

<p>KLM Technology Group</p> <p>Practical Engineering Guidelines for Processing Plant Solutions</p>	<table border="1"><tr><td data-bbox="548 128 799 247">KLM</td><td data-bbox="799 128 1133 247">Technology Group</td></tr></table> <p>Engineering Solutions Consulting, Guidelines, and Training</p> <p>www.klmtechgroup.com</p>	KLM	Technology Group	<p>Page 1 of 8</p> <p>Rev 1.1</p>
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Advanced Oils and Fats Processing and Equipment Training Course

Introduction

The success of every company depends on each employee's understanding of the key business components. Employee training and development will unlock the companies' profitability and reliability. When people, processes, and technology work together as a team developing practical solutions, companies can maximize profitability and assets in a sustainable manner. Training and development are an investment in future success - give yourself and your employees the keys to success.

It is strategically important that your team understands the fundamentals of process unit operations concepts. This is the difference between being in the best quartile of operational ability and being in the last quartile. There is vast difference in the operational ability of operating companies and most benchmarking studies have confirmed this gap in operational abilities.

Whether you have a team of new or seasoned employees, an introduction or review of these concepts are very beneficial in closing the gap if you are not in the best quartile or maintaining a leadership position. Most studies show that a continuous reinforcement of best practices in operational principles is the most effective way to obtain the desired results. Training and learning should be an ongoing continuous lifelong goal.

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Course Objective

This course will guide the participants to develop key concepts and techniques for Oil and Fats Processing and Equipment. These key concepts can be utilized to make operating decisions that can improve your unit's performance.

Many aspects of Oil and Fats Processing and Equipment operations management can be improved including product recoveries, purities and energy utilization, and safety. This cannot be achieved without first an understanding of basic fundamental principles of design and operation. These principles need to be understood in advance of operating and trouble shooting a process unit operation for the manager or problem solving to be effective.

This seminar focuses on the core building blocks of Oil and Fats Processing and Equipment process systems, equipment, and economics. This program will emphasize the process unit operation fundamentals, safe utilization of these fundamentals by operations, engineering, maintenance, and support personnel.

Course Duration and Delivery

A typical course duration is 3 to 5 days based on the background of the participants. One of our Senior Technical Professional with over 25 years of experience would lead the class. Instruction can be in a regional seminar, in house or in an online webinar.

This course is an advanced course for these topics – for a more introductory course consider attending our introductory course. Each of the topics will be covered in more technical detail.

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Syllabus

Introduction

- The Global Oils and Fats Markets

Review of Process Incidents

- Safety for the Processing Industry

Fundamentals of Oils and Fats Chemistry

- Description of Oil and Fats Molecules
- Composition and Structure
- Minor Constituents of Oils and Fats
- Typical Specifications

Sustainability

- Role of Oil and Fats in Sustainability
- Net Zero Green House Gas Emissions
- Pillars of Sustainability

Process Equipment Troubleshooting

- Troubleshooting concepts and techniques
- Typical Problems
- Interaction of Process and Equipment
- Tower Inspection Case Study

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Processing Equipment Design and Operation

- Pumps
- Heat Exchangers
- Distillation Columns
- Separation Vessels
- Decanter and Centrifuge Systems
- Dryer Systems
- Vacuum Systems
- Boilers and Steam Systems

Overview of Oil Extraction

- Mechanical Extraction
- Solvent Extraction
- Extraction Equipment
- Quality Control
- Safety Extraction and Electrical

Palm Oil Milling and Palm Kernels Crushing

- Palm Oil Milling
- Extraction of Crude Palm Oil
- Treatment of POME (Palm Oil Mill Effluent) and biomass
- Extraction of Palm Oil Kernels
- Equipment
- Maintenance Guidelines
- Safety Milling and Crushing

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Refining of Oils and Fats

- Physical Refining
- Chemical Refining
- Degumming
- Neutralization
- Bleaching
- Deodorization
- Palm Oil Stripping
- Equipment
- Safety

Modification of Oils and Fats

- Hydrogenation
- Interesterification
- Fractionation
- Blending
- Equipment
- Safety

Fatty Acids and Glycerin

- Fatty Acid Distillation Overview
- Glycerin Distillation Overview
- Equipment
- Safety

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Fatty Alcohols and derivatives

- Fatty Alcohols Production
- Surfactants
- Ethoxylation
- Sulphation
- Derivatives
- Equipment
- Safety

BioFuels

- Overview Bio Processing
- Achieving Renewable Energy Goals
- Bio Diesel Production
- Hydrotreated Vegetable Oil (HVO) Production
- Sustainable Aviation Jet Fuel (SAF) Production
- Equipment
- Safety

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Who Should Attend:

- People who are making day to day decisions regarding operation, design, and economics of processing plants.
 1. 1st Line Operations personnel,
 2. Operation Supervisors,
 3. 1st Line Maintenance personnel,
 4. Maintenance Supervisors,
 5. Senior Plant Supervisors,
 6. Operations Engineers
 7. Process Support Engineers,
 8. Design Engineers,
 9. Cost Engineers
 10. Environmental Professionals
 11. Chemist
 12. Sales and Marketing Specialist

- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.

- This is an opportunity for new plant personnel and for those who are experienced to meet and discuss current problems and learn how to enhance their operations.

- The course material will also serve as a useful reference for processors, product formulators, chemists and technicians as well as business managers familiar with oils and fats processing, and the production of finished products.

- Other professionals who desire a better understanding of subject matter

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What you can expect to gain:

- A detailed overview of Oil and Fats Processing Unit operations, processes, and design
- Gain an understanding of the equipment of Oil and Fats Processing Unit
- Gain an understanding of the Oil and Fats Processing Unit flow sheets
- Gain an understanding of Oil and Fats Processing Chemistry
- Troubleshooting Techniques
- Gain an insight to optimization strategies