Marine Lipids and Omega-3 Processing Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Marine Lipids and Omega-3 Processing Training Course is designed to provide participants with cutting-edge insights into the extraction, refining, and commercialization of marine-derived oils. As global demand for omega-3 fatty acids continues to rise, mastering sustainable sourcing, advanced purification techniques, and quality assurance practices has become crucial for professionals and organizations in the nutraceutical, pharmaceutical, and food sectors. This course integrates advanced research, market intelligence, and applied technical skills to enhance the competitiveness of businesses operating in the marine lipid industry.

Through hands-on learning and case study analysis, participants will explore the full value chain of marine lipids, including fish oil extraction, algae-based alternatives, encapsulation methods, and regulatory compliance. The training emphasizes innovation, sustainability, and health-driven applications, equipping professionals with the knowledge and expertise to succeed in this evolving industry. The course ensures a balance between theoretical knowledge and practical approaches, fostering a clear understanding of production optimization, market positioning, and consumer-driven product development.

Programme Curriculum

Marine Lipids and Omega-3 Processing Training Course

Introduction

Marine Lipids and Omega-3 Processing Training Course is designed to provide participants with cutting-edge insights into the extraction, refining, and commercialization of marine-derived oils. As global demand for omega-3 fatty acids continues to rise, mastering sustainable sourcing, advanced purification techniques, and quality assurance practices has become crucial for professionals and organizations in the nutraceutical,

pharmaceutical, and food sectors. This course integrates advanced research, market intelligence, and applied technical skills to enhance the competitiveness of businesses operating in the marine lipid industry.

Through hands-on learning and case study analysis, participants will explore the full value chain of marine lipids, including fish oil extraction, algae-based alternatives, encapsulation methods, and regulatory compliance. The training emphasizes innovation, sustainability, and health-driven applications, equipping professionals with the knowledge and expertise to succeed in this evolving industry. The course ensures a balance between theoretical knowledge and practical approaches, fostering a clear understanding of production optimization, market positioning, and consumer-driven product development.

Course Objectives

1. To understand the global market trends for omega-3 and marine lipids.
2. To analyze extraction and refining techniques for fish and algae oils.
3. To evaluate sustainability practices in marine lipid sourcing.
4. To master advanced purification and concentration processes.
5. To examine encapsulation and formulation technologies.
6. To identify regulatory frameworks in omega-3 production.
7. To explore innovations in nutraceutical and pharmaceutical applications.
8. To develop strategies for product quality assurance and safety.
9. To study market positioning and branding of omega-3 products.
10. To optimize cost efficiency and resource utilization.
11. To examine functional food and dietary supplement integration.
12. To apply research and development for competitive advantage.
13. To implement case study insights for business improvement.

Organizational Benefits

- Enhanced organizational knowledge in omega-3 processing technologies
- Improved compliance with international quality standards
- Strengthened sustainable sourcing and corporate responsibility
- Increased product innovation and differentiation in the marketplace
- Optimization of production processes for cost savings
- Expanded market reach in nutraceutical and pharmaceutical sectors
- Enhanced reputation through regulatory compliance
- Improved consumer trust and product credibility
- Strengthened capacity for research-driven product development
- Increased competitiveness in the global marine lipid industry

Target Audiences

- Food technologists
- Nutraceutical developers
- Pharmaceutical researchers
- Quality assurance professionals
- Sustainability managers
- Marine biology specialists
- Regulatory compliance officers
- R&D scientists

Course Duration: 10 days

Course Modules

Module 1: Introduction to Marine Lipids

- Overview of marine lipid sources
- Importance of omega-3 fatty acids in health
- Historical development of marine lipid products
- Nutritional and functional properties of omega-3s
- Market demand and global consumption patterns
- Case study: Evolution of fish oil supplements

Module 2: Extraction Techniques

- Traditional fish oil extraction methods
- Enzymatic extraction processes
- Solvent-based extraction methods
- Algal oil extraction approaches
- Industrial-scale extraction practices
- Case study: Comparative efficiency of fish vs algae oils

Module 3: Refining Processes

- Degumming of marine oils
- Neutralization and bleaching techniques
- Deodorization methods for odor removal
- Filtration and centrifugation processes
- Challenges in refining marine lipids
- Case study: Refining cod liver oil for pharmaceutical use

Module 4: Purification and Concentration

- Fractionation processes
- Molecular distillation
- Supercritical fluid extraction techniques
- Concentration of EPA and DHA
- Impact of purification on bioavailability
- Case study: Supercritical CO2 purification in omega-3 products

Module 5: Encapsulation and Formulation

- Microencapsulation methods
- Nanoemulsion systems
- Softgel capsule production
- Stability improvements in formulations
- Sensory masking techniques
- Case study: Encapsulation of algae-derived omega-3s

Module 6: Quality Assurance and Standards

- International quality certification systems
- Laboratory testing methods
- Shelf-life and stability assessments

- Good Manufacturing Practices (GMP)
- Hazard Analysis Critical Control Points (HACCP)
- Case study: Quality assurance in infant formula with omega-3

Module 7: Regulatory Frameworks

- International omega-3 regulations
- Codex Alimentarius standards
- European Food Safety Authority (EFSA) guidelines
- FDA regulations in the United States
- Labeling and claims management
- Case study: Regulatory challenges in cross-border trade

Module 8: Sustainability in Marine Lipids

- Marine ecosystem preservation
- By-product utilization in fish processing
- Algal cultivation as sustainable sourcing
- Reducing carbon footprint in production
- Certification for sustainable fisheries
- Case study: Marine Stewardship Council certification in omega-3

Module 9: Nutraceutical Applications

- Role of omega-3 in cardiovascular health
- Omega-3 for cognitive and mental wellness
- Immune system benefits of marine lipids
- Use in weight management supplements
- Innovations in functional food development
- Case study: Fortification of dairy products with omega-3

Module 10: Pharmaceutical Applications

- Omega-3 in chronic disease management
- Omega-3 for inflammatory disorders
- Omega-3 role in oncology research
- Clinical trial design and applications
- Pharmaceutical-grade omega-3 requirements
- Case study: Prescription omega-3 for hypertriglyceridemia

Module 11: Functional Foods and Beverages

- Fortification of bakery products with omega-3
- Beverage formulations containing marine lipids
- Omega-3-enriched dairy products
- Flavor masking in fortified foods
- Consumer acceptance and taste improvement
- Case study: Functional yogurt enriched with omega-3

Module 12: Product Development and Innovation

- Market-driven innovation strategies

- Consumer-oriented R&D approaches
- Intellectual property in omega-3 innovation
- Rapid prototyping and testing
- Collaboration with universities and research institutes
- Case study: Innovative omega-3 gummy supplements

Module 13: Marketing and Branding

- Omega-3 product positioning strategies
- Health-driven consumer segmentation
- Effective branding in nutraceutical markets
- Digital marketing for marine lipid products
- Building consumer trust through transparency
- Case study: Branding success of premium omega-3 supplements

Module 14: Cost Optimization in Production

- Reducing waste in processing
- Energy-efficient technologies
- Cost-effective sourcing strategies
- Lean manufacturing in omega-3 production
- Process automation benefits
- Case study: Reducing production costs in a fish oil plant

Module 15: Case Studies and Industry Insights

- Global best practices in omega-3 production
- Lessons from leading marine lipid companies
- Benchmarking innovative practices
- Strategic decision-making in product lines
- Industry collaborations and partnerships
- Case study: Global omega-3 industry success story

Training Methodology

- Instructor-led interactive lectures
- Hands-on demonstrations and practical sessions
- Group discussions and brainstorming exercises
- Case study analysis of real-world omega-3 companies
- Industry expert guest sessions
- Multimedia presentations and digital resources

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com