduate & graduate courses in Mechanical Engineering. I served in many academic committees and panels that tackled research tasks, new graduate and undergraduate programs, master and Ph.D. thesis proposals, and master thesis dissertations. I served as the graduate study coordinator for the School of Mechanical Engineering and as a member in the College of Engineering Graduate Research Council that approves the fulfillment of Master and Ph.D. degrees.

I am a licensed project management professional (PMP) by the US Project Management Institute (PMI). I used the project management skills in auto industry to complete projects that met deadlines and program milestones within budget and good quality products. I also used these skills in academia in developing undergraduate and graduate programs.

I am also good at team building, self-motivated and help motivating the others, persuading other teams with decisions that benefit the institution as a whole. I set strategic goals for my team and break it down to team member goals and rolls and responsibilities and make sure every member understand it well. Then I empower them to execute their part. I schedule frequent status review meetings to check on progress and resolve their big challenges (if any) and learn what was achieved compared to the plan. I am a people person that holds himself to high standards of Morals, work ethics, integrity, and confidence.

I am expert user of Windows, Mac, and UNIX operating systems as well as in software such as MSC/ADAMS, MSC/Nastran, HyperWorks, Matlab, Minitab, Microsoft Office, Microsoft Project, Microsoft Outlook, Catia, WebEx, and Web Quest.

I am open to new challenges and willing to learn and share what I know. I am very confident that, with my skills, knowledge, and experience I will be able to contribute to your Institution's success & advancement. Looking forward to hearing from you.

Sincerely,

Hussien Ali Hussien

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Dr. Hussien A. Hussien

Curriculum Vitae

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CORE COMPETENCIES

- Business Development Team Management Strategic planning Target Oriented
- Liaison / Coordination Analytical Skills Strong Interpersonal Skills
- Communication Skills Presentation Skills Leadership Skills

EDUCATION

- Doctor of Philosophy of Mechanical Engineering, July 1998
University of Illinois at Chicago, Chicago Illinois USA.
- Master of Science of Mechanical Engineering, December 1992
Bradley University, Peoria, Illinois USA.
- Bachelor of Science (Honors) of Mechanical Engineering, November 1989
University of Khartoum, Khartoum, Sudan.

RESEARCH INTERESTS

1. Use of smart materials in vehicle chassis components (such as control arms and track bar) and body structure.
2. Explore the use of auto proven technologies in other industry applications to maximize its commercial benefit.
3. Quantitative evaluation of Vehicle Dynamics attributes (such as ride, handling, and lane shift) and translates it to driver response suggestions.
4. Explore new ways to shorten the product design cycle to meet market demand without affecting product quality and performance.
5. Improve Finite Element modeling for flexible components in full vehicle models for Durability & Vehicle Dynamics analysis.
6. Developing green energy machineries such as solar and magnetic motors.
7. Multi-Body System Dynamics applications to ground vehicles and machineries
8. Full vehicle simulation with reasonable accuracy to reduce cost and time.
9. Improve product design for manufacturability, serviceability, reduced fuel consumption, environment friendly.
10. Reduce physical testing and measurements by using semi-analytical simulations
11. Shortening vehicle evaluation time by using Remote Parameter Control (RPC) Simulator and in parallel improve analytical vehicle evaluation model by using (RPC).

PROFESSIONAL AFFILIATES

- Member of the SAE Society of Automotive Engineers and served as technical papers reviewer
- Member of the PMI project management institute. I am also a licensed PMP

HONORS & AWARDS

- North American Product Programs Award for " Truck Durability Road to lab Migration Achievement" Ford Motor Company (Dearborn Michigan July 2009)
- World Wide Proving Grounds Vehicle Engineering Achievement Award for "Non-Destructive PT Mount Load Transducer" Ford Motor Company (Dearborn Michigan June 2008)
- Product Analysis & Verification Achievement Award " Analytical Body Mounts Loads Prediction for Durability" Ford Motor Company (Dearborn Michigan 2001)

RESEARCH

- I am currently working in developing a small utility vehicle that uses solar energy as the sole source for charging the battery that drives the electric motor.
- I am also working in developing powerful and efficient magnetic motors to drive home appliances

1. RESEARCH FUNDING

- The study of the wheel base and track width effect on cars and trucks wheel force transducer loads. This project was funded by Vehicle Prototypes Group at Ford Motor Company for the amount of 1,000,000 USD for the period from 2001 to 2004.
- Non-Destructive PT Mount Load Transducer study to reduce prototype cost. This project was funded by the Durability, Road Loads & Customer Correlation department for the amount of 100,000 USD.
- Progressive Jounce Bumper Design to Reduce High Suspension Impact Loads. This project is funded by P473 program for the amount 50,000 USD.

2. PUBLICATIONS

1. A. Shabana, **Hussien A. Hussien**, J. L. Escalona, 'Absolute Nodal Coordinate Formulation,' ASME Design Engineering Technical Conference September 1997, Sacramento, California, 1997.
2. A. Shabana, **Hussien A. Hussien**, J. L. Escalona, 'Application of the Absolute Nodal Coordinate Formulation to Large Rotation and Large Deformation Problems,' ASME Journal of Mechanical Design, March 1998, Vol. 120.
3. A. A. Shabana, **Hussien A. Hussien**, J. L. Escalona, 'Application of the Absolute Nodal Coordinate Formulation to Multi-Body System Dynamics', the Journal of Sound and Vibration (1998) 214(5), 833-851 Article No. sv981653

4. **Hussien A. Hussien**, A. A. Shabana, ET AL, 'Finite Element Dynamic Analysis of the Rear Axle System', 1999 SAE Congress. Session code PC15A Transmission & Driveline Systems Symposium (99PC-28).
5. **Hussien A. Hussien**, A. A. Shabana, ET AL, 'Dynamics and Vibration Analysis of a Vehicle Rear Axle System', International Journal of Vehicle Mechanics and Mobility, Volume 33, Number 4 April 2000 pp. 205-231.
6. **Hussien A. Hussien**, Jayakumar, P. (P.), 'Progressive Jounce Bumper Design to Reduce High Suspension Impact Loads', Ford Technical Reports, March 2001
7. **Hussien A. Hussien**, Jayakumar, P. (P.), 'Analytical Body Mounts Loads Prediction for Durability', Ford Technical Reports, June 2001
8. **Hussien A. Hussien**, Jayakumar, P. (P.), 'Optimization of SAE 3Link Leaf Spring Model for Accurate Loads Prediction', Ford Technical Reports, October 2001
9. **Hussien A. Hussien**, Jayakumar, P. (P.), 'Statistical Road Loads Inputs for Chassis Component Initial Design for Durability', Ford Technical Reports, November 2001
10. **Hussien A. Hussien**, David Lu, ET AL, 'Semi-Analytical Methodology to Cascade Input Loads to Suspension and Body Attachments', Ford Technical Reports, January 2002.
11. **Hussien A. Hussien**, David Lu, ET AL, 'Body and Chassis Bushings Properties Test Specifications for Suppliers', Ford Technical Reports, October 2002.
12. **Hussien A. Hussien**, David Lu, 'Investigating the Use of Microcellular Polyurethane (MCU) VS Rubber Material for Rear Jounce Bumper', Ford Technical Reports, May 2003.
13. **Hussien A. Hussien**, David Lu, ET AL, 'Investigation of Wheel Base Effect on Spindle Road Load Inputs Using Analytical Model and Lego Vehicle Hardware', Ford Technical Reports, November 2003.
14. **Hussien A. Hussien**, David Lu, 'The Effect of Truck Frame Flexibility on Chassis, Body, and Power Train Loads Cascade', Ford Technical Reports, February 2004.
15. **Hussien A. Hussien**, Liang Tang, ET AL, 'Matlab Program to Predict Knuckle Forces', Ford Technical Reports, September 2004.
16. **Hussien A. Hussien**, David Lu, 'Spindle Loads Scaling Based on Gross Vehicle Weight Increase to Predict the Change in Input Loads to Suspension', Ford Technical Reports, January 2005.
17. **Hussien A. Hussien**, David Lu, 'Generic Road Load Support Plan for Various Truck Programs', Ford Technical Reports, April 2005.
18. **Hussien A. Hussien**, David Lu, 'Twin I Beam Suspension Bracket Loads Assessment With Coil Spring Stiffness Reduction by up to 25%', Ford Technical Reports, September 2005.
19. **Hussien A. Hussien**, David Lu, 'Snapper Design to Reduce Power Train Mounts' Peak Loads', Ford Technical Reports, January 2006.
20. **Hussien A. Hussien**, David Lu, 'Matlab Routine to Calculate Absorption Energy From Power Train Mounts Force-Deflection Curves Measured by the Supplier', Ford Technical Reports, March 2006.

21. **Hussien A. Hussien**, David Lu, 'Root Cause Analysis for Suspension Shock Failures in Durability Verification Test', Ford Technical Reports, October 2006.
22. **Hussien A. Hussien**, David Lu, 'Power Train and Chassis Modal Separation to Reduce PT Mounts Peak Loads', Ford Technical Reports, February 2007.
23. **Hussien A. Hussien**, David Lu, 'Fuel System Assessment after Material Cost Reduction Action', Ford Technical Reports, July 2007.
24. **Hussien A. Hussien**, David Lu, 'Steering Linkage Key Life Test Development for Supplier Component Verification', Ford Technical Reports, November 2007.
25. **Hussien A. Hussien**, David Lu, 'Durability Test Development for Pickup's Tailgates Which Equipped with Step & Flexible Extension Mechanisms', Ford Technical Reports, May 2008.
26. **Hussien A. Hussien**, David Lu, ET AL, 'Non-Destructive Power Train Mount Load Transducer to Allow Prototype Sharing and Reduce Cost', Ford Technical Reports, August 2008.
27. **Hussien A. Hussien**, David Lu, ET AL, 'Analytical Road Loads Best Practice Manual', Ford Technical User Manual, December 2008.
28. **Hussien A. Hussien**, David Lu, 'Developing 5th Wheel Hitch Design Verification Procedure for Super Duty Trucks', Ford Technical Reports, June 2009.
29. **Hussien A. Hussien**, David Lu, ET AL, 'Truck Durability Verification Testing: Road to Lab Migration Process', Ford Technical Reports, August 2009.
30. **Hussien A. Hussien**, David Lu, ET AL, 'Application of Remote Parameter Control Iteration Process to ADAMS Full Vehicle Simulation to Synthesize Unknown Inputs Using Matlab', Ford Technical Reports, October 2009.
31. **Hussien A. Hussien**, David Lu, 'Root Cause Analysis for Truck Pickup Box Durability Failure', Ford Technical Reports, January 2010.
32. **Hussien A. Hussien**, David Lu, 'Developing Durability Test Procedure for Transit Connect Electric Vehicle', Ford Technical Reports, June 2010.
33. **Hussien A. Hussien**, David Lu, 'Exhaust System Hot and Cold Durability Test Development', Ford Technical Reports, August 2010.
34. **Hussien A. Hussien**, David Lu, 'Semi Truck Load Cascading with Flexible Frame for FORD OTOSAN Turkey Using ADAMS', Ford Technical Reports, December 2010.
35. **Hussien A. Hussien**, David Lu, 'Equivalent Damage Comparison Between Ford's Arizona, Dearborn and Michigan Proving Grounds', Ford Technical Reports, January 2011.
36. **Hussien A. Hussien**, David Lu, 'Developing Durability Test Procedure for Transit Van for North America's Use', Ford Technical Reports, February 2011.
37. **Hussien A. Hussien**, 'Semi Analytical Load Cascade Method with Closed Loop Feedback Control to Track Spindle Measured Displacement', In progress, 2012

The technical reports listed above are published in Ford internal forums that are reviewed by subject matter experts in product design in Manager, Chief Engineer, and Director Levels. These technical reports addressed:

- a. Newly developed technologies promotions
- b. Root Cause Analysis
- c. Technical Design reviews
- d. Durability procedure development
- e. Training & Technology roll out
- f. Process improvements to reduce cost, time, and resources waste
- g. Project management

3. THESIS:

1. Ph.D. thesis, 'Small and Large Deformation of Multi-Body System Components', University of Illinois at Chicago, Chicago Illinois, 1998
2. MS. Thesis, 'Design and analysis of a Particulate Bed Fixture', Bradley University, Peoria Illinois, 1992.

4. GRADUATE STUDENTS SUPERVISION

- Served as Co-advisor for master thesis at SUSTECH.
- This a program developed at Ford Motor Company to facilitate the fresh college graduate engineers transition from college to the auto industry. I supervised 7 engineers in the last eight years. This duty involved:
 - Developing training plans based on their interests
 - Execute the training plans by teaching them step by step the techniques and skills they need to do their future jobs as automotive engineers
 - Motivate them and teach them teamwork skills and work ethics.
 - Advise them and suggest ways to increase their knowledge in areas where they lack the basics.

TEACHING

Course	Institution
Mechanics of Machines I	Sudan University of Science and Technology
Mechanics of Machines II	Sudan University of Science and Technology
Applied Statistics for Engineers	Sudan University of Science and Technology
Academic Advisor for Sophomore Students	Sudan University of Science and Technology
Computer Aided Analysis of Multi-body Systems I	University Of Illinois At Chicago
Computer Aided Analysis of Multi-body Systems II	University Of Illinois At Chicago
Dynamics of Mechanical Systems	University Of Illinois At Chicago
Statistics For Engineers	University Of Illinois At Chicago
Finite Element Computer Lab	Bradley University

SERVICE

Professional Service:

- Served in a committee as partnership with The Solar Energy Reach Center in Soba, Sudan to develop a car that uses solar energy as driving power.
- Served in Ford's "corporate citizenship program" community service to:
 - Motivate African American youngsters to consider the Engineering field.
 - Building homes for the less fortunate people
 - Help teaching the blinds
- Served as technical papers reviewer for SAE technical papers
- Served in the graduate programs updates committees at SUSTECH.
- Served in a committee to develop Mechatronics undergraduate program.

Academic Community Service:

- I am leading a committee to identify and resolve reasons for the downfall of the student's academic achievement.
- Academic secretary of the mechanical engineering society (MES) at the University of Khartoum, Sudan 1987 - 1988.
- President of the Sudanese society of North America, Chicago 1994 - 1998.
Organized and supervised 3 annual meetings for members of the Sudanese society in the US. Raised \$ 14000 to fund schools in Sudan.

WORK EXPERIENCE

Assistant Professor, Mar 2011-Present

Sudan University of Science & Technology, Khartoum, Assahafa (South Campus)

- Taught undergraduate and graduate Mechanical Engineering courses
- Developed new undergraduate courses.
- Panelled Masters and Ph.D. proposals and dissertations.
- Served as Graduate Study Coordinator.
- Served as academic advisor for junior year students.
- Member of the College of Engineering Graduate Researches Council.
- Served in a committee to develop a new undergraduate program in Mechatronics.
- Served in committees' to develop new master programs in Mechanical Engineering.
- Supervised senior year projects and co-advised master thesis'.

Product Development Engineer, June 2002-Feb 2011

Ford Motor Company, Road Loads Tough Trucks, Dearborn, Michigan

- Use project management skills to develop & improve methods and processes to enhance efficiency & quality to meet the high competitive auto industry market
- Trained fresh & less experienced engineers on the methods and tools that needed for the product development.
- Managed vehicle programs in supporting Design & Release Engineers and CAE with Road Loads inputs to design Suspension, Body, Frame, and Power Train vehicle components to meet or exceed durability requirements
- Developed component testing such as shock absorbers, coil and leaf spring, steering linkage, engine and body mounts, suspension bushings, and exhaust system for suppliers to meet our requirements
- Provided root cause analysis to durability problems that affect production launch in a timely fashion
- Served in attributes trade off committees such as NVH, Safety, Vehicle Dynamics, and Durability as a subject matter expert in Durability
- Integrated & coordinated program requirements for road loads through PAT (Product Activity Team) meetings.
- Finite Element and Multi-body Dynamics cascade of road loads inputs to Suspension, Body, Frame, and Power Train components,
- Managed road load operations shop, machine shop, transducers gage and calibration labs to instrument vehicles with force transducers, torque transducers, and accelerometers for road load data acquisition

Product Development Engineer, April 2000-June 2002

Ford Motor Company, Analytical Road Loads, Dearborn, Michigan

- Develop analytical methods for Road Load cascading to Suspension, Body, Frame, and Power Train using Multi-Body Simulation with structural flexibility.
- Pilot newly developed methods in real vehicle program timing.
- Identify methods deficiencies and improve it to meet vehicle program support.
- Role out the method as standard practice for vehicle program support.

Product Development Engineer, Sep 1998-April 2000

Altair Engineering, Inc, Analytical Road Loads, Troy, Michigan

- Develop analytical methods for Road Load cascading to Suspension, Body, Frame, and Power Train using Multi-Body Simulation with structural flexibility.
- Pilot newly developed methods in real vehicle program timing.
- Identify methods deficiencies and improve it to meet vehicle program support.
- Role out the method as standard practice for vehicle program support.

Graduate Internship, July 1998-Sep 1998

Motorola, Automotive & Industrial Electronic Group, Northbrook IL.

- Developed a computer procedure to evaluate the stresses and fatigue life of the Leads of the electronic components due to the vibration of the board (PCB).
- Developed a finite element model for the lead using ANSYS to correlate the results.

Research/ Teaching Assistant, May 1995-July 1998

Worked on a project supported by University of Illinois at Chicago and the Spicer Axle Division of DANA Corporation.

- Built and tested a finite element model for a rear axle system of a sport utility vehicle.
- Developed a FORTRAN code based on the finite element model to analyze the forces, displacements, velocities and accelerations of the axle system.
- Compared the results using a finite element model using ANSYS, and plotted and animated the mode shapes of the rear axle system.
- Correlated the numerical results with the experimental results.
- Worked with junior members of the research group and taught them new computer methods related to the research area.
- Taught graduate and undergraduate courses.

Research/Teaching Assistant, August 1990 - 1992

Worked on a project supported by Bradley University and the Tool Engineering & Fabrication Division of the Boeing Commercial Airline Company.

- Investigated and analyzed a work piece fixture called the Particulate Bed Fixture for all types of loading. This fixture is good for variable geometry and size of the work piece.
- Built a finite element model for the Bed Fixture using ANSYS and correlated the results with the experimental analysis
- Conducted a parametric study for the Particulate Bed Fixture by changing the dimensions and the mesh using ANSYS
- Taught Finite Element Computer Lab.

Maintenance Engineer, January 1990 - August 1990

Mercedes Clinic, Khartoum South, Sudan. The job duties include the following:

- Automobile maintenance planning and management.
- Supervising 20 mechanics and technicians.

Operation Engineer, November 1989 - January 1990

Borri Steam Power Station, Khartoum, Sudan. The job duties include the following:

- In charge of the shift operation staff.
- Decision-making concerning the under going operation.

Inspection Engineer Internship, September 1988 - 1989

Sudanese Civil Aviation Khartoum, Sudan. The job duties include the following:

- Aircraft maintenance and safety checks.
- Aircraft accidents investigation from technical point of view.

Basic Engineering Training, February 1985 - May 1985

Sudanese Railway Corporation, Khartoum, Sudan. The job duties include the following: Welding, Forging, Casting, Metal Cutting, Carpentry, Electric Network...etc.

Personal Statement of Research

Dear Sir/Madam,

My interest in research first illuminated during my senior year of undergraduate study (1988). Where I applied research methodology to practical Mechanical Engineering problems such as investigating Aircraft Accidents and found from engineering perspective what was the root cause of the aircraft accident. Hence my research experience enhanced during my M.S. thesis at Bradley University where I investigated and analyzed a work piece fixture technique called the Particulate Bed Fixture to be used for all possible types of loading. This fixture is good for variable geometry and size of the work piece. I built a finite element model for the Bed Fixture using ANSYS software and correlated the results with the hardware experiments results. I also conducted a parametric study for the Particulate Bed Fixture by changing the work piece and bed dimensions and the mesh to study the effect on the fixture grip forces. This research work was supported by Boeing Company.

My research experience is enhanced more during my Ph.D. thesis work at UIC where I developed the mathematical formulation of the Absolute Nodal Coordinate Formulation which imposes great computational advantages over the conventional Floating Frame of Reference Formulation such as cost, time, and accuracy. I applied this new formulation on practical problems that involved large deformations & rotations. I also applied multi-body system and vibration concepts to the design analysis of a rear axle system manufactured by Dana Corporation.

My research skills continued to flourish and excel throughout my industrial experience starting from Motorola through Altair Engineering, Inc. to Ford Motor Company. During this time I was challenged with real engineering practice complex problems that utilized my multi-disciplinary knowledge in Multi-Body systems Dynamics, Finite Element Analysis, Linear and non-linear Vibration, Vehicle Dynamics, Stress & Damage & Fracture analysis, Statistics, Vehicle Durability, Computer Aided Design, and Problem Solving Techniques, to solve them. Due to the sensitivity of the products that we work on at Ford Motor Company, only internal technical reports are allowed to be published. This is the reason that I do not have any public technical papers to report the findings of the research work I conducted in the auto industry. Yet I listed the titles and dates of some of these reports in my CV to give a flavor of the research work I conduct. I also served as paper reviewer for the SAE journal.

My research interests are to work on design methods to reduce the weight of mechanical system components to reduce cost and increase fuel efficiency by using smart materials, and to explore green energy alternatives to drive light and heavy mechanical machinery. Also to develop enhanced mechanical components modeling techniques to help reducing prototypes and evaluate design before hardware testing. Also to develop a quantitative evaluation of Vehicle Dynamics attributes such as ride, handling, and lane shift, and to improve the flexible components FE modeling in full vehicle models for Durability & Vehicle Dynamics analysis, and to shorten vehicle evaluation time by using Remote Parameter Control (RPC) Simulator and in parallel improve analytical vehicle evaluation model by using (RPC).

Personal Statement of Teaching

Dear Sir/Madam,

I view my students as my team and I view myself as their team leader who inspire & guide them to fulfill their job requirement. I also make sure that they understand the concepts that I teach and then give them the necessary applications to strengthening their understanding of these concepts. I make the effort to assess my students' abilities and then address each student based on his abilities. My teaching experience includes teaching courses in mechanical engineering at the School of Mechanical Engineering at Sudan University of Science & Technology, Khartoum Sudan. Where I developed and taught a course in Applied Statistics using statistical package Minitab to provide statistical tools to the student to use in their senior project and/or MS and Ph.D. thesis. I also taught two courses in Mechanics of Machines. I am currently acting as the graduate study coordinator for the School of Mechanical Engineering and as a permanent member in the College of Engineering Graduate Researches Council. I am also acting as academic advisor for junior year students. I am serving at a committee to develop undergraduate program for Mechatronics discipline under the School of Mechanical Engineering. I also served in committees to develop, a Master program in Industrial Engineering, Production & Design Engineering, and a higher diploma program in Mechanical Engineering.

My experience also includes serving as teaching assistant at Bradley University and University of Illinois at Chicago. The job duties assigned to me were teaching finite element modeling using ANSYS software as computer lab instructor, teaching classes' sections and explaining unclear concepts and helping with the projects assigned in some of the classes. The classes included Finite Element Methods in Engineering, Statistics for Engineers, Computational Dynamics, Dynamics of Mechanical Systems, and Computer Aided Analysis of Multi-body Systems.

It also worth mentioning that during the last 10 years at Ford, I developed and improved design evaluation and verification methods/processes to fulfill engineering tasks in a more disciplined and smooth way to achieve cost, efficiency and quality. Then I taught these methods/processes to design engineers in the form of short courses as part of the Ford Design institute (FDI) activities. I also taught hands on trainings, seminars, workshops, and one to one discussion, to implement these new design methods in the product development environment. In these short courses, seminars, and workshops I taught the fundamental engineering concepts behind these methods and it is practical applications in the auto industry. I also used these educational tools to help in streamline the transition of the fresh college graduate engineers (FCG) that are hired by Ford Motor Company into the workforce.

I can teach Mechanical System Statics & Dynamics, Mechanics of Machines, Mechanics of Materials, Mechanical Engineering Design, Mechanical Controls, Mechanical Vibration, Computational Dynamics, Multi-body Systems Dynamics, Finite Element Analysis, Engineering Mathematics, and Statistics for Engineers courses for both undergrad and graduate levels.

I am also capable of developing new courses that uses the basic knowledge of Engineering applied to practical needs of the industry. Such as Experimental Design, System Engineering Fundamentals, Design for Durability, Six Sigma design, Project Management, and Parameter Design. These courses can be offered as part of the senior year elective or Master Program.

I am open to new challenges and willing to learn and share what I know. I am very confident that, with my skills, knowledge, experience, and personal qualities, I will be able to contribute to your Institution's success and advancement.

List of references

1) Dr. Ahmed A. Shabana

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