



|      |  |         |   |
|------|--|---------|---|
| Sub. | Course Syllabus (البرنامج الدراسي) منهج المادة | الموضوع |  <b>كلية المعرفة</b><br>ALMAAREFA COLLEGE |
| Year | 2015/2016                                      | العام   |   |


|            |  |
|------------|--|
| College    | Al-Maarefa College for Sciences and Technologies |
| Department | General Sciences                                 |

|              |                     |
|--------------|---------------------|
| Course Code  | BIOL 101            |
| Course Name  | General Biology     |
| Credit Hours | 4 (3+1)             |
| Instructor   | Mona Ousman         |
| Office Hours | 6 HOURS/WEEK        |
| Email        | mousman@mcst.edu.sa |

|   |  |
|---|--|
| Course Description                            | This course covers the fundamental principles and concepts of biology with emphasis on structure and function at the molecular and cellular levels. Topics include: cell structure and function, cellular respiration, metabolism, genetics, molecular biology and an introductory to the body system. Much of laboratory is devoted to a detailed study of the cell divisions, histology, anatomy and physiology of body systems e.g. respiratory, cardiovascular, digestive, urinary and genital system.   |
| Prerequisite(s)                               | None   |
| Textbook(s) & Supplementary Materials         | <ul style="list-style-type: none"> <li>* Campbell N.A., Reece J.B. and Mitchell L.G. Biology. Fifth Edition. Benjamin Cummings Company, Inc. ISBN 0-8053-6573-7. Parsons J., Oja D., Carey J., Carey P.</li> <li>* Karp G. Cell and Molecular Biology 2nd Edition, 1999. John Wiley and Sons, Inc.</li> <li>* Brun, G., McKane, L. and Karp, G. Biology. Latest Edition. John Wiley and Sons, Inc</li> <li>* Michael Johnson. Human Biology: Concepts and Current Issues. 2nd Edition. Nov. 2002.</li> </ul>   |
| Student Outcomes (SO) Addressed by the Course | <ol style="list-style-type: none"> <li>1. The ability to understand and use the most important biological terms.</li> <li>2. The ability to describe the construction and list the functions of cell molecules which include carbohydrates, lipids, proteins and nucleic acids.</li> <li>3. The ability to recognize sub-cellular organelles and describe their function.</li> <li>4. The ability to distinguish between anabolic and catabolic reactions.</li> <li>5. The ability to discuss the roles of enzymes.</li> <li>6. The ability to describe the processes of cellular respiration.</li> <li>7. The ability to understand the molecular as well as the chromosomal basis of inheritance.</li> <li>8. The ability to describe the roles and the differences between mitosis and meiosis divisions.</li> <li>9. The ability to understand the process of mammalian reproduction.</li> <li>10. The ability to describe the chemical signals and their mode of action.</li> <li>11. The ability to understand the function of endocrine and nervous systems.</li> </ol> |


|      |  |         |   |
|------|--|---------|---|
| Sub. | Course Syllabus (البرنامج الدراسي) منهج المادة | الموضوع |  <b>كلية المعرفة</b><br>ALMAAREFA COLLEGE |
| Year | 2015/2016                                      | العام   |   |

| <b>Major Topics Covered</b> | 1.The chemical context of life<br>2. Carbon and molecular diversity of life<br>3. The structure and function of macromolecules<br>4. Water and fitness to environment.<br>5. Cell structure and function<br>6. Membrane structure and function.<br>7. An introduction to metabolism and Enzymes.<br>8. Cellular respiration.<br>9. Mitosis<br>10. Meiosis<br>11. Mendel and the gene idea<br>12. Chromosomal basis of inheritance<br>13. Molecular basis of inheritance<br>14. From gene to protein<br>15. Chemical signals in animals (Endocrine System)<br>16. Animal reproduction<br>17. Nervous system |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
|-----------------------------|--|--|------------|------|----------|---|---------|---|----------------|----|---------|---|-------------------|----|------------|
|                             | <b>Assessment &amp; Evaluation Plan for the Course</b>   | <table border="1"> <thead> <tr> <th>Assignment</th> <th>Mark</th> </tr> </thead> <tbody> <tr> <td>Homework</td> <td>1</td> </tr> <tr> <td>Quizzes</td> <td>4</td> </tr> <tr> <td>Lab / Tutorial</td> <td>20</td> </tr> <tr> <td>Project</td> <td>5</td> </tr> <tr> <td>Two Midterm Exams</td> <td>40</td> </tr> <tr> <td>Final Exam</td> <td>30</td> </tr> </tbody> </table> | Assignment | Mark | Homework | 1 | Quizzes | 4 | Lab / Tutorial | 20 | Project | 5 | Two Midterm Exams | 40 | Final Exam |
| Assignment                  | Mark   |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Homework                    | 1  |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Quizzes                     | 4  |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Lab / Tutorial              | 20   |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Project                     | 5  |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Two Midterm Exams           | 40   |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |
| Final Exam                  | 30   |  |            |      |          |   |         |   |                |    |         |   |                   |    |            |

|      |                                    |         |   |
|------|------------------------------------|---------|---|
| Sub. | Course Syllabus (البرنامج الدراسي) | الموضوع |  <b>كلية المعرفة</b><br>ALMAAREFA COLLEGE |
| Year | 2015/2016                          | العام   |   |

### Distribution of topics upon academic weeks


| WEEK                                | DATE (Starting) | TOPICS   | DUTIES                                    |
|-------------------------------------|-----------------|--|---|
| 1                                   |                 | -----Introduction-----   | -----                                     |
| 2                                   |                 | 1- Chemical context of life<br>2- Carbon and molecular diversity                   |   |
| 3                                   |                 | 3- Structure and function of Macromolecules  |   |
| 4                                   |                 | 4- Water and life<br>5- Cell structure and Function                                | <b>QUIZ 1</b><br><b>L: 1, 2, 3, 4</b>     |
| 5                                   |                 | <b>ADHA VACATION</b>   |   |
| 6                                   |                 | <b>ADHA VACATION</b>   |   |
| 7                                   |                 | 6- Membrane structure and Function<br>7- An Introduction to metabolism and Enzymes | Test lessons 5 , 6                        |
| 8                                   |                 | 8- Cellular respiration<br>9-Mitosis   |   |
| 9                                   |                 | 10-Meiosis   |   |
| <b>1<sup>st</sup> MID-TERM EXAM</b> |                 |  |   |
| 10                                  |                 | 11- Mendel and the gene idea   | <b>QUIZ 2</b><br><b>L: 7, 8 , 9, 10</b>   |
| 11                                  |                 | 12- Chromosomal basis of inheritance   |   |
| 12                                  |                 | 13- Molecular basis of inheritance   | <b>QUIZ 3</b><br><b>L: 11, 12 , 13</b>    |
| 13                                  |                 | 14- From gene to protein   |   |
| <b>2<sup>nd</sup> MID-TERM EXAM</b> |                 |  |   |
| 14                                  |                 | 15- Chemical signals in animals  |   |
| 15                                  |                 | 16- Animal reproduction  |   |
| 16                                  |                 | 17- Nervous system   | <b>QUIZ 4</b><br><b>L: 14, 15, 16, 17</b> |
| 17                                  |                 | <b>REVISION + PROJECT PRESENTATION</b>   |   |
| 18                                  |                 | <b>FINAL EXAMS</b>   |   |

|      |  |         |   |
|------|--|---------|---|
| Sub. | Course Syllabus (البرنامج الدراسي) منهج المادة | الموضوع |  <b>كلية المعرفة</b><br>ALMAAREFA COLLEGE |
| Year | 2015/2016                                      | العام   |   |

|                   |   |
|-------------------|---|
| <b>College</b>    | <b>Al-Maarefa College for Sciences and Technologies</b> |
| <b>Department</b> | <b>General Sciences</b>                                 |

|                     |                                   |
|---------------------|-----------------------------------|
| <b>Course Code</b>  | <b>BIOL 101</b>                   |
| <b>Course Name</b>  | <b>General Biology laboratory</b> |
| <b>Credit Hours</b> | <b>1</b>                          |
| <b>Instructor</b>   | <b>Shireen Abed Rabo</b>          |
| <b>Web site</b>     | <b>Lms.mcst.edu.sa</b>            |
| <b>Email</b>        | sabedrabo@mcst.edu.sa             |

|  |   |
|--|---|
| <b>Course Description</b>                            | This course covers the fundamental principal and concept of practical biology the topics cover: The microscope; the cell; the movement of molecule across cell membrane: the tissues (epithelial, connective, muscular and nervous); cell division; the dissection. And all of these have experiment's to provide students with the basic practical skills  |
| <b>Prerequisite(s)</b>                               | <b>none</b>   |
| <b>Textbook(s) &amp; Supplementary Materials</b>     | <ul style="list-style-type: none"> <li>• <i>biology 101 laboratory manual</i></li> <li>• Campbell N.A., Reece J.B. and Mitchell L.G. Biology. Fifth Edition. Benjamin Cummings Company, Inc. ISBN 0-8053-6573-7. Parsons J., Oja D., Carey J., Carey P.</li> <li>• <a href="http://en.wikibooks.org/wiki/General_Biology">http://en.wikibooks.org/wiki/General_Biology</a></li> <li>• <a href="http://faculty.clintoncc.suny.edu/faculty/michael.gregory/files/bio%20101/bio_1_menu.htm">http://faculty.clintoncc.suny.edu/faculty/michael.gregory/files/bio%20101/bio_1_menu.htm</a></li> <li>• <a href="http://histology.med.umich.edu/medical/">http://histology.med.umich.edu/medical/</a></li> <li>• <a href="http://www.biologycorner.com">http://www.biologycorner.com</a></li> </ul>  |
| <b>Student Outcomes (SO) Addressed by the Course</b> | <p>12. The ability to understand the most important of practical biology</p> <p>13. The ability to identify the parts of compound microscope and explain their function and how to prepare wet a mount slide and focusing it under the different power</p> <p>14. The ability to recognize the common feature of cells and prepare animal and plant cells.</p> <p>15. The ability to observe osmosis in plant and animal in different solution</p> <p>16. The ability to identify the different type of tissues and their location</p> <p>17. The ability to observe the agglutination of blood and determine the type of blood according the agglutination occurs.</p> <p>18. The ability to identify the different stage of mitosis and meiosis.</p> <p>19. The ability to doing the dissection of rabbit and identify the external and internal anatomy.</p> |
| <b>Major Topics Covered</b>                          | <ol style="list-style-type: none"> <li>1. The microscope</li> <li>2. The cell</li> <li>3. Movement of molecules across cell membrane</li> <li>4. Animal tissues (epithelial tissues)</li> </ol>   |

|      |  |         |   |
|------|--|---------|---|
| Sub. | Course Syllabus (البرنامج الدراسي) منهج المادة | الموضوع |  <b>كلية المعرفة</b><br>ALMAAREFA COLLEGE |
| Year | 2015/2016                                      | العام   |   |

|  |   |           |
|--|---|-----------|
|  | 5. Animal tissues (connective tissues)<br>6. Animal tissues (muscular and nervous tissues)<br>7. Blood group<br>8. Cell division<br>9. Vertebrate anatomy (digestive, respiratory and reproductive system)<br>10. Vertebrate anatomy (circulatory, urogenital and endocrine system) |           |
| <b>Assessment &amp; Evaluation Plan for the Course</b> | <b>Practical exam</b>   | 5 points  |
|  | <b>Final exam</b>   | 8 marks   |
|  | <b>Quizzes ( approximately 2practical quiz+ activity )</b>  | 2 marks   |
|  | <b>Reports / assignment</b>   | 5points   |
|  | <b>Total</b>  | 20 points |
| <b>Policies</b>  | 1. Three delays are considered as one absent<br>2. Students can discuss homework, but no copying!, according to the college bylaws the minimum penalty of plagiarism is failing the course.   |           |

### CALENDAR & OUTLINE OF TOPICS

| WEEK | DATE | TOPICS   | DUTIES/TASKS DUE DATES |
|------|------|--|------------------------|
| 1    |      | Introduction                                       |                        |
| 2    |      | The microscope                                     | Report 1               |
| 3    |      | The cells (types of cells)                         | Report 2               |
| 4    |      | The cells (differentiation between plant & animal) | Report 3               |
| 5    |      | اجازة عيد الاضحى المبارك                           |                        |
| 6    |      | REVISION + اجازة                                   |                        |
| 7    |      | The cellular transport & biological membrane       | Report 4               |
| 8    |      | Animal tissues (epithelial tissues)                | Report 5               |
| 9    |      | Animal tissues (connective tissues)                | Report 6               |
| 10   |      | Animal tissues (muscular + nervous tissue)         | Report 7               |
| 11   |      | PRACTICAL EXAM                                     |                        |
| 12   |      | BLOOD types & group                                | Report 8               |
| 13   |      | The cell division                                  | Report 9               |
| 14   |      | The anatomy of rabbit                              | Report 10              |
| 15   |      | The anatomy of rabbit                              |                        |
| 16   |      | revision   |                        |
| 16   |      | FINAL EXAM   |                        |