

<b>THOMAS ADEWUMI UNIVERSITY OKO</b>		
<b>COURSE OUTLINE</b>		
Faculty	Computing and applied science	
Department	Biological Sciences	
Course title	<b>IMMUNOLOGY AND IMMUNOCHEMISTRY</b>	
Year of study	4	
Course code	MCB 403	
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	MRS F.J. OLAITAN-LECTURER	
Course description	<p>"Immunology and Immunchemistry" is a comprehensive course that delves into the intricacies of the immune system and its essential role in safeguarding the body against infections and diseases. Through a combination of historical context, fundamental concepts, and cutting-edge research, students will explore the fascinating world of immunity. The course covers topics ranging from immune cells and their functions to the generation of immune responses, immunological disorders, tumor immunity, and diagnostic techniques in immunology.</p>	
Course objectives	<p>This course will facilitate the understanding of:</p> <ol style="list-style-type: none"> <li>1. Understand the historical evolution and significance of immunology.</li> <li>2. Grasp the concept of innate and adaptive immunity and their interplay.</li> <li>3. Recognize the contributions of key scientists to the field of immunology.</li> <li>4. Identify immune cells, organs, antigens, and antibodies and their roles.</li> <li>5. Explain the importance of the Major Histocompatibility Complex (MHC) and the Complement System.</li> </ol>	

	<p>6. Describe the mechanisms of immune response generation and immunological memory.</p> <p>7. Analyze the complexities of immunological disorders and tumor immunity.</p> <p>8. Gain practical knowledge of immunological techniques and their applications in disease diagnosis.</p>
Learning outcomes	<p>At the end of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Explain the history and development in Immunology</li> <li>2. Describe the concepts of Innate and Adaptive Immunity</li> <li>3. Discuss the contributions of pioneers in Immunology</li> <li>4. Describe the Functions and Significance of Immune Cells and Organs</li> <li>5. Explain the immunoglobulins and innate defense systems</li> <li>6. Describe the Major Histocompatibility Complex (MHC) and Immune Recognition</li> <li>7. Explain the Complement System present in the body</li> <li>8. Highlight how Immune Responses and Immunological Memory are generated</li> <li>9. Describe at least three (3) Immunological Disorders: Autoimmune Diseases, Hypersensitivity, Immunodeficiency</li> <li>10. Describe Tumor Immunity</li> <li>11. Describe Immunological Techniques</li> </ol>
Teaching and learning	The class will be taught for three hours a week.
Detailed course content	<p>Introduction to Immunology and Historical Background. Innate and Adaptive Immunity: Concepts and Interactions. Contributions of Pioneers in Immunology. Immune Cells and Organs: Functions and Significance. Antigens and Antibodies: Structure, Function, and Diversity. Major Histocompatibility Complex (MHC) and Immune Recognition. Complement System: Activation and Immune Response Enhancement. Generation of Immune Responses and Immunological Memory</p> <p>Immunological Disorders: Autoimmune Diseases, Hypersensitivity, Immunodeficiency</p>

	Tumor Immunity: Immune Surveillance and Escape Mechanisms. Immunological Techniques: Serological Methods, Flow Cytometry, Diagnostic Application
Course content sequencing	
Weeks	
Week 1	Introduction to Immunology and Historical Background
Week 2	Innate and Adaptive Immunity: Concepts and Interactions
Week 3	Contributions of Pioneers in Immunology
Week 4	Immune Cells and Organs: Functions and Significance
Week 5	Antigens and Antibodies: Structure, Function, and Diversity
Week 6	Major Histocompatibility Complex (MHC) and Immune Recognition
Week 7	Complement System: Activation and Immune Response Enhancement
Week 8	Generation of Immune Responses and Immunological Memory
Week 9	Immunological Disorders: Autoimmune Diseases, Hypersensitivity, Immunodeficiency
Week 10	Tumor Immunity: Immune Surveillance and Escape Mechanisms
Week 11	Immunological Techniques: Serological Methods, Flow Cytometry, Diagnostic Application
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. David Greenwood, Mike Barer, Richard Slack (2012) Medical Microbiology. A Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis and Control Eighteenth Edition , Churchill livingstone, Elsevier.</li> </ol>	

Course code: MCB 403

Course title: Immunology and Immunochemistry

Preamble: "Immunology and Immunochemistry" is a comprehensive course that delves into the intricacies of the immune system and its essential role in safeguarding the body against

infections and diseases. Through a combination of historical context, fundamental concepts, and cutting-edge research, students will explore the fascinating world of immunity. The course covers topics ranging from immune cells and their functions to the generation of immune responses, immunological disorders, tumor immunity, and diagnostic techniques in immunology.

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

The course will enable the understanding of the following:

1. Understand the historical evolution and significance of immunology.
2. Grasp the concept of innate and adaptive immunity and their interplay.
3. Recognize the contributions of key scientists to the field of immunology.
4. Identify immune cells, organs, antigens, and antibodies and their roles.
5. Explain the importance of the Major Histocompatibility Complex (MHC) and the Complement System.
6. Describe the mechanisms of immune response generation and immunological memory.
7. Analyze the complexities of immunological disorders and tumor immunity.
8. Gain practical knowledge of immunological techniques and their applications in disease diagnosis.

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

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

**Course content:** Introduction to Immunology and Historical Background. Innate and Adaptive Immunity: Concepts and Interactions. Contributions of Pioneers in Immunology. Immune Cells and Organs: Functions and Significance. Antigens and Antibodies: Structure, Function, and Diversity. Major Histocompatibility Complex (MHC) and Immune Recognition. Complement System: Activation and Immune Response Enhancement. Generation of Immune Responses and Immunological Memory. Immunological Disorders: Autoimmune Diseases, Hypersensitivity, Immunodeficiency. Tumor Immunity: Immune Surveillance and Escape Mechanisms. Immunological Techniques: Serological Methods, Flow Cytometry, Diagnostic Application