COURSE OVERVIEW PE0362
Accelerated Development Program for Young Engineers in Refining

Course Title
Accelerated Development Program for Young Engineers in Refining

Course Date/Venue
Session 1: June 22-26, 2025/Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
Session 2: September 07-11, 2025/Crowne Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA

Course Reference
PE0362

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Accelerated Development Program for Young Engineers in Oil Processing. It covers the basic concepts in petroleum geology, exploration techniques and reservoir characteristics; the oil processing facilities and health, safety, and environmental (HSE) considerations in oil processing operations; the physical and chemical properties of crude oil and techniques for separating gas, oil and water mixtures; the wellhead operations, oil and gas separation, water treatment and disposal and gas conditioning and processing; the crude oil stabilization and storage; and ensuring reliable flow of hydrocarbon streams through pipelines and equipment.

During this interactive course, participants will learn the design, operation and maintenance of oil and gas pipelines and pumping stations; the tanker operations, crude oil shipping, storage tank design and operations, metering, measurement and quality control in oil processing; the pipeline integrity management and safety practices; the refining processes, distillation processes and conversion processes; the methods for treating and blending refined products and addressing safety and environmental management; the economic aspects of refining, project management basics for engineers and innovation and technology in oil processing; and the career paths in oil processing and the essential skills to develop for young engineers.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on accelerated development program for young engineers in oil processing
- Discuss the basic concepts in petroleum geology, exploration techniques and reservoir characteristics
- Identify oil processing facilities including health, safety, and environmental (HSE) considerations in oil processing operations
- Recognize the physical and chemical properties of crude oil and techniques for separating gas, oil and water mixtures
- Carryout wellhead operations, oil and gas separation, water treatment and disposal and gas conditioning and processing
- Apply crude oil stabilization and storage and ensure reliable flow of hydrocarbon streams through pipelines and equipment
- Design, operation and maintain oil and gas pipelines and pumping stations
- Carryout tanker operations, crude oil shipping, storage tank design and operations, metering, measurement and quality control in oil processing
- Employ pipeline integrity management and safety practices as well as illustrate refining processes, distillation processes and conversion processes
- Implement methods for treating and blending refined products and address safety and environmental management
- Discuss the economic aspects of refining, project management basics for engineers and innovation and technology in oil processing
- Recognize the career paths in oil processing and the essential skills to develop for young engineers

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of accelerated development program for young engineers in oil processing.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Mervyn Frampton is a **Senior Process Engineer** with over **30 years** of industrial experience within the **Oil & Gas**, **Refinery**, **Petrochemical** and **Utilities** industries. His expertise lies extensively in the areas of **Process Troubleshooting**, **Distillation Towers**, **Fundamentals of Distillation** for Engineers, **Distillation** Operation and Troubleshooting, **Advanced Distillation** Troubleshooting, **Distillation** Technology, Vacuum **Distillation**, **Distillation Column** Operation & Control, **Oil Movement** Storage & Troubleshooting, **Process Equipment** Design, Applied **Process Engineering** Elements, **Process Plant** Optimization, **Revamping & Debottlenecking**, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Plant** Monitoring, **Catalyst** Selection & Production Optimization, Operations Abnormalities & Plant Upset, **Process Plant** Start-up & Commissioning, **Clean Fuel** Technology & Standards, Flare, Blowdown & Pressure Relief Systems, **Oil & Gas Field Commissioning** Techniques, **Pressure Vessel** Operation, **Gas Processing**, **Chemical** Engineering, **Process Reactors** Start-Up & Shutdown, **Gasoline Blending** for Refineries, **Urea Manufacturing** Process Technology, Continuous Catalytic Reformer (**CCR**), **De-Sulfurization** Technology, Advanced Operational & Troubleshooting Skills, Principles of Operations Planning, **Rotating Equipment** Maintenance & Troubleshooting, **Hazardous Waste Management & Pollution Prevention**, **Heat Exchangers & Fired Heaters** Operation & Troubleshooting, **Energy Conservation** Skills, **Catalyst Technology**, **Refinery & Process Industry**, **Chemical Analysis**, **Process Plant**, **Commissioning & Start-Up**, **Alkylation**, **Hydrogenation**, **Dehydrogenation**, **Isomerization**, **Hydrocracking & De-Alkylation**, **Fluidized Catalytic Cracking**, **Catalytic Hydrodesulphuriser**, **Kerosene Hydrotreater**, **Thermal Cracker**, **Catalytic Reforming**, **Polymerization**, **Polyethylene**, **Polypropylene**, Pilot Water Treatment Plant, **Gas Cooling**, **Cooling Water Systems**, Effluent Systems, Material Handling Systems, **Gasifier**, **Gasification**, Coal Feeder System, **Sulphur Extraction Plant**, **Crude Distillation Unit**, **Acid Plant Revamp** and **Crude Pumping**. Further, he is also well-versed in HSE Leadership, Project and Programme Management, Project Coordination, Project Cost & Schedule Monitoring, Control & Analysis, Team Building, Relationship Management, Quality Management, Performance Reporting, Project Change Control, Commercial Awareness and Risk Management.

During his career life, Mr. Frampton held significant positions as the **Site Engineering Manager**, **Senior Project Manager**, **Process Engineering Manager**, **Project Engineering Manager**, **Construction Manager**, **Site Manager**, **Area Manager**, **Procurement Manager**, **Factory Manager**, **Technical Services Manager**, **Senior Project Engineer**, **Process Engineer**, **Project Engineer**, **Assistant Project Manager**, **Handover Coordinator** and **Engineering Coordinator** from various international companies such as the **Fluor Daniel**, **KBR** South Africa, **ESKOM**, MEGAWATT PARK, CHEMEPIC, PDPS, CAKASA, **Worley Parsons**, Lurgi South Africa, **Sasol**, **Foster Wheeler**, **Bosch** & **Associates**, **BCG** Engineering Contractors, Fina Refinery, Sapref Refinery, Secunda Engine Refinery just to name a few.

Mr. Frampton has a **Bachelor's degree** in **Industrial Chemistry** from **The City University** in **London**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and has delivered numerous trainings, courses, workshops, conferences and seminars internationally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of the Oil & Gas Industry:*** *History, Current Landscape & Future Trends*
0930 – 0945	*Break*
0945 – 1030	***Petroleum Geology & Exploration:*** *Basic Concepts in Petroleum Geology, Exploration Techniques & Reservoir Characteristics*
1030 – 1130	***Oil Processing Facilities:*** *Overview of Upstream, Midstream & Downstream Operations*
1130 – 1215	***Health, Safety & Environmental (HSE) Considerations:*** *Importance of HSE Practices in Oil Processing Operations*
1215 – 1230	*Break*
1230 – 1330	***Crude Oil Properties & Specifications:*** *Understanding the Physical & Chemical Properties of Crude Oil that Influence Processing*
1330 – 1420	***Basic Separation Processes:*** *Techniques for Separating Gas, Oil & Water Mixtures*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Wellhead Operations:*** *Equipment & Operations at the Wellhead, including Flow Control & Measurement*
0830 – 0930	***Oil & Gas Separation:*** *Detailed Examination of Separation Process Stages & Equipment*
0930 – 0945	*Break*

0945 – 1100	***Water Treatment & Disposal:*** *Techniques for Treating Produced Water for Disposal or Reinjection*
1100 – 1215	***Gas Conditioning & Processing:*** *Basics of Gas Dehydration, Sweetening, & Condensate Stabilization*
1215 – 1230	*Break*
1230 – 1330	***Crude Oil Stabilization & Storage:*** *Methods for Stabilizing Crude Oil for Storage & Transport*
1330 – 1420	***Flow Assurance:*** *Ensuring Reliable Flow of Hydrocarbon Streams Through Pipelines & Equipment*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Pipelines & Pumping Stations:*** *Design, Operation & Maintenance of Oil & Gas Pipelines & Pumping Stations*
0830 – 0930	***Tanker Operations & Crude Oil Shipping:*** *Basics of Maritime oil Transport, including Tanker Design & Crude Oil Loading/Unloading Operations*
0930 – 0945	*Break*
0945 – 1100	***Storage Tank Design & Operations:*** *Types of Storage Tanks, Design Considerations & Operational Practices*
1100 – 1215	***Metering & Measurement:*** *Techniques & Equipment for Accurate Measurement of Oil & Gas*
1215 – 1230	*Break*
1230 – 1330	***Quality Control in Oil Processing:*** *Ensuring Product Quality through Testing & Standards Compliance*
1330 – 1420	***Pipeline Integrity & Safety:*** *Pipeline Integrity Management & Safety Practices*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

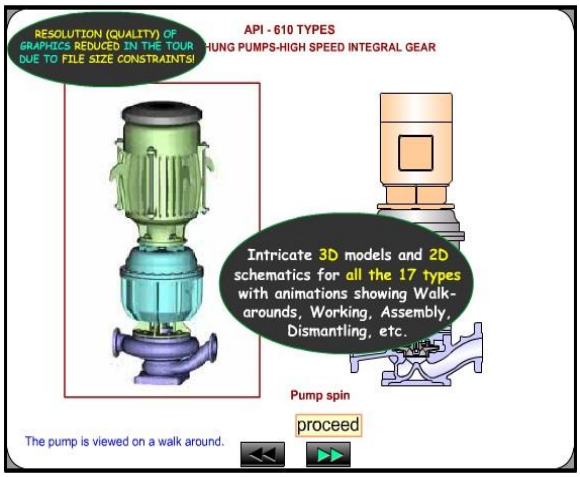
0730 – 0830	***Overview of Refining Processes:*** *The Complexity & Objectives of Crude Oil Refining*
0830 – 0930	***Distillation Processes:*** *Atmospheric & Vacuum Distillation Units & their Role in Refining*
0930 – 0945	*Break*
0945 – 1100	***Conversion Processes:*** *Catalytic Cracking, Hydrocracking & Thermal Conversion Methods*
1100 – 1215	***Treatment & Blending:*** *Methods for Treating & Blending Refined Products to Meet Specifications*
1215 – 1230	*Break*
1230 – 1330	***Refinery Safety & Environmental Management:*** *Addressing Safety & Environmental Challenges in Refineries*
1330 – 1420	***Economic Aspects of Refining:*** *Margins, Profitability & Cost Management in Refining Operations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

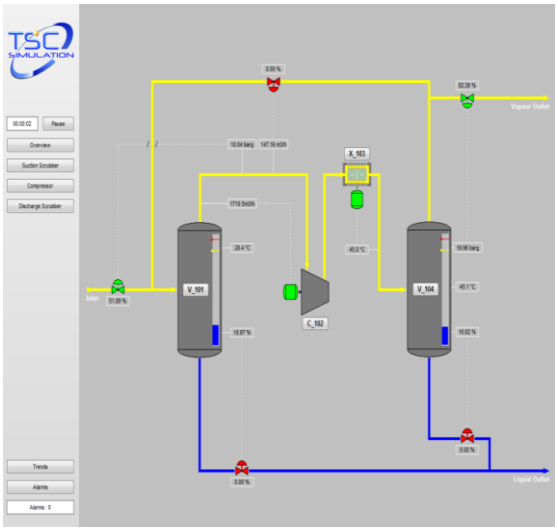
0730 – 0830	***Project Management Basics for Engineers:*** *Principles of Project Management in the Context of oil Processing Projects*
0830 – 0930	***Innovation & Technology in Oil Processing:*** *Emerging Technologies & their Impact on the Oil Processing Industry*
0930 – 0945	*Break*
0945 – 1100	***Career Paths in Oil Processing:*** *Overview of Career Opportunities & Progression Paths for Engineers*
1100 – 1230	***Skills Development for Young Engineers:*** *Essential Skills for Success, Including Technical, Managerial & Interpersonal Skills*
1230 – 1245	*Break*
1245 – 1345	***Case Studies of Successful Projects:*** *Examples of Successful Oil Processing Projects & Lessons Learned*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

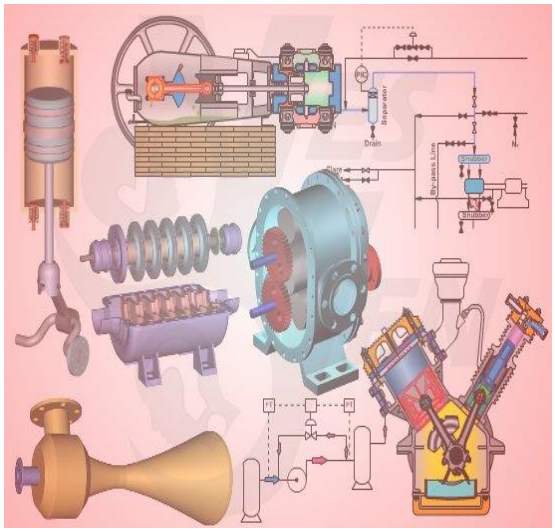
Practical session will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators "Centrifugal Pumps and Troubleshooting Guide 3.0", "SIM 3300 Centrifugal Compressor", "CBT on Compressors", "Steam Turbines & Governing System CBT", "Single Shaft Gas Turbine", "Two Shaft Gas Turbine Simulator", "Heat Exchanger Tube Layout", "Valve Sizing Simulator", "Valve Simulator 3.0", "Valvestar 7.2 Simulator", "PRV2SIZE Simulator", "Gas Ultrasonic Meter (USM) Sizing Tool Software", "Liquid Turbine Meter and Control Valve Sizing Tool Software", "Liquid Ultrasonic Meter Sizing Tool Software" and "Orifice Flow Calculator Software".



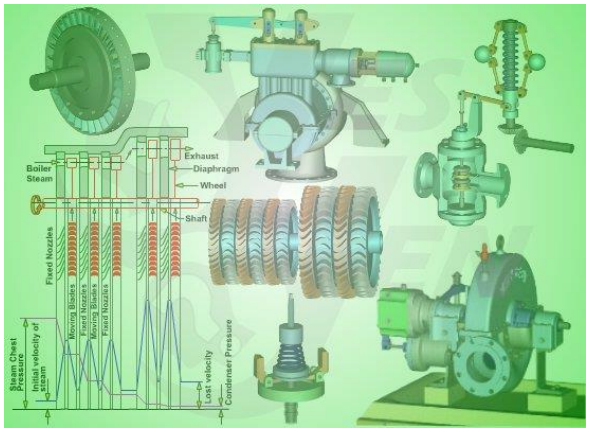
Centrifugal Pumps and Troubleshooting Guide 3.0



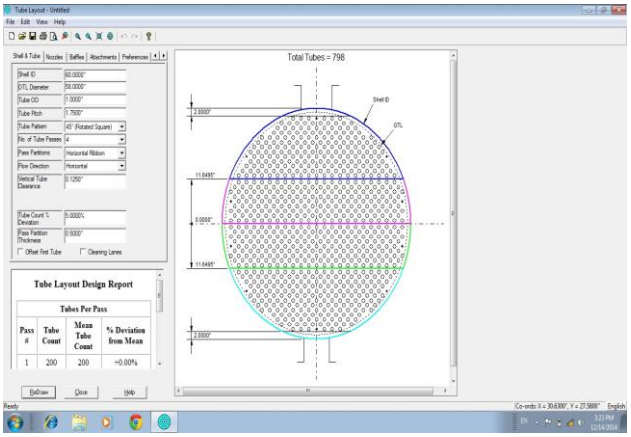
SIM 3300 Centrifugal Compressor Simulator



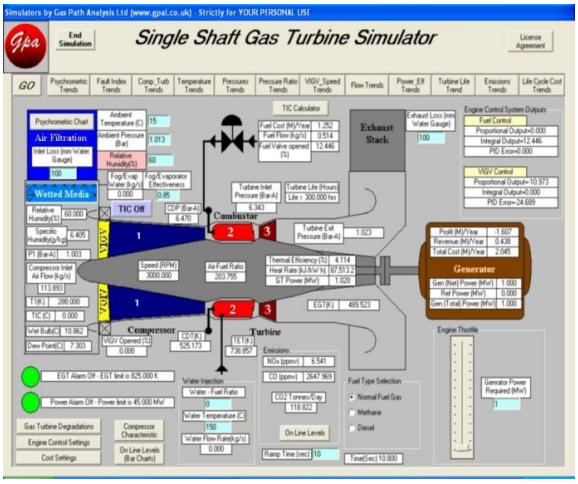
CBT on Compressors



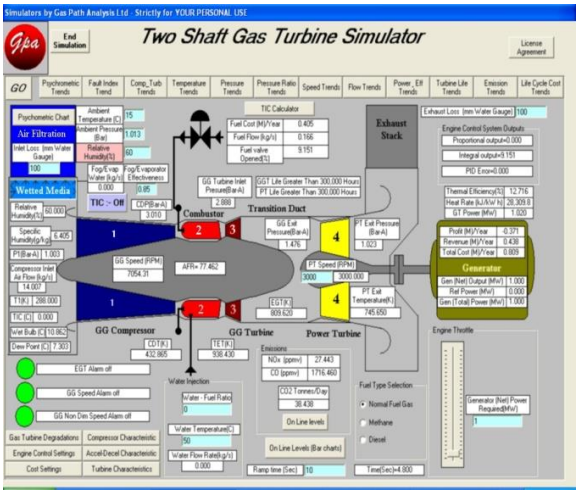
Steam Turbines & Governing System CBT



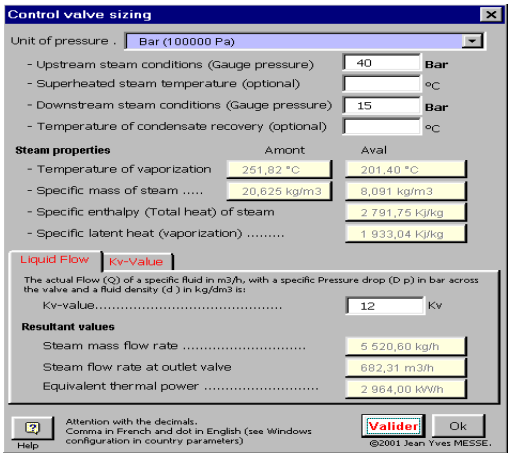
Heat Exchanger Tube Layout



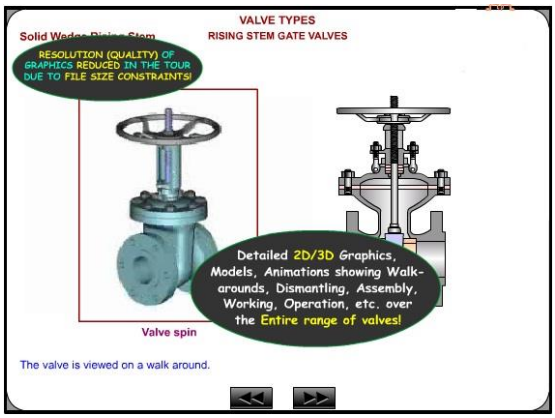
Single Shaft Gas Turbine Simulator



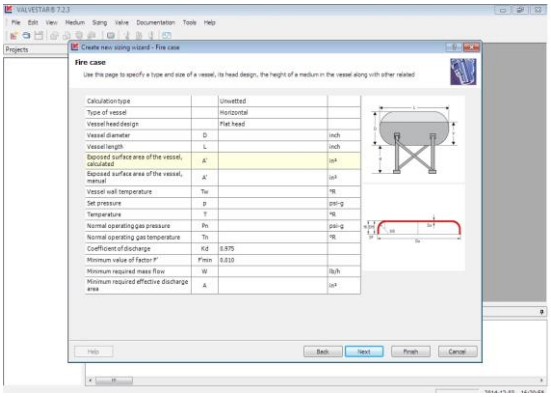
Two Shaft Gas Turbine Simulator



Valve Sizing Simulator

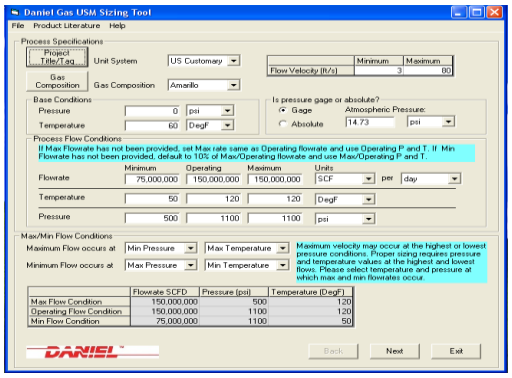


Valve Simulator 3.0

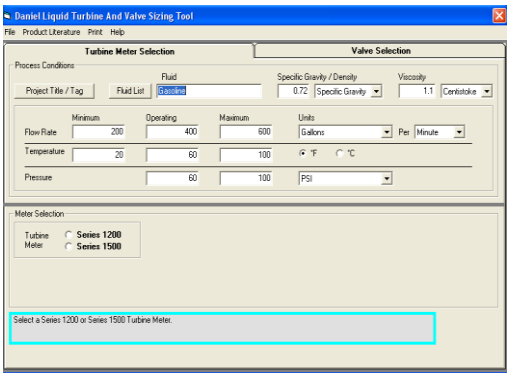


Valvestar 7.2 Simulator

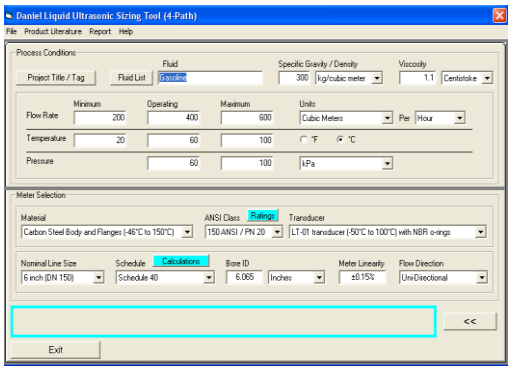
PRV2SIZE Simulator



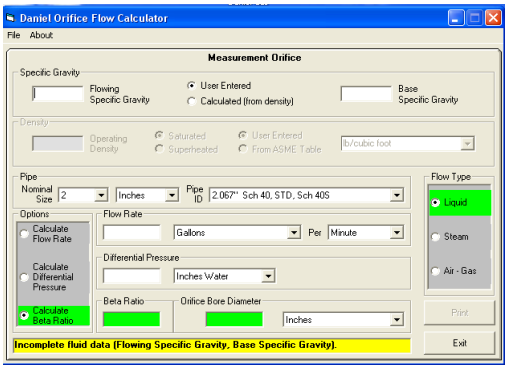
Gas Ultrasonic Meter (USM) Sizing Tool Software



Liquid Turbine Meter and Control Valve Sizing Tool Software



Liquid Ultrasonic Meter Sizing Tool Software



Orifice Flow Calculator Software

Course Coordinator

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