

<b>THOMAS ADEWUMI UNIVERSITY OKO COURSE OUTLINE</b>		
Faculty	Computing and applied science	
Department	Biological Sciences	
Course title	<b>FOOD MICROBIOLOGY</b>	
Year of study	3	
Course code	MCB 304	
Credit hours	3	
Contact hours	45	
Mode of delivery	CLASSROOM LECTURES	
Mode of assessment		WEIGHT%
Continuous assessment		30%
Final examination		70%
Total		100%
Course lecturers and Instructors	Dr. Adekemi T. Dahunsi-LECTURER	
Course description	<p>"Food Microbiology" is a comprehensive course that explores the dynamic relationship between microorganisms and food products. Through a blend of theoretical concepts, practical demonstrations, and case studies, students will delve into the intrinsic and extrinsic factors that impact the growth and survival of microbes in foods. The course covers topics ranging from the natural flora of foods to sources of contamination, microbial spoilage, methods of food preservation, and the causes, symptoms, and prevention of foodborne diseases and intoxications.</p>	
Course objectives	<p>This course will facilitate the understanding of:</p> <ol style="list-style-type: none"> <li>1. Understand the factors influencing microbial growth and survival in different food products.</li> <li>2. Identify the natural flora of foods and potential sources of contamination.</li> <li>3. Recognize the signs and causes of microbial spoilage in various food items.</li> <li>4. Describe the principles and methods used for preserving foods.</li> <li>5. Analyze the causative agents, symptoms, and preventive measures of foodborne diseases.</li> </ol>	

	6. Explore the concept of food intoxications and their implications.
Learning outcomes	By the end of the course, students will be able to: 1. Understand the factors influencing microbial growth and survival in different food products. 2. Identify the natural flora of foods and potential sources of contamination. 3. Recognize the signs and causes of microbial spoilage in various food items. 4. Describe the principles and methods used for preserving foods. 5. Analyze the causative agents, symptoms, and preventive measures of foodborne diseases. 6. Explore the concept of food intoxications and their implications.
Teaching and learning	The class will be taught for three hours a week.
Detailed course content	Introduction to Food Microbiology: Importance and Scope. Intrinsic and Extrinsic Factors Affecting Microbial Growth in Foods. Natural Flora of Foods: Beneficial and Harmful Microorganisms. Sources of Food Contamination: Microbial and Environmental Factors. Microbial Spoilage of Foods: Types and Characteristics. Principles of Food Preservation: Physical, Chemical, and Biological Methods. Foodborne Diseases: Causative Agents, Foods Involved, Symptoms, and Prevention. Food Intoxications: Toxins, Symptoms, and Preventive Measures
Course content sequencing	
Weeks	
Week 1	Introduction to Food Microbiology: Importance and Scope.
Week 2 & 3	Intrinsic and Extrinsic Factors Affecting Microbial Growth in Foods.
Week 4 & 5	Natural Flora of Foods: Beneficial and Harmful Microorganisms.
Week 5 & 6	Sources of Food Contamination: Microbial and Environmental Factors.
Week 7 & 8	Microbial Spoilage of Foods: Types and Characteristics.

Week 9	Principles of Food Preservation: Physical, Chemical, and Biological Methods
Week 10	Foodborne Diseases: Causative Agents, Foods Involved, Symptoms, and Prevention.
Week 11	. Food Intoxications: Toxins, Symptoms, and Preventive Measures
Week 12	Revision
<b>Recommended reading material</b>	
<ol style="list-style-type: none"> <li>1. Joanne Willey and Kathleen Sandman and Dorothy Wood (2020). Prescott's Microbiology. 11<sup>th</sup> Edition.</li> <li>2. Michael P. Doyle and Robert L. Buchanan. (2013). Food Microbiology, 4<sup>th</sup> edition. ASM Press Washington, DC 20036. doi:10.1128/9781555818463</li> <li>3. Martin R. Adams and Maurice O. Moss. (2008). Food Microbiology Third Edition. The Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK.</li> <li>4. Bibek Ray and Arun Bhunia (2014). Fundamentals of Food Microbiology. CRC Press Taylor &amp; Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742</li> </ol>	

Course code: MCB 304

Course title: FOOD MICROBIOLOGY

Preamble: "Food Microbiology" is a comprehensive course that explores the dynamic relationship between microorganisms and food products. Through a blend of theoretical concepts, practical demonstrations, and case studies, students will delve into the intrinsic and extrinsic factors that impact the growth and survival of microbes in foods. The course covers topics ranging from the natural flora of foods to sources of contamination, microbial spoilage, methods of food preservation, and the causes, symptoms, and prevention of foodborne diseases and intoxications.

#### **A. Specific course objectives/learning outcomes.**

The course will enable the understanding of the following:

- 1 Understand the factors influencing microbial growth and survival in different food products.
2. Identify the natural flora of foods and potential sources of contamination.
3. Recognize the signs and causes of microbial spoilage in various food items.
4. Describe the principles and methods used for preserving foods.
5. Analyze the causative agents, symptoms, and preventive measures of foodborne diseases.

6. Explore the concept of food intoxications and their implications.

**B. Learning activities/Course delivery methods**

**C. Lectures: detailed content of course are taught in class**

**Course content:** Introduction to Food Microbiology: Importance and Scope. Intrinsic and Extrinsic Factors Affecting Microbial Growth in Foods. Natural Flora of Foods: Beneficial and Harmful Microorganisms. Sources of Food Contamination: Microbial and Environmental Factors. Microbial Spoilage of Foods: Types and Characteristics. Principles of Food Preservation: Physical, Chemical, and Biological Methods. Foodborne Diseases: Causative Agents, Foods Involved, Symptoms, and Prevention. Food Intoxications: Toxins, Symptoms, and Preventive Measures