

Course #1: Hydroprocessing with FCC Pre-Treat Deep Dive:

Providing a strong foundation in multiple hydroprocessing applications focusing on a deep-dive within FCC Pretreat technology, this course has been developed for engineering and operations personnel who have entered the hydroprocessing field and are looking for a deeper practical and theoretical knowledge base and desire a detailed review on the technologies employed at their facilities.

This hydroprocessing session will focus on growing diverse yet practical process engineering skills used in all hydroprocessing applications. The journey begins with reaction chemistry, catalyst fundamentals, and an overview of all hydroprocessing technologies leading to the deep-dive into FCC PT operations. The course covers best practices and advanced techniques in unit monitoring & troubleshooting, reactor loading, start-up and shutdown, and the effects of feed quality, contaminants and corrosion. All of our subject matter fundamental concepts are delivered objectively providing participants the benefit of Criterion's process engineering and R&D experts.

The deeper dive into FCC Pre-Treat application will use real world case studies to explore changes in performance and operation of the hydroprocessing unit and how it can affect multiple units within the refinery as well as overall site profitability. A deeper understanding the drivers and issues, and how to optimize integrated operations will enable increased site performance and reliability. Deep-Dive Segments providing this insight include:

- FCC Operation and Response from Changing Feed Quality
- FCC Pretreat Unit Design and Performance Benchmarking
- FCC Pretreat Unit Reaction Chemistry, Process Variable, and Catalyst Deactivation
- Making Performance Predictions from Changing Process Variables
- Clean Fuels FCC Pretreat and FCC Operations

We have designed the course to encourage a free and open exchange of information among participants, incorporating groups and process simulation exercises in the learning processes.

Course #2: Hydroprocessing with Ultra Low Sulfur Diesel Deep Dive:

Providing a strong foundation in multiple hydroprocessing applications focusing on a deep-dive within Ultra Low Sulphur Diesel (ULSD) technology, this course has been developed for engineering and operations personnel who have entered the hydroprocessing field and are looking for a deeper practical and theoretical knowledge base and desire a detailed review on the technologies employed at their facilities.

This hydroprocessing session will focus on growing diverse yet practical process engineering skills used in all hydroprocessing applications. The journey begins with reaction chemistry, catalyst fundamentals, and an overview of all hydroprocessing technologies leading to the deep-dive into ULSD operations. The course covers best practices and advanced techniques in unit monitoring & troubleshooting, reactor loading, start-up and shutdown, and the effects of feed quality, contaminants and corrosion. All of our subject matter fundamental concepts are delivered objectively providing participants the benefit of Criterion's process engineering and R&D experts.

The deeper dive into ULSD application will use real world case studies to explore changes in performance and operation of the hydroprocessing unit and how it can affect multiple units within the refinery as well as overall site profitability. A deeper understanding of the drivers and issues, and how to optimize integrated operations will enable increased site performance and reliability.

Deep-Dive Segments providing this insight include:

- ULSD chemistry and process variables
- Catalyst selection
- Process safety
- Feed optimization and Maximizing volume swell
- Beyond ULSD including mild hydrocracking, Cetane upgrade and dewaxing
- ULSD Clean Fuels best practices

We have designed the course to encourage a free and open exchange of information among participants, incorporating group exercises and case studies in the learning process.

Course #3: Hydrocracking hydroprocessing Deep Dive:

Providing a strong foundation in hydrocracking and pre-treat hydroprocessing technology, this course has been developed for engineering and operations personnel who have entered the hydroprocessing field and are looking for a deeper practical and theoretical knowledge base and desire a detailed review on the technologies employed at their facilities.

This session will focus on growing diverse yet practical process engineering skills used in all hydroprocessing and hydrocracking operations. The journey begins with reaction chemistry, catalyst fundamentals, and an overview of all hydroprocessing technologies leading to the deep-dive into Hydrocracking and pre-treat operations. The course covers best practices and advanced techniques in unit monitoring & troubleshooting, reactor loading, start-up and shutdown, and the effects of feed quality, contaminants and corrosion. All of our subject matter fundamental concepts are delivered objectively providing participants the benefit of Criterion's process engineering and R&D experts.

The deeper dive into hydrocracking will use real world case studies to explore changes in performance and operation of the hydrocracking and hydroprocessing pre-treat unit and how it can affect multiple units within the refinery as well as overall site profitability. A deeper understanding of the drivers and issues, and how to optimize integrated operations will enable increased site performance and reliability.

Deep-Dive Segments providing this insight include:

- HC & HCPT chemistry and process variables
- Catalyst selection
- Process safety
- Feed optimization and Maximizing volume swell
- Mild hydrocracking, cut point optimization
- Making Performance Predictions from Changing Process Variables
- Clean Fuels and HCPT optimization for tough feed

We have designed the course to encourage a free and open exchange of information among participants, incorporating group exercises and case studies in the learning process.