TECHNICAL EDUCATION ACADEMY

School of Business and Management

COURSE PROGRAMME

000512

PRME013 - Process Plant Start-up and Commissioning

This course covers important stages and aspects of the commissioning and start-up process of facilities in the oil and gas industry.



Learn from the Best in the Business!

Course overview

Duration: 3 days / 24 hours · Advanced level

Why take this course

This course covers important stages and aspects of the commissioning and start-up process of facilities in the oil and gas industry. It begins with the design phase, focusing on the development of a commissioning program and preparation for commissioning activities.

The course addresses the construction phase, which includes the completion of mechanical work and the execution of factory acceptance tests. Control and acceptance procedures, the mechanical completion management system, and start-up planning are also part of the program.

The course covers the pre-acceptance phase of the facility, commissioning of electrical devices, and typical pre-start-up tests. It also addresses safety and risk management issues in the oil and gas industry.

Additionally, the course includes information on project management methods during the commissioning phase, including the critical path method, flexible planning, and budgeting. It is designed for professionals working in this industry and helps them better understand and efficiently manage the commissioning and start-up process of facilities, taking into account all necessary aspects and challenges of the industry.

Who it is for and how it helps

The Process Plant Start-up and Commissioning training course is designed for professionals involved in the design, construction, operation, maintenance, and management of process plants and facilities. The course would be particularly beneficial for:

• Project Managers and Engineers responsible for the planning, execution, and management of process plant start-up and commissioning projects.

• Process Engineers involved in the design, operation, and optimization of process plants.

• Mechanical, Electrical, and Instrumentation Engineers working on plant equipment, control systems, and safety aspects of process plants.

• Plant and Operations Managers overseeing the day-to-day operations and maintenance of process plants.

• Quality Assurance and Quality Control personnel responsible for ensuring compliance with safety, environmental, and operational standards.

• Health, Safety, and Environment (HSE) professionals responsible for managing safety and environmental risks associated with process plant start-up and commissioning.

• Plant Maintenance Engineers and Technicians involved in the upkeep and improvement of plant equipment and systems.

Course overview — continued

• Technical Consultants and Contractors providing services to process plant start-up and commissioning projects.

By attending this course, participants from various disciplines will gain a comprehensive understanding of the process plant start-up and commissioning process, allowing them to collaborate more effectively and contribute to successful project outcomes.

What you will learn

- Understand the fundamentals of process plant start-up and commissioning, including key stakeholders, roles, and responsibilities
- Develop and implement effective commissioning strategies tailored to specific process plants and project requirements
- Apply best practices for mechanical completion, integrity checks, pre-commissioning, operational testing, and start-up procedures
- Recognize and address plant and machinery-specific commissioning challenges, including the integration of instrumentation and control systems
- Manage start-up and commissioning projects using project management techniques such as work breakdown structures, critical path method, and agile planning
- Monitor project progress, control costs, and evaluate performance using budgeting tools and earned value analysis
- Employ problem-solving and troubleshooting techniques to identify and resolve issues during the commissioning and start-up process
- Ensure compliance with safety, health, and environmental regulations and standards throughout the commissioning process
- Assess and mitigate risks associated with process plant start-up and commissioning to minimize potential negative impacts on project success
- Collaborate effectively with multidisciplinary teams and stakeholders to ensure smooth communication and coordination during the start-up and commissioning process.

Curriculum

Modules 01–06

01 Stages of Commissioning

- Design phase
- Commissioning program. Components of the commissioning program. Development of the commissioning structure. Commissioning schedule
- Preparation for commissioning during the design phase
- Cost of commissioning

02 Construction

- Completion of mechanical work
- Factory acceptance testing stage at the manufacturer's site
- Control and acceptance procedures at the mechanical completion stage
- Mechanical completion management system
- Start-up planning
- Pre-acceptance of the facility (PA). Start-up, initial operation, performance testing, equipment acceptance, and documentation
- Pre-commissioning work. Preliminary commissioning
- Punch list

03 Mechanical Completion

- Completion of mechanical activities at the construction site

04 Commissioning

- Commissioning of electrical devices. Preparation, isolation, and power supply for process units. Consideration of the specifics and challenges during start-up and commissioning of individual units

05 Start-up and Pre-commissioning

- Typical pre-start-up tests

06 PSSR Approach for Oil and Gas Industry Projects

- PSSR approach for oil and gas industry projects

Curriculum

Modules 07–10

07 Raw Material Acceptance

- Raw material acceptance

08 Project Management for Start-up and Commissioning

- Critical path method and resource allocation
- Flexible planning and iterative approaches to start-up and commissioning
- Budgeting, progress control, and cost management

09 Overcoming Challenges, Risk Management, and Safety Issues

- Overcoming challenges, risk management, and safety issues

10 Commissioning of Industrial Process Equipment in the Republic of Kazakhstan

- Commissioning of industrial process equipment in the Republic of Kazakhstan

Programme instructor



Александр Александрович

Александр Александрович – уникальный специалист в нефтегазовой отрасли с более чем 40-летним успешным опытом работы в ведущих компаниях, таких как «Тенгизшевройл», «Лукойл» и Saipem. Он получил образование по специальности «инженер-химик – технолог по переработке нефти и газа» в Пермском политехническом институте и прошел многочисленные курсы и обучающие программы в России и за рубежом.

Александр Александрович участвовал в реализации крупных российских и международных проектов, имеет многолетний опыт управления технологическими процессами по переработке нефти и газа с высоким содержанием H2S. Он работал начальником технологической установки по переработке сырья с высоким содержанием H2S и главным оператором технологических установок на Карачаганакском месторождении. Он также занимался проектированием и модернизацией трубопроводов и контролировал соблюдение техники безопасности в ходе строительства, пуско-наладки и пуска объектов по переработке нефти и газа, анализировал опасные факторы производства и расследовал производственные аварии.

Кроме того, Александр Александрович имеет опыт работы в области техники безопасности на строительстве нефтепровода и газопровода «Сахалин-2», руководил командой технического надзора на строительстве завода сжиженного природного газа, морских терминалов отгрузки нефти и сжиженного газа, а также руководил монтажом и контролем качества работ на Газокомпрессорных станциях трубопроводной системы Казахстан-Китай. Он также обустраивал кустовые скважины на месторождениях West Qurna-2 с нулевой отметки до пуска.

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Participant ratings

Programme evaluation based on participant feedback

Overall programme rating — 4.9 / 5

Clarity of learning objectives	**4.4 / 5**
Confidence in applying knowledge and skills	**4.4 / 5**
Achievement of learning objectives	**4.4 / 5**
Relevance of content to job tasks	**4.4 / 5**
Suitability of difficulty for the level of preparation	**4.4 / 5**
Increase in knowledge	**4.4 / 5**
Skills development	**4.4 / 5**
Willingness to recommend the programme to colleagues	**4.4 / 5**

8 responses

Joining the programme

Contact the Academy and quote course code 000512 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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