

INSTRUCTIONAL MODULES

INTRODUCTION

I refer to my smallest units of instruction as “modules”. They are the building blocks of individual programs; they are selected and customized to fit the needs of the group, subject to time available.

The modules are supported by a variety of reference materials and interactive exercises developed using GASWorks™, GASCalc™, XMap™ GIS software and customized MS Excel™ spreadsheets. Exercises are designed to reinforce presentations by requiring the student to think actively and critically as a member of a team developing reasonable solutions to structured problems.

Modules are developed keeping in mind that the vast majority of gas industry personnel are more interested in practice than in theory. Language is professional but straightforward; standard industry terminology is used as much as possible. Details are the minimum necessary to get the point across. The content of each module is periodically reviewed and revised to reflect the latest industry practice.

Presentations are developed using MS PowerPoint™ software. Text, images and animations are selected to stimulate and keep interest as well as to ensure the main points of the presentation are sufficiently covered. Handouts are developed from the presentations for use as learning aids.

All presentations and handouts are copyrighted by the author, and are intended for classroom use by the students only. No recording of classroom sessions is allowed, primarily because of past experience where it has inhibited instructor and student participation and interaction.

MODULES

The following list are modules that have been presented or in development as of this date. Each module presents approximately one to three hours of presentation time, depending on the audience and level of detail required. Additional details are available.

- Introduction to System Planning
- Load Behavior, Estimation, & Prediction
- Load Workshop
- Flow of Gas in Piping Systems
- Gas Flow Workshop
- Sizing of Stub Mains, Services & Fuel Runs
- Principles of Capacity Design
- Engineering Economic Analysis & System Planning
- Network Analysis
- System Model Building
- System Planning Exercises
- Gas Engineering Codes & Standards

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- 49 CFR 192 (tailored as needed)
- Loading & Service Conditions; Crossings
- Design of Steel Systems
- Corrosion and Its Control
- Design of Plastic Systems
- Cast Iron Systems: Design, Operations, Maintenance, Repair/Replacement
- Valves
- Construction of Gas Mains
- Construction of Gas Services
- Testing of Mains & Services
- Pressure Regulation & Overpressure Protection
- Measurement & Metering
- Freezing & Heating
- M&R Station Planning
- M&R Station Design Workshop
- Operation, Maintenance & Repair of Steel Systems
- Operation, Maintenance & Repair of Plastic Systems
- Upgrading
- Odorization
- Leaks: Surveys, Detection, Classification, Pinpointing
- Contaminants and Their Control
- Damage Prevention
- Emergency Response
- Basic Incident Response & Investigation
- Basics of Utilization & Customer Service
- Transmission Systems for the Gas Distribution Operator