

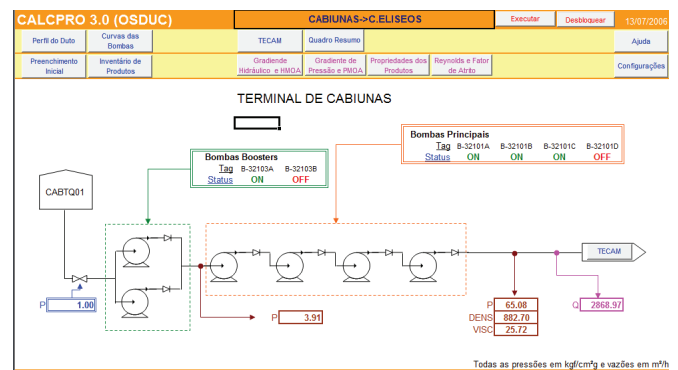
# Pipeline Thermo-Hydraulic Simulation Group

## Courses and Training

SIMDUT – Pipeline Thermo-Hydraulic Simulation Group, a laboratory of the Department of Mechanical Engineering of PUC-Rio, has as one of its objectives, training specialized professionals in the area of pipeline simulation and operation. Toward this objective, SIMDUT offers short courses such as “Computational simulation of pipelines” and “Application of simulators to the study energy economy in pipeline systems operation.” SIMDUT also develops softwares to be used in supporting the training of pipeline operators.

### Thermo-Hydraulic Simulation of Pipelines Course

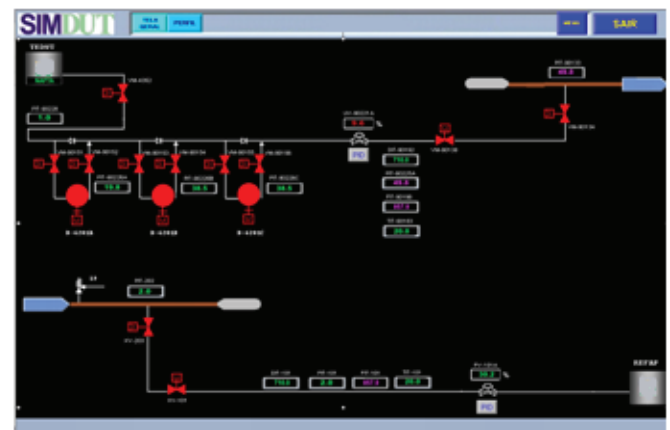
With a focus on engineers, operators, designers, and technicians, this course aims at providing to the professionals an overall view of the requirements for the construction of effective computational models for the operational simulation of pipelines. The course emphasizes both a theoretical basis and exercises using in-house and commercially available simulators.



### Real Time Pipeline Simulators

A real time transient simulator is a numeric tool capable of simulating the behavior of a pipeline system, respecting the real response times of all transient events. The starting of a pipeline system, for example, can take several minutes, and requires many process like closing and opening of valves, pump starting, setpoint ajustment, etc, all occurring at different instants, which requires an real time simulator to represent the operation correctly.

One of the main applications of real time simulators is as a training simulator for operators. This training can be used for improving operator’s skills, and also as a tool to train and evaluate operator’s skills in a specific system. SIMDUT has developed operator training simulators for 17 oil pipelines of Transpetro



### Postgraduate – Pipeline Engineering Course

IMDUT researchers offer the topic Computational Simulation of Oil Pipelines as part of the post graduate course “Pipeline Engineering” at PUC-Rio. This 360-hour specialization course was the first course in the area and has been offered annually to the pipeline community since 1999.

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