

Module Name	Food Additive and Toxicology
Module Level, if applicable	Advanced
Code if Applicable	420220675
Subtitle, if applicable	-
Courses, if applicable	420220675 Food Additive and Toxicology
Semester(s) in which the module is taught	6 th
Person responsible for the module	Prof.Dr. Ir. Noor Harini, MS., Prof.Dr.Ir. Elfi Anis Saati, MP. Hanif Alamuddin M., SGz., MSi.
Lecturer	Prof. Dr. Ir. Noor Harini, MS., Prof. Dr. Ir. Elfi Anis Saati, MP. Hanif Alamuddin M., SGz., MSi.
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in Departement of Food Technology, Faculty of Agriculture and Animal Science
Type of teaching	Lecture, Project
Workload	<ul style="list-style-type: none"> ● Lecture: 3 sks X 50 minutes X 16 weeks ● Project: 3 sks X 60 minutes X 16 weeks ● Independent learning: 3 sks X 60 minutes X 16 weeks
Credit points	3 SKS X 1.5 = 4.5 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 Chemistry and Biochemistry
Module Objectives (Intended learning outcomes)	<p>On successful completion of this course, student should be able to :</p> <ul style="list-style-type: none"> ● Know food additives and differentiate between intentional and incidental; hazard and toxic; as well as natural and synthetic in food additives. ● Know, explore and apply macro food additives such as preservatives, sweeteners, flavoring agents, coloring agents, antioxidants, emulsifiers both natural and synthetic in food ingredients. ● Identify, explore and apply micro food additives such as thickeners, thickeners, coatings, developer and anti-bloating agents, bleaching agents/bleachers, flour curing agents, humectants, coagulation agents, anti-caking agents, hardeners, acidulants, anti-crystallizers, foaming, anti-foaming, anti-browning, enzymes, sequestrants in foodstuffs. ● Know and analyze nutrification which consists of enrichment, fortification,

	supplementation, standardization and Restoration
Module Content	This course is a chemical technology-based course in food to prepare students to develop applications for food additives in processed products which includes knowledge of safe, healthy and halal Food Additives, as well as grouping macro and micro Food Additives sourced from natural and organic sources. synthetics, as well as knowledge about nutrification which includes enrichment, fortification, supplementation, standardization and restoration.
Study and examination requirements and forms of examination	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.
Media employed	Classical teaching tools with white board and power point presentation
Recommended Literature	For Class A. Compulsory 1. B, A.L., P.M. Davidson dan S. Salminen. 1993. <i>Food Additives</i> . Marcel Dekker, Inc. New York. Bassel. Hongkong. 2. Cahyadi, Wisnu. 2005. <i>Bahan Tambahan Pangan</i> . Bumi Aksara. Jakarta. 3. Concon, J.M. 1993. <i>Food Toxicology</i> . Part A & B. Marcel Dekker, Inc. New York. Bassel. Hongkong. 4. Davidson, P.M. dan A.L. Branen. 1993. <i>Antimicrobials in Foods</i> . 2-nd Ed. Marcel Dekker, Inc. New York. Bassel. 5. Departemen Kesehatan. 2012. <i>Jenis Bahan Tambahan Pangan yang diizinkan</i> . Peraturan Menteri Kesehatan No. 033 tahun 2012 tentang Bahan Tambahan Pangan. 6. Harini, N. 2015. <i>Food Aditif dan Toksikologi</i> . Buku Ajar. Jurusan Ilmu dan Teknologi Pangan, Fakultas Pertanian-Peternakan, Universitas Muhammadiyah Malang, Malang. 7. Janssen, M.M.T. 1997. "Food Additive" dalam John de Vries (ed.) <i>Food Safety and Toxicity</i> . CRC Press. New York. 8. Maga, J.A. dan A.T. Tu. 1995. <i>Food Additives Toxicology</i> . Marcel Dekker, Inc. 270 Madison Avenue, New York.

	<p>9. Tranggono, Sutardi, Haryadi, Suparmo, A. Murdiati, S. Sudarmadji, K. Rahayu, S. Naruki, M. Astuti. 1990. Bahan Tambahan Makana (<i>Food Additives</i>). PAU Pangan dan Gizi, UGM, Yogyakarta</p> <p>B. Option</p> <p>1. Hardjono S. 1996. Sintesis Bahan Alam. Gajah Mada University Press. Yogyakarta.</p> <p>2. Winarno, F.G. 2009. Kimia Pangan dan Gizi. Gramedia Pustaka Utama, Jakarta.</p> <p>3. Susanto, T. dan B. Saneto. 1994. Teknologi Pengolahan Hasil Pertanian. Bina Ilmu. Jakarta</p>
Date of Last Amendment	22 nd Agustus 2022