Personalized Nutrition and Food Formulation 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

Personalized Nutrition and Food Formulation Training Course is designed to equip professionals with the knowledge and practical skills to meet the evolving demands of modern nutrition science. With the rise of precision health, sustainable diets, and functional foods, the course integrates evidence-based research with innovative strategies for customized dietary solutions. Participants will gain expertise in advanced nutritional assessment, bioactive compounds, nutrigenomics, and digital tools for dietary planning, while also mastering food product design, sensory evaluation, and market-driven formulation techniques.

As the global demand for health-driven food innovations continues to expand, this training provides the essential foundation to navigate the complexities of consumer trends, regulatory frameworks, and cutting-edge technologies. The course emphasizes real-world case studies, interactive workshops, and industry best practices, enabling participants to deliver personalized nutrition strategies and develop functional food products that support health optimization, disease prevention, and market success.

Programme Curriculum

Personalized Nutrition and Food Formulation Training Course

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Course Objectives

1. Understand the principles of personalized nutrition and nutrigenomics.
2. Explore the role of microbiome health in dietary personalization.
3. Apply data-driven methods in nutritional assessment.
4. Develop functional food formulations targeting chronic disease prevention.
5. Integrate sustainable food systems into personalized diet design.
6. Analyze food matrices for nutrient optimization.
7. Evaluate regulatory frameworks for personalized foods.
8. Examine consumer behavior and health-driven food choices.
9. Gain proficiency in digital nutrition tools and AI-based diet planning.
10. Utilize bioinformatics and biomarker analysis for food formulation.
11. Conduct sensory and shelf-life evaluation for personalized foods.
12. Implement quality assurance and safety protocols in food formulation.
13. Design product development strategies for targeted nutrition markets.

Organizational Benefits

- Enhanced workforce capacity in personalized nutrition innovation.
- Strengthened competitive advantage in functional food markets.
- Improved product development pipelines for health-focused foods.
- Integration of digital tools for precision diet management.
- Elevated brand credibility with evidence-based practices.
- Adoption of sustainability in nutrition and formulation strategies.
- Increased compliance with evolving food regulations.
- Expanded consumer engagement through targeted dietary solutions.
- Accelerated innovation cycles in food R&D departments.
- Boosted organizational revenue through health-centered food innovations.

Target Audiences

1. Nutritionists and dietitians
2. Food scientists and technologists
3. Health and wellness professionals
4. R&D specialists in the food industry
5. Regulatory and policy experts
6. Entrepreneurs in functional foods
7. Academic researchers and educators
8. Healthcare practitioners

Course Duration: 10 days

Course Modules

Module 1: Foundations of Personalized Nutrition

- Principles of dietary personalization
- Nutrigenomics and nutrigenetics overview
- Impact of epigenetics on nutrition
- Microbiome and metabolic health
- Digital nutrition assessment tools
- Case study: Nutrigenomic profiling in weight management

Module 2: Nutritional Assessment Tools and Data Analytics

- Dietary intake analysis methods
- Biomarker evaluation in nutrition
- AI and machine learning in dietary data
- Predictive analytics in nutrition care
- Interpreting big data for food formulation
- Case study: Using AI to predict nutrient deficiencies

Module 3: Nutrigenomics and Precision Health

- Gene-diet interactions
- Nutrient-related polymorphisms
- Translating genetic data into diet advice
- Genomics in disease prevention strategies
- Commercial nutrigenomics platforms
- Case study: Genetic testing in sports nutrition

Module 4: Microbiome and Dietary Personalization

- Gut microbiota composition
- Role of prebiotics and probiotics
- Microbiome-driven metabolic pathways
- Dietary strategies for microbiome modulation
- Microbiome testing technologies
- Case study: Personalized prebiotic formulation

Module 5: Functional Food Innovation

- Bioactive compounds in functional foods
- Fortification strategies
- Plant-based food innovations
- Functional beverages and supplements
- Trends in functional food markets
- Case study: Designing omega-3 fortified dairy products

Module 6: Sustainable Food Systems and Nutrition

- Sustainable diets framework
- Alternative proteins and lab-grown foods
- Circular economy in food formulation
- Life-cycle analysis of food products
- Environmental nutrition strategies
- Case study: Plant-based protein in school feeding programs

Module 7: Consumer Behavior and Market Trends

- Drivers of personalized nutrition adoption
- Health behavior change models
- Food choice psychology
- Market research in food innovation
- Branding for personalized foods
- Case study: Consumer response to gluten-free products

Module 8: Food Matrices and Nutrient Optimization

- Food composition analysis
- Nutrient bioavailability
- Food synergy concepts
- Impact of processing on nutrients
- Formulation for nutrient stability
- Case study: Enhancing iron absorption in plant-based foods

Module 9: Food Regulation and Policy in Personalized Nutrition

- International regulatory frameworks
- Health claims and labeling rules
- Personalized food safety guidelines
- Ethical issues in genetic-based diets
- Policy trends in personalized nutrition
- Case study: Regulatory approval of personalized supplements

Module 10: Digital Tools in Nutrition Planning

- Mobile apps for personalized diets
- Wearable health technology
- AI-driven meal planning platforms
- Tele-nutrition services
- Blockchain in nutrition tracking
- Case study: Wearable tech for diabetes management

Module 11: Bioinformatics and Biomarker Analysis

- Key nutritional biomarkers
- Omics technologies in food research
- Data mining for personalized nutrition
- Integrative bioinformatics platforms
- Personalized diagnostics in nutrition
- Case study: Biomarker analysis in cardiovascular health

Module 12: Sensory and Shelf-Life Evaluation

- Principles of sensory evaluation
- Sensory testing methodologies
- Shelf-life testing approaches
- Packaging for nutrient stability
- Consumer sensory acceptance tests

- Case study: Shelf-life study of probiotic yogurt

Module 13: Food Quality Assurance and Safety

- HACCP principles in personalized foods
- Allergen management in formulation
- Contaminant detection and monitoring
- Food defense and traceability systems
- ISO standards in food formulation
- Case study: Allergen control in personalized protein bars

Module 14: Product Development for Targeted Markets

- Stages of food product development
- Innovation pipeline management
- Targeting niche nutrition markets
- Collaborations in product innovation
- Cost-effectiveness in formulation
- Case study: Low-sodium snacks for hypertension patients

Module 15: Capstone Project and Applied Case Studies

- Integrative personalized diet design
- Food product formulation project
- Market analysis and business strategy
- Interdisciplinary innovation workshop
- Final group presentations
- Case study: Launching a personalized nutrition startup

Training Methodology

- Interactive lectures with real-world examples
- Case-based learning for applied knowledge
- Hands-on workshops in food formulation
- Group discussions and collaborative projects
- Digital simulations using AI nutrition tools
- Expert guest lectures from industry leaders

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

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