



## Advanced Cytology

Zoo 642

# Course specifications (Postgraduate Degree)

<b>Course Title:</b>	Advanced Cytology
<b>Course Code:</b>	Zoo 642
<b>Program:</b>	PhD
<b>Department:</b>	Zoology
<b>College:</b>	Science
<b>Institution:</b>	Zoology

## A. Course Identification

## B. Course Objectives and Learning Outcomes

### 1. Course Description

The main focus of “Advanced cytology” is the study of the structure and function of the cell. This course will cover the topics related to study of eukaryotic cell; such as membrane structure and composition, transport, and trafficking; the cytoskeleton and cell movement; the structure and function of eukaryotic organelles and relationship between them. Important cellular processes such as cell cycle regulation, signal transduction, apoptosis (programmed cell death), and cancer cell biology will also be covered.

Defects in various cellular processes to human diseases will be discussed to help gain a better understanding for what happens when cells don’t work as they should.

### 2. Course Main Objective

- To provide students with profound knowledge of cell membranes and their principal functions.
- To give students essential knowledge on cell organelles and their interrelationships.
- To provide students with basic knowledge on renal tissue structure and function.
- To supply students with basic information about cytoskeleton and its function in cell support and transport.
- To give students essential knowledge about cell differentiation and factors affecting cell growth.
- To provide students with essential information about the interactions between nucleus and cytoplasm.
- To give students basic information about different types and properties of cell cancer.

### 3. Course Learning Outcomes

Course Learning Outcomes (CLOs)		Aligned PLOs*
<b>1</b>	<b>Knowledge</b>	
1.1	Introduction cell membranes and their functions	K1
1.2	Cell organelles and their interrelationships	K1
1.3	Cytoskeleton, functions in cell support and transport	K1
1.4	Cell differentiation	K2
1.5	Cell growth and factors affecting it	K2
1.6	Nucleo-cytoplasmic interactions	K1
1.7	Types of cancer cells	K4
1.8	Properties of cancer cells	K4
<b>2</b>	<b>Skills</b>	
2.1	- Explaining and discussing the main ideas regarding cell organelles, their functions and relationships	S1
2.2	- Discussing types of cell cancer, and their properties	S2
2.3		
2...		
<b>3</b>	<b>Competence</b>	
3.1	Communicate and share ideas about different course topics	C1
3.2	Search for information on websites concerned with different topics of the course	C4
3.3		

### C. Course Content

No	List of Topics	Contact Hours
1	Introduction cell membranes and their functions	2
2	Cell organelles and their interrelationships	4
3	Cytoskeleton, functions in cell support and transport	2
4	Cell differentiation	4
5	Cell growth and factors affecting it	4
6	Nucleo-cytoplasmic interactions	4
7	Types of cancer cells	4
8	Properties of cancer cells	4
<b>Total</b>		<b>28</b>

### D. Teaching and Assessment

#### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Introduction cell membranes and their functions	<ul style="list-style-type: none"> <li>• Using power point presentation</li> <li>• Illustrations.</li> <li>• Informative videos and internet resources</li> <li>• Direct discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm and final term exams.</li> <li>• Evaluation of reports and presentations</li> </ul>
1.2	Cell organelles and their interrelationships		
1.3	Cytoskeleton, functions in cell support and transport		
1.4	Cell differentiation		
1.5	Cell growth and factors affecting it		
1.6	Nucleo-cytoplasmic interactions		
1.7	Types of cancer cells		
1.8	Properties of cancer cells		
<b>2.0</b>	<b>Skills</b>		
2.1	- Explaining and discussing the main ideas regarding cell organelles, their functions and relationships	Lecture activities	
2.2	- Discussing types of cell cancer, and their properties		
<b>3.0</b>	<b>Competence</b>		
3.1	Communicate and share ideas about different course topics	Using power point presentation.	Evaluation of student presentations
3.2	Search for information on websites concerned with different topics of the course	Using power point presentation.	Evaluation of student presentations
3.3			