

- WEBINAR SERIES -

December 11th, 2023

Online (WebEx)*

Fluid Power Education (at Purdue University)

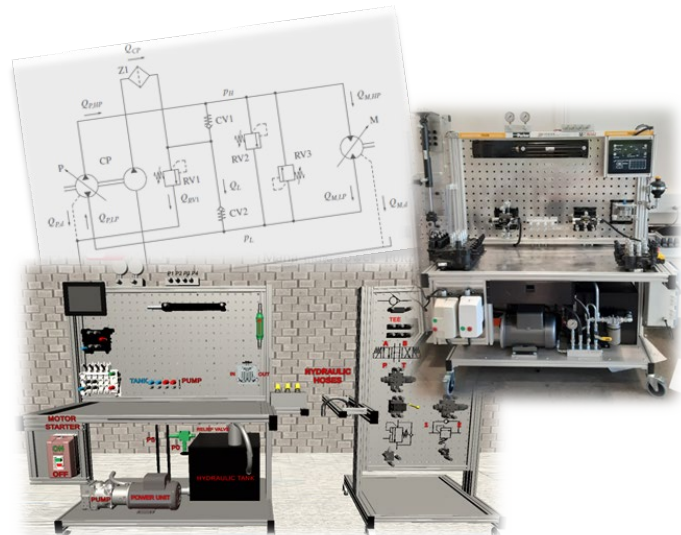
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Abstract

Despite the widespread use of hydraulic and pneumatic technologies in industrial and mobile applications, fluid power (FP) education has been a critical bottleneck of technological progresses. There is a lack of engineering programs worldwide that educate students to the FP discipline, resulting into an insufficient workforce able to tackle the most recent technological challenges towards the formulation of a more energy efficient and sustainable motion control technology that can leverage advantages of FP.

There are only a handful of notable educational FP programs representing an exception in this adverse scenario. Among these, the FP program at Purdue University has unique strengths that can serve as a model for education to modern FP technology.

This webinar focuses on the effort made in the recent years by the Maha Fluid Power Research Center to formulate and develop tools that can effectively impact FP education. Beside contributing to the field with innovative textbooks, significant work has focused to the development of hands-on experiences that can complement the student's learning of theoretical FP concepts. New physical trainers have been developed under the support of Parker Hannifin to practice both basic FP concepts as well as advanced actuation systems using state of the art FP components and electronics that provide the students with a feeling of a modern technology. To surpass limitations of physical trainers, i.e. high cost, spatial requirements, usage constraints, and limitation of lab hours in a typical FP class, a virtual trainer was developed in a virtual reality environment (Unity3D) to replicate the functionalities of the physical trainers. Both trainers allow the students to execute the same lab handouts, and implement similar troubleshooting or learn by mistake methods. Additionally, the virtual trainers can be used in replacement of traditional worked out homework. The webinar will provide details on the above tools as well as examples of use, and it will end with a Q&A sessions where observations and suggestions can be provided by the audience.



(*) The webcast link will be shared to Maha members, as well as to companies interested in joining the Maha center.

For more information on the webcast, and for receiving the webcast link, please contact avacca@purdue.edu, or shangl@purdue.edu, or Prithvi at pchandir@purdue.edu