Garnet
Garnet Global Training Center

GGT-CH-120

Chemical & Process Engineering

Material & Energy Balances

موازنات المادة والطاقة

Duration	Language	Formats	Hours	Level
5 or 10 days	**English or Arabic**	**Classroom, online, in-house**	**35 / 70**	**Intermediate (practitioner)**

Overview

Material & Energy Balances focuses on how the work is actually done: the methods, checks and decisions practitioners use every day, illustrated with real cases from the region. Process design, control and optimisation for chemical, petrochemical and fertiliser plants. Choose 5 or 10 days, classroom or live online, English or Arabic; organisations can also run it in-house and adapt the examples to their own work.

What you will be able to do

- Apply the methods and standards of Material & Energy Balances to real tasks.
- Use the right tools, checks and calculations step by step.
- Diagnose common problems and identify root causes.
- Interpret data and results correctly and act on them.
- Follow safe, compliant and documented work practices.

Who should attend

Process and chemical engineers, plant operators and technical service teams. Practitioners with one to five years of experience benefit most.

Key topics

- Mass and energy balances
- Unit operations
- Process control
- Simulation and optimisation
- Catalysts and reactions
- Troubleshooting

Formats and fees

5-day classroom	**USD 4,750**
5-day online	**USD 2,950**
10-day classroom	**USD 8,950**
10-day online	**USD 5,450**
In-house	**Quotation per group**

Fees per participant, excluding VAT.

Register or ask

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Email: info@garnettrainings.com

Training: training@garnettrainings.com

Web: garnettrainings.com

Sharjah Publishing City Free Zone, Sharjah, UAE

Certificate

Participants who attend at least 90% of sessions and complete the final assessment receive a certificate of completion stating 35 contact hours (5-day) or 70 contact hours (10-day).

5-day outline

Day 1 Material & Energy Balances: principles and standards

- Process control
- Common mistakes and how to avoid them

Day 2 Methods and tools in practice

- Simulation and optimisation
- Catalysts and reactions

Day 3 Diagnosis and problem solving

- Troubleshooting
- Regional and international case studies

Day 4 Quality, safety and documentation

- Mass and energy balances
- Checklists and templates to take away

Day 5 Workshop, assessment and action plan

- Unit operations
- Group discussion and peer review

10-day outline

Day 1 Material & Energy Balances: principles and standards

- Process control
- Common mistakes and how to avoid them

Day 2 Methods and tools in practice

- Simulation and optimisation
- Catalysts and reactions

Day 3 Diagnosis and problem solving

- Troubleshooting
- Regional and international case studies

Day 4 Quality, safety and documentation

- Mass and energy balances
- Checklists and templates to take away

Day 5 Workshop, assessment and action plan

- Unit operations
- Group discussion and peer review

Day 6 Advanced techniques and specialist practice

- Complex cases in depth
- Measurement and reporting

Day 7 Digital tools, data and automation

- Analysis tools and software
- Using AI in this field

Day 8 Benchmarking against international practice

- Global performance benchmarks
- Hands-on workshop on a workplace challenge

Day 9 Capstone project

- Analyse a real challenge from your organisation
- Build the solution and implementation plan

Day 10 Presentations, final assessment and certificates

- Project presentations and review
- Final exam and certificate award

Schedule 2027–2030

Dates	Format	City	Language	Fee (USD)
15–19 Feb 2027	5-day online	Live online	Arabic	2,950
15–19 Mar 2027	5-day classroom	Dubai	Arabic	4,750
19–23 Apr 2027	5-day classroom	Geneva	English	4,750
2–13 Aug 2027	10-day classroom	Amsterdam	English	8,950
14–18 Feb 2028	5-day classroom	London	English	4,750
3–14 Jul 2028	10-day classroom	Dubai	Arabic	8,950
21–25 Aug 2028	5-day classroom	Geneva	English	4,750
4–15 Sep 2028	10-day online	Live online	English	5,450
1–5 Jan 2029	5-day online	Live online	Arabic	2,950

Dates	Format	City	Language	Fee (USD)
2–13 Apr 2029	10-day classroom	Abu Dhabi	English	8,950
13–17 May 2029	5-day classroom	Doha	Arabic	4,750
5–9 Nov 2029	5-day classroom	Kuala Lumpur	English	4,750
14–18 Jan 2030	5-day classroom	Abu Dhabi	English	4,750
11–15 Feb 2030	5-day classroom	Amsterdam	English	4,750
10–21 Jun 2030	10-day classroom	Paris	English	8,950
1–12 Jul 2030	10-day online	Live online	English	5,450

Customised and in-house versions of this course are available on request. garnettrainings.com/en/customise/