



## Gas Conditioning and Processing - G-4

### COURSE

#### About the Course

The Campbell Gas Course has been the standard of the industry for more than 52 years. Tens of thousands of engineers have attended our G-4 program, considered by many to be the most practical and comprehensive course in the oil and gas industry. The Campbell Gas Course textbooks, Volumes 1 and 2, are routinely updated to reflect evolving technologies in this broad industry. Both hand-methods and computer-aided analysis are used to examine sensitivities of technical decisions. To enhance the learning process, about 30 problems will be assigned, reviewed, and discussed throughout the course. Problems will be solved individually and in teams.

[See details and schedule for the virtual, instructor-led sessions](#)

*"Starting a technical based career, and this course was a great opportunity to refresh on engineering topics, which I'm hopeful will translate into climbing the learning curve more quickly."* - Process Engineer, United States

*"I want to thank you for the fantastic course. I learned an amazing amount over the two weeks and notice in my daily work that I understand a lot more about the processes than I did before. Thanks for the entertaining and very enjoyable course."* - Snr Reliability & Integrity Engineer, Australia

*"This was a brilliant course and [instructor] was fantastic throughout."* - Participant, United Kingdom

#### Target Audience

Production and processing personnel involved with natural gas and associated liquids, to acquaint or reacquaint themselves with gas conditioning and processing unit operations. This course is for facilities engineers, process engineers, senior operations personnel, field supervisors, and engineers who select, design, install, evaluate, or operate gas processing plants and related facilities. A broad approach is taken with the topics.

#### You Will Learn

- Application of gas engineering and technology in facilities and gas plants
- Important specifications for gas, NGL, and condensate
- About the selection and evaluation of processes used to dehydrate natural gas, meet hydrocarbon dewpoint specifications, and extract NGLs

- How to apply physical/thermodynamic property correlations and principles to the operation, design, and evaluation of gas processing facilities
- Practical equipment sizing methods for major process equipment
- To evaluate technical validity of discussions related to gas processing
- To recognize and develop solutions for operating problem examples and control issues in gas processing facilities

## Course Content

- Gas processing systems
- Physical properties of hydrocarbons
- Terminology and nomenclature
- Qualitative phase behavior
- Vapor-liquid equilibrium
- Water-hydrocarbon phase behavior, hydrates, etc.
- Basic thermodynamics and application of energy balances
- Process control and instrumentation
- Relief and flare systems
- Fluid hydraulics; two-phase flow
- Separation equipment
- Heat transfer equipment
- Pumps
- Compressors and drivers
- Refrigeration in gas conditioning and NGL extraction facilities
- Fractionation
- Glycol dehydration; TEG
- Adsorption dehydration and hydrocarbon removal
- Gas treating and sulfur recovery
- Overview and summary

## VIRTUAL SCHEDULE

<b>Week 1</b>	Virtual Instructor-led Class	Virtual Class Hours (Approx.)	Online Learning Modules (Approximate hours)
Day 1	Orientation, Introduction, Gas Processing Overview	2.5	Gas Processing Overview 1.75 hours  Gas Processing Fundamentals 2.25 hours

Day 2	Process Engineering Fundamentals Workshop - Standard Conversions, Application of Gas Density	4.0	Hydrocarbon Phase Behavior 3.40 hours
Day 3	Process Engineering Fundamentals Workshop - Qualitative and Quantitative Phase Behavior	4.0	Water-Hydrocarbon Phase Behavior 2.00 hours + <i>0.25 hours optional content</i>
Day 4	Hydrate Inhibition Workshop	4.0	Fluid Flow 2.75 hours + <i>0.75 hours optional content</i>
Day 5	Multiphase Flow Workshop	4.0	Basic Thermodynamics and Applications of Energy Balances 1.75 hours
<b>Week 1 Total</b>	<b>Virtual Classes: 22.5 hrs</b>		<b>Online Learning: 14 hrs + 1 hr optional</b>

<b>Week 2</b>	Virtual Instructor-led Class	Virtual Class Hours (Approx.)	Online Learning Modules* (Approximate hours)
Day 1	Thermodynamic Workshop	4.0	Heat Transfer Equipment 2.25 hours
Day 2	Heat Transfer Equipment Workshop	4.0	Separation Equipment 1.5 hours
Day 3	Separation Workshop and Process Control Lecture	4.0	Relief and Flare Systems <i>1.5 hours optional content</i>
Day 4	Pump Workshop	4.0	Rotating Equipment: Pumps and Compressors 4.50 hours
Day 5	Compressor Workshop	4.0	Mechanical Refrigeration 2.00 hours

<b>Week 2 Total</b>	<b>Virtual Classes: 20 hrs</b>	<b>Online Learning: 10 hrs + 1.5 hrs optional</b>
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<b>Week 3</b>	Virtual Instructor-led Class	Virtual Class Hours (Approx.)	Online Learning Modules* (Approximate hours)
Day 1	Mechanical Refrigeration Workshop	4.0	
Day 2	NGL Extraction and Fractionation Workshop	4.0	NGL Extractionion 1.25 hours
	Supplemental Topic Lecture (Relief and Flare or LNG)		Fractionation 1.75 hours
Day 3	TEG Dehydration Workshop	4.0	TEG Dehydration 1.50 hours + 0.50 hours optional content
Day 4	Molecular Sieve Workshop	4.0	Molecular Sieve Dehydration 1.50 hours
	Supplemental Lecture (LNG Part II or Acid Gas Removal)		Acid Gas Removal 2.75 hours optional content
Day 5	Process Control Workshop	4.0	
	Course Close Out		
<b>Week 3 Total</b>	<b>Virtual Classes: 20 hrs</b>		<b>Online Learning: 6 hrs + 3.25 hr optional</b>

### Product Details

Categories: Midstream

Disciplines: Gas Processing

Levels: Foundation

Product Type: Course

Formats Available: [Virtual](#) [In-Classroom](#)

Instructors: [Peter Williams](#) [Robert Bombardieri](#) [John C. Bourdon](#) [Gerard Hageman](#) [Malcolm Harrison](#) [James Langer](#) [Harvey Malino](#) [John Morgan](#) [Mahmood Moshfeghian](#) [Jay Rajani](#) [Kindra Snow-McGregor](#) [Kenneth Sourisseau](#) [PetroSkills Specialist](#) [Chris Spilsbury](#)

### In-Classroom Format

10 Jun '24	21 Jun '24	-	Course	In-Classroom (in London)	\$9,995.00
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17 Jun '24	28 Jun '24	-	Course	In-Classroom (in Brisbane)	\$9,995.00
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22 Jul '24	2 Aug '24	-	Course	In-Classroom (in Houston)	\$9,750.00
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26 Aug '24	6 Sep '24	-	Course	In-Classroom (in London)	\$9,995.00
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7 Oct '24	18 Oct '24	-	Course	In-Classroom (in Aberdeen)	\$9,995.00
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4 Nov '24	15 Nov '24	-	Course	In-Classroom (in Stavanger)	\$9,995.00
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25 Nov '24	6 Dec '24	-	Course	In-Classroom (in Kuala Lumpur)	\$9,995.00
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2 Dec '24	13 Dec '24	-	Course	In-Classroom (in Houston)	\$9,750.00
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### Virtual Format

5 Aug '24	23 Aug '24	-	Course	Virtual ( Houston UTC)	\$8,995.00
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