# Course specification

**University/Academy:** Damanhour
**Faculty/Institute:** Science
**Department:** Botany

| 1. course Data: | | |
|---|---|---|
| Course code: **Bot 301** | Course title: **Bacteria and bacterial disease** | Academic year/level: 2009\2010<br>3rd year student (first term) |
| Specialization: botany | No. of instructional units: lecture 3 practical 3 | |

| | |
|---|---|
| **2. course Aim** | The aim of the course is to learn the basic information about prokaryotes with particular emphasis on the bacterial cell structure, bacterial nutrition and growth. It is also aims to study the interaction between human and pathogenic microorganisms and how to control it. |
| **3. Intended learning outcome** | |
| **a) Knowledge and understanding** | By the end of the course, students will be able to:<br>A1: Draw the structure of bacterial cells<br>**A**2: Describe Gram positive and Gram negative bacteria<br>A3: Give methods for isolation and culturing of bacterial<br>A4: List nutritional and environmental requirements for good growth and reproduction of bacteria<br>A5: Describe the different growth measurements<br>A6: Define bacterial groups<br>A7: List some pathogenic microorganisms |
| **b) Intellectual skills** | By the end of the course, the students are expected to develop higher order skills that are reflected in their ability to:<br>B1: Conclude the bacterial cell and the function of each structure<br>B2: Compare the growth requirement of the different microorganisms<br>B3: Modify the growth media of bacteria<br>B4: Contrast between autotrophic and heterotrophic bacteria. |
| **c) Professional skills** | By the end of the course, students will be able to:<br>C1: use the microscope with oil immersion lens, autoclave and instruments related to the course<br>C2: Prepare and examine bacterial cultures<br>C3: Prepare the different physiological and biochemical tests<br>C4: Examine different bacteria toward different media and different conditions |
| **d) General skills** | By the end of the course, students will be able to: |

| | |
|---|---|
| | D1: communication skills, covering both written and oral communication<br>D2: problem – solving skills, relating to quantitative information, extending to situations have to be made on the basis of limited information<br>D3: interpersonal skills, relating to the ability to interact with other people and to engage in team – working and to be creative and innovative for academia and industry. |
| **4. course content** | Introduction<br>-The position of bacteria among microorganisms<br>- Microscopy<br>- morphological characters<br>- Structure of prokaryotic cell<br>External Structures of the bacterial cell<br>Internal Structures of the bacterial cell<br>-Reproduction of bacteria<br>endospore formation<br>Bacterial nutrition<br>Conditions required to bacterial growth<br>Bacterial growth and measurement<br>Control of bacteria<br>Importance group of bacteria<br>Bacterial disease |
| **5. Teaching and learning methods** | a. Lecture using PowerPoint presentations.<br>b. Practical sections.<br>c. Essay.<br>d. Independent reading throughout basic Texts books and research papers. |
| **6. teaching and learning methods for students with special needs** | N/A |
| **7. Student Assessment** | Quizzes.<br>Mid term exam.<br>Practical exam.<br>Final term exam |
| **a) Procedures used:** | |
| **b) Schedule:** | Assessment 1: Quizzes. Week: 4-7 |

| | |
|---|---|
| | Assessment 2: Mid term exam. Week: 8<br>Assessment 3: Practical exam. Week: 15<br>Assessment4: Final term exam. Week: 16 |
| **c) Weighing of Assessment:** | Semester work 10<br>Mid term exam 10<br>Practical examination 30<br>Final term exam 100<br>Total 150 |
| **8. List of Textbooks and References:** | |
| **a) Course Notes** | - Lecture notes on general bacteriology. |
| **b) Required Books (Textbooks)** | - Schlegel, HG. General Microbiology, 7th edition, Cambridge press, 1995<br>-Alas, RM. Principles of Microbiology, second edition, WMC. Brown Pub 1997<br>-Cappuccinos JG and Sherman N. Microbiology (A Laboratory Manual) 8th edition Pearson Pub 2008. |
| **c) Recommended Books** | Medical Microbiology, Sensory Mechanisms in Bacteria: Molecular Aspects of Signal Recognition and Environmental Microbiology: Current Technology and Water Applications |
| **d) Periodicals, web sites,…,etc** | - Bergey' s Manual of Systematic Bacteriology (recent edition)<br>http:// www.bact.wisc.edu/the microbial world/homepage.html<br>http:// www.text book of bacteriology.net |

**Course Instructor:** Dr. Mona E. Mabrouk **Head of Department:** Dr.

**Date: 17/8/2009**