



## Course Specifications

|                      |                            |
|----------------------|----------------------------|
| <b>Course Title:</b> | <b>Cytology</b>            |
| <b>Course Code:</b>  | <b>2012102-3</b>           |
| <b>Program:</b>      | <b>Bachelor in Botany</b>  |
| <b>Department:</b>   | <b>Biology Department</b>  |
| <b>College:</b>      | <b>College of Sciences</b> |
| <b>Institution:</b>  | <b>Taif University</b>     |

## Table of Contents

|  |          |
|--|----------|
| <b>A. Course Identification</b> .....  | <b>3</b> |
| 6. Mode of Instruction (mark all that apply) .....   | 3        |
| <b>B. Course Objectives and Learning Outcomes</b> .....  | <b>3</b> |
| 1. Course Description.....   | 3        |
| 2. Course Main Objective.....  | 3        |
| 3. Course Learning Outcomes .....  | 3        |
| <b>C. Course Content</b> .....   | <b>4</b> |
| <b>D. Teaching and Assessment</b> .....  | <b>4</b> |
| 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment<br>Methods..... | 4        |
| 2. Assessment Tasks for Students .....   | 5        |
| <b>E. Student Academic Counseling and Support</b> .....  | <b>5</b> |
| <b>F. Learning Resources and Facilities</b> .....  | <b>5</b> |
| 1. Learning Resources .....  | 5        |
| 2. Facilities Required.....  | 5        |
| <b>G. Course Quality Evaluation</b> .....  | <b>6</b> |
| <b>H. Specification Approval Data</b> .....  | <b>6</b> |

## A. Course Identification

|  |
|--|
| <b>1. Credit hours:</b> 3 hr   |
| <b>2. Course type</b>  |
| a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> |
| b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>  |
| <b>3. Level/year at which this course is offered:</b> 4 <sup>th</sup> level – 2 <sup>nd</sup> year   |
| <b>4. Pre-requisites for this course (if any):</b> General Biology 201104-4  |
| <b>5. Co-requisites for this course (if any):</b> None   |

### 6. Mode of Instruction (mark all that apply)

| No | Mode of Instruction   | Contact Hours | Percentage |
|----|-----------------------|---------------|------------|
| 1  | Traditional classroom | 6 hr/Week     | 100%       |
| 2  | Blended               | -             | -          |
| 3  | E-learning            | -             | -          |
| 4  | Distance learning     | -             | -          |
| 5  | Other                 | -             | -          |

### 7. Contact Hours (based on academic semester)

| No | Activity          | Contact Hours |
|----|-------------------|---------------|
| 1  | Lecture           | 30            |
| 2  | Laboratory/Studio | 20            |
| 3  | Tutorial          | --            |
| 4  | Others (specify)  | --            |
|    | <b>Total</b>      | 50            |

## B. Course Objectives and Learning Outcomes

|   |
|---|
| <b>1. Course Description:</b><br>This course deals with studying the basic concepts of Cytology, cellular organization and cell division, cyto-genetics and cytological techniques.   |
| <b>2. Course Main Objective:</b><br>To identify the cell as a main structure of the body, define the different types of the cells, explain the different methods of identification of cells as well as to distinguish between animal and plant cells. |

### 3. Course Learning Outcomes

|     | CLOs  | Aligned PLOs |
|-----|---|--------------|
| 1   | <b>Knowledge and Understanding:</b>   |              |
| 1.1 | Recall principles, scientific terminology and concepts across cytology and other related biological sciences. | K1           |
| 1.2 | Recognize the tools used in the study of cells and the ultrastructure of cells.                               | K3           |

| CLOs     |   | Aligned PLOs |
|----------|---|--------------|
| <b>2</b> | <b>Skills:</b>  |              |
| 2.1      | Illustrate functions and differences among major components of prokaryotic and eukaryotic cells.          | S4           |
| <b>3</b> | <b>Values:</b>  |              |
| 3.1      | Demonstrate commitment to professional and leadership values.   | V1           |
| 3.2      | Demonstrate professional responsibilities in using the proper presentation forms and scientific language. | V3           |

### C. Course Content

| No           | List of Topics   | Contact Hours    |
|--------------|--|------------------|
| 1            | Introduction, History and Background of Cell Biology, Cell Theory<br>Tools and Techniques in Cell Biology (Microscopy, Cell Fractionation, Centrif.) | 3L+ 2P           |
| 2            | Molecules of the Cell (Carbohydrates, Lipids, Proteins, Nucleic Acids)   | 3L+ 2P           |
| 3            | Prokaryotic and Eukaryotic cells   | 3L+ 2P           |
| 4            | Structure and function of Cell Organelles  | 3L+ 2P           |
| 5            | Structure of Bacterial Cell  | 3L+ 2P           |
| 6            | Structure of Plant Cell  | 3L+ 2P           |
| 7            | Structure of Animal Cell   | 3L+ 2P           |
| 8            | Chromosomes (Prokaryotic and Eukaryotic, Special types of chromosomes)<br>Cell Cycle   | 3L+ 2P           |
| 9            | Cell Division: Binary Fission in Bacteria, Mitosis   | 3L+ 2P           |
| 10           | Cell Division: Meiosis   | 3L+ 2P           |
| <b>Total</b> |  | <b>30L + 20P</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 and Understanding:</b>   |  |  |
| 1.1        | Recall principles, scientific terminology and concepts across cytology and other related biological sciences. | Lectures<br>Interactive learning           | Paper-based exams                      |
| 1.2        | Recognize the tools used in the study of cells and the ultrastructure of cells.                               | Lectures<br>Small group activities         | Paper-based exams<br>Practical reports |
| <b>2.0</b> | <b>Skills:</b>  |  |  |
| 2.1        | Illustrate functions and differences among major components of prokaryotic and eukaryotic cells.              | Lectures<br>Interactive learning           | Paper-based exams                      |
| <b>3.0</b> | <b>Values:</b>  |  |  |
| 3.1        | Demonstrate commitment to professional and leadership values.   | Small group activities<br>Open Discussions | Practical reports<br>Practical exam    |
| 3.2        | Demonstrate professional  | Small group activities                     | Assignments                            |

| Code | Course Learning Outcomes   | Teaching Strategies  | Assessment Methods |
|------|--|----------------------|--------------------|
|      | responsibilities in using the proper presentation forms and scientific language. | Interactive learning |                    |

## 2. Assessment Tasks for Students

| #            | Assessment task*     | Week Due         | Percentage of Total Assessment Score |
|--------------|----------------------|------------------|--------------------------------------|
| 1            | Midterm Exam         | 5 <sup>th</sup>  | 20%                                  |
| 2            | Semester Activities  | Periodic         | 10%                                  |
| 3            | Practical Reports    | Weekly           | 20%                                  |
| 4            | Final Practical Exam | 11 <sup>th</sup> | 10%                                  |
| 5            | Final Exam           | 12 <sup>th</sup> | 40%                                  |
| <b>Total</b> |                      |                  | <b>100%</b>                          |

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:**

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.

Teaching staff is also available using Blackboard web site and Taif University “Edugate” System.

## F. Learning Resources and Facilities

### 1. Learning Resources

|                                       |   |
|---------------------------------------|---|
| <b>Required Textbooks</b>             | - Thomas DP and William CE (2002). Cell Biology. WB Saunders Company, 1 <sup>st</sup> Edition. ISBN-10- 0721639976, ISBN-13-9780721639970).<br>- علم الخلية (٢٠١٥) تأليف دكتور مكرم ضياء شكاره، الطبعة السابعة، دار المسيرة للنشر والتوزيع والطباعة، المملكة الأردنية الهاشمية. |
| <b>Essential References Materials</b> | بيولوجيا الخلية: التركيب والوظيفة (١٩٩٥) تأليف الدكتور/ علي بن أحمد الرباعي و أ. فريد أبوزينة . الطبعة الأولى، مطبوعات جامعة الملك عبدالعزيز، المملكة العربية السعودية.   |
| <b>Electronic Materials</b>           | Blackboard website<br>Website of Saudi digital Library  |
| <b>Other Learning Materials</b>       | Computer-based programs and professional software   |

### 2. Facilities Required

| Item   | Resources   |
|--|---|
| <b>Accommodation</b><br>(Classrooms, laboratories, demonstration rooms/labs, etc.) | - Classrooms for 40 students\lecture.<br>- Laboratory for 20 students\ lab activity |

| Item   | Resources                                 |
|--|---|
| <b>Technology Resources</b><br>(AV, data show, Smart Board, software, etc.)  | - Data show.                              |
| <b>Other Resources</b><br>(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | - Slide projector.<br>- Permanent slides. |

### G. Course Quality Evaluation

| Evaluation Areas/Issues                          | Evaluators                | Evaluation Methods |
|--|---------------------------|--------------------|
| Effectiveness of teaching and assessment         | Students                  | Indirect           |
| Quality of learning resources                    | Peer Reviewer<br>Students | Direct<br>Indirect |
| Extent of achieving the course learning outcomes | Peer Reviewer<br>Students | Direct<br>Indirect |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

### H. Specification Approval Data

|                            |   |
|----------------------------|---|
| <b>Council / Committee</b> | <b>Biology Department</b>                             |
| <b>Reference No.</b>       | <b>Committee number 14 - Academic Year 1442-1443H</b> |
| <b>Date</b>                | <b>22\5\2022G – 21\10\1443H</b>                       |

كلية العلوم  
قسم الأحياء  
College of Science  
Department of Biology



عمادة كلية العلوم  
Deanship of Science College  
TU  
جامعة الطائف  
TAIF UNIVERSITY