



Mohammad Bassam M.F AIDWAIK

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Mechanical Engineering

Academic Rank: Assistant Lecturer

Membership:

2017-present:	Jordan Engineers' Association. <i>Complex of professional associations-Shmesani-Amman11194, Jordan.</i>
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Qualifications:

MSc.	In Mechanical Engineering, Department of Mechanical Engineering, The University of Jordan, Amman 11942, Jordan, February , 2022. Grade: Excellent.
BSc.	In Mechanical Engineering, Faculty of Engineering, Zarqa University,Zarqa, Jordan, September, 2017. Grade: Excellent. Ranked among the top 15%.
General Secondary School Certificate, scientific stream, Jameel Shaker High School, Sweifieh, Amman 11140, Jordan.	



Professional Objective(s):

The objectives are divided into teaching and research aims. **The teaching objectives:** Convey knowledge in simple way, motivate students to engage in lecture and improve their thinking abilities. My main goals are to have the students learn the following issues:

- a. The fundamentals of a courses, the principle of operations as well as governing equations.
- b. How and when to apply these equations.
- c. Why we are learning all that.

Enhance the thinking capabilities of students. The following ways might be stated:

1. Convincing the student that what they are learning in the class is vital for them. I usually deal with it by demonstrating daily life examples and providing them examples from my own experience, ending with a final short-term project, in which students need to solve or improve a mechanical engineering situations they may notice around them. These situations can be solved by using the knowledge attained in the class or by recommending simulations-software tools.
2. Giving liability to the students to bring something to the class and to feel that they belong to a small community (the class group) and therefore they will be responsible for each other. I manage this issue by asking the students to take turns to solve problems on the board and ask other students to interact and to give feedback.
3. The content of the class should not be the only variable parameter. I typically cope with it by bringing something new to each class. Presenting slides prepared by PowerPoint enriched with images and animations which make complicated matters easy to understand, displaying posters including most recent researches related to the theme of the day or as a theme for a promising final project and inviting guest researchers from local and/or abroad industry. I do my best to fulfil these three examples, as I believe that they assist for more creativity, improving way of thinking and discovery which are very crucial skills for engineers.

The research aims: I hope that I can encourage my students to publish remarkable papers and industrial projects. For instance, the significant contribution I have made in the field of energy about solar collector which evacuated tube solar collector is a popular choice for converting solar energy into heat since it is efficient, practical, and cost-effective. The use of Al_2O_3 water-based nanofluid embedded in Graphite as a saturated porous media was numerically described in this study to improve the performance of evacuated tubes solar collectors and the potential for energy storage. The governing equations for the suggested model were expressed in a dimensionless form, and the finite difference method (FDM) was used to solve them numerically in the entrance region and analytically in the fully developed region using Forchheimer model.

The investigation of the impact on temperature fluctuation through the pipe and Nusselt number of several factors such as porosity, pore diameter, nanoparticles with solid volume fraction, pressure and conduit radius has been done. The results show that utilizing nanofluid and porous media improves the performance of the evacuated tube when compared with just using water in the same medium by 57%. Also, the comparison between nanofluids shows that the best nanofluid was Al_2O_3 . The best results had a significant effect on the solid volume fraction rate of nanoparticles in nanofluids obtained at low Reynolds and Prandtl numbers. Heat transfer and temperature both rise as the volume fraction of nanofluids increases.



Teaching Experience:

#	From	to	
1.	Oct. 2022	Present:	Assistant Lecturer, lecturing on: Engineering Drawing, Engineering Programming Language(MATLAB), Mechanics of Materials, Machine Design (2), Lab of Mechanics of Materials, Lab of Machine Design (2), Lab of Dynamics & Vibrations, Lab of Heat Transfer, Zarqa University, P.O. Box 132222, Postal Code 13132, Zarqa, Jordan, Faculty of Engineering, Department of Mechanical Engineering.
2.	April 2018	Oct. 2022:	Teacher assistant, lecturing on: Engineering Drawing, Engineering Programming Language(MATLAB), AUTOCAD Drawing, Lab of Mechanics of Materials, Lab of Machine Design (2), Lab of Dynamics & Vibrations, Zarqa University, P.O. Box 132222, Postal Code 13132, Zarqa, Jordan, Faculty of Engineering, Department of Mechanical Engineering.

Publications:

#	Title	Publisher	Year/ Issue (Vol/No)
1.	Performance enhancement of an evacuated tubes solar collector using Forchheimer's saturated porous media with embedded nanofluid	<i>SAGE Publications, Published in Advances in Mechanical Engineering</i>	2022/03 (14/03)

Personal Information

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