THOMAS ADEWUMI UNIVERSITY OKO COURSE OUTLINE		
Faculty	COMPUTING AND APPLIED SCIENCES	
Department	BIOLOGICAL SCIENCES	
Course title	**BIODETERIORATION**	
Year of study	4	
Course code	MCB 407	
Credit hours	2	
Contact hours	30	
Mode of delivery	CLASSROOM LECTURES	
Mode of assessment		WEIGHT%
Continuous assessment		30%
Final examination		70%
Total		100%
Course lecturer and Instructor	MR. OLADAPO BAMIDELE- LECTURER	
Course description	This course explores the impact of microorganisms on materials such as food, textile, metal etc. and also seek to understand why such materials are susceptible to microbial attack as well as how it can be controlled	
Course objectives	This course will make it possible to understand 1. The principles and significance of biodeterioration 2. Biodeterioration's impact on various industries, such as construction, food, and agriculture etc. 3. The major microbial groups implicated in biodeterioration of materials. 4. Some enzymatic, physical, and chemical processes by which biological agents degrade materials. 5. The factors responsible for the susceptibility of different materials (wood, metals, textiles, etc.) to biodeterioration. 6. Practical control strategies to prevent or slow down biodeterioration. 7. Impact of processing and new technologies on prevention of biodeterioration.	
Learning outcomes	By the end of the course, students will be able to: 1. Explain the principles and significance of biodeterioration 2. Understand and appreciate the biodeterioration's impact on various industries, such as construction, food, and agriculture etc. 3. Know the major microbial groups implicated in biodeterioration of materials.	

	4. Explain some enzymatic, physical, and chemical processes by which biological agents degrade materials. 5. State the factors responsible for the susceptibility of different materials (wood, metals, textiles, etc.) to biodeterioration. 6. Describe practical control strategies to prevent or slow down biodeterioration. 7. Explain the impact of processing and new technologies on prevention of biodeterioration.
Teaching and learning	The class will meet for two hours a week. It will be teaching only sessions.
Detailed course content	Principles of microbial deterioration of materials. Materials subject to microbial deterioration: Foods, Jet fuels, paper, paints, textiles and leather, metals etc. Factors favouring deterioration of materials. Major microbial groups involved in deterioration. Impact of processing and new technologies on biodeterioration. Biodeterioration control.
Course content sequencing	
Weeks	
Week 1	Principles of microbial deterioration of materials.
Week 2	Materials subject to microbial deterioration: Foods, Jet fuels, paper, paints, textiles and leather, metals etc.
Week 3	Continuous Assessment 1
Week 4 – 5	Materials subject to microbial deterioration: Foods, Jet fuels, paper, paints, textiles and leather, metals etc.
Week 6	Factors favouring deterioration of materials.
Week 7	Continuous Assessment 2
Week 8 – 9	Major microbial groups involved in deterioration.
Week 10	Impact of processing and new technologies on biodeterioration.
Week 11	Biodeterioration control.
Week 12	Revision
Recommended reading material	
1. Joanne Willey and Kathleen Sandman and Dorothy Wood (2020). Prescott's Microbiology. McGraw-Hill Higher Education **2.** Michael T. Madigan, Kelly S. Bender, Daniel H. Buckley W. Matthew Sattley and David A. Stahl (2019). Brock Biology of Microorganisms. Pearson Educational Limited	

3. Dennis Allsopp, Kenneth J. Seal, Christine C. Gaylarde (2004). Introduction to Biodeterioration. Cambridge University Press.

Course code: MCB 407

Course title: BIODETERIORATION

Preamble: Biodeterioration is the process by which living organisms, such as microorganisms, fungi, algae, and insects, cause damage to various materials, structures, and artifacts. This interdisciplinary course explores the principles, mechanisms, and impacts of biodeterioration on both natural and human-made materials. Students will gain a comprehensive understanding of the interactions between biological agents and materials, as well as strategies to mitigate and prevent biodeterioration

Specific course objectives/learning outcomes.

The course will enable the understanding of the following:

1. The principles and significance of biodeterioration
2. Biodeterioration's impact on various industries, such as construction, food, and agriculture etc.
3. The major microbial groups implicated in biodeterioration of materials.
4. Some enzymatic, physical, and chemical processes by which biological agents degrade materials.
5. The factors responsible for the susceptibility of different materials (wood, metals, textiles, etc.) to biodeterioration.
6. Practical control strategies to prevent or slow down biodeterioration.
7. Impact of processing and new technologies on prevention of biodeterioration.

Learning activities/Course delivery methods

1. Lectures: detailed content of course are taught in class
2. Interactive sessions

Course content: Principles of microbial deterioration of materials. Materials subject to microbial deterioration: Foods, Jet fuels, paper, paints, textiles and leather, metals etc. Factors favouring deterioration of materials. Major microbial groups involved in deterioration. Impact of processing and new technologies on biodeterioration. Biodeterioration control.