

320225441 Functional Food and Nutraceutical

Module Name	Functional Food and Nutraceutical
Module Level, if applicable	Advanced
Code if Applicable	320225441
Subtitle, if applicable	-
Courses, if applicable	320225441 Functional Food and Nutraceutical
Semester(s) in which the module is taught	6 th
Person responsible for the module	Prof. Dr. Ir. Noor Harini, M.S
Lecturer	Prof. Dr. Ir. Noor Harini, M.S
Language	Indonesian
Relation to curriculum	Elective Course for undergraduate program in the Food Technology Department, Faculty of Agriculture and Animal Science
Type of teaching	Lecture, Project
Workload	<ul style="list-style-type: none"> • Lecture: 2 SKS X 50 minutes X 16 weeks • Project: 2 SKS X 60 minutes X 16 weeks • Independent learning: 3 SKS X 60 minutes X 16 week
Credit points	2 SKS X 1.5 = 3.00 ECTS
Requirements according to the examination regulations	<ol style="list-style-type: none"> 1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	Food Nutrition Evaluation

Module Objectives (Intended learning outcomes)

On successful completion of this course, students should be able to:

- Explained introduction to Functional Foods
 - Definition and classification of functional foods. Historical development and evolution of functional foods. Global market trends and consumer demand for functional foods
- Explain and give examples of bioactive compounds in functional Foods
 - Overview of key bioactive compounds: vitamins, minerals, antioxidants, phytochemicals, probiotics, prebiotics, omega-3 fatty acids, and plant sterols/stanols
 - Mechanisms of action and health benefits of bioactive compounds
 - Sources of bioactive compounds in natural foods and food products
- Explain and give examples of Functional Foods and Human Health
 - Evidence-based health benefits of functional foods on various aspects of human health:
 - Cardiovascular health
 - Gastrointestinal health
 - Immune function
 - Cognitive function
 - Bone health
 - Metabolic health
- Explain and give examples of Functional Food Ingredients and Formulation

- Selection and formulation of functional food ingredients
- Incorporation of bioactive compounds into food products
- Factors influencing ingredient stability, bioavailability, and sensory characteristics

- Explain and give examples of Functional Foods and Disease Prevention

- Role of functional foods in the prevention and management of chronic diseases:
 - Cardiovascular disease
 - Diabetes
 - Obesity
 - Cancer
 - Osteoporosis
 - Gastrointestinal disorders
 - Epidemiological studies, clinical trials, and intervention studies supporting efficacy

- Explain and give examples of Functional Foods and Nutritional Epidemiology

- Principles and methods of nutritional epidemiology
- Population-based studies on diet and health outcomes
- Dietary assessment methods and tools

- Explain and give examples of Emerging Trends and Future Directions

	<ul style="list-style-type: none"> <input type="checkbox"/> Emerging trends and innovations in functional foods <input type="checkbox"/> Future prospects and challenges in the functional food industry <input type="checkbox"/> Opportunities for research and development
Module Content	<p>Functional foods play a vital role in modern nutrition, offering additional health benefits beyond basic nutrition. This course explores the science behind functional foods, their bioactive components, health benefits, and practical applications in promoting human health and well-being.</p>
Study and examination requirements and forms of examination	<p>Cognitive: Midterm exam, Final exam, Quizzes, Assignments Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.</p>
Media employed	<p>The course is delivered through a combination of lectures, seminars, group discussions, and case studies. The class activities use whiteboard and PowerPoint slide</p>

<p>Recommended Literature</p>	<p>For Class</p> <p>A. Compulsory</p> <ol style="list-style-type: none"> 1. Goldberg, I., 2012. Functional foods: designer foods, pharmafoods, nutraceuticals. Springer Science & Business Media. 2. Wildman, R.E., Wildman, R. and Wallace, T.C., 2016. Handbook of nutraceuticals and functional foods. CRC press. <p>B. Option</p> <ol style="list-style-type: none"> 1. Keservani, R.K., Kesharwani, R.K., Vyas, N., Jain, S., Raghuvanshi, R. and Sharma, A.K., 2010. Nutraceutical and functional food as future food: A review. Der Pharmacia Lettre, 2(1), pp.106-116. 2. Helkar, P.B., Sahoo, A.K. and Patil, N.J., 2016. Review: Food industry by-products used as a functional food ingredients. Int. J. Waste Resour, 6(3), pp.1-6. 3. Jones, P.J. and Jew, S., 2007. Functional food development: concept to reality. Trends in food science & technology, 18(7), pp.387-390.
<p>Date of Last Amendment</p>	<p>24th Augustus 2022</p>