# Course specification

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

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<th>1. course Data:</th>
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<tr>
<td><strong>Course code:</strong> Bot306</td>
<td><strong>Course title:</strong> Cytology</td>
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|  | **Academic year/level:** 2009\2010  
**3rd year students** / second term |
| **Specialization:** Botany | **No. of instructional units:** lecture 2 practical 3 |

| 2. course Aim | By the end of the course, students will be able to:  
The aim of the course is to define and outline a general cytology, cytogenetics and cytotaxonomy of different living systems with particular emphasis on molecular and cytological methodologies. |

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<th>3. Intended learning outcome</th>
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| **a) Knowledge and understanding** | By the end of the course student should be able to:  
1. Illustrate the molecular organization and flow information in viruses, prokaryotes and eukaryotes.  
2. List general cytological methodology to determine the suitable method to study each cell organelle.  
4. Write different types of chromosomes  
5. Describe the mechanisms of cell division and growth  
6. Underline the role of cytogenetics and cytotaxonomy in speciation and evolution. |
| **b) Intellectual skills** | By the end of the course the student is expected to develop higher order skills that are reflected in the student ability to:  
1. Modify the suitable method to study specific cells.  
2. Analyze the factors affecting cell cycle. |
| **c) Professional skills** | By the end of the course the student expected to develop higher skills that are reflected in the ability to:  
1. Use different types of microscopes.  
2. Choice and prepare specific stains to examine some living cell constituents.  
3. Conduct a study of different karyotypes.  
4. Dissect and interpret the obtained information on chromosome aberration and its relation to plant speciation and evolution. |
| d) General skills | D1: Exchange ideas, principles, theories and information by oral written and visual means.  
D2: Work effectively both in a team and independently. |
|------------------|--------------------------------------------------------------------------------|
| 4. course content | Organization of living systems  
• Basic cell chemistry and the flow of information through the cell  
• Cytological techniques (microscopy, cell separation and culture, Fractionation, Radio-autography, Nucleic acid hybridization, chromosome banding).  
• Examine Origin, Structure and Function of Cytoplasmic membrane systems and Nucleic acid containing organelles  
• Perform Ultra- and functional structures of Chromosomes and Genes in pro- and eukaryotes  
• Examine Factors affecting cell cycle and division.  
• Elicit Genetic control of cell cycle and division  
• Perform Quality control of cell cycle and division  
• Cytogenetics and cytotaxonomy  
Chromosomal variations of related species |
| 5. Teaching and learning methods | Lectures, seminars, textbooks  
Problems  
Lab-work  
Course work, essay |
| teaching and learning methods for students with special needs | Recent text books, data show, overhead projector, simple microscopes, compound light microscopes, prepared slides and dyes |
| 6. Student Assessment | Written exam  
Practical exam  
Problems  
Assignments |
| a) Procedures used: | ----------- |
| b) Schedule: | Assessment 1: Problems Week: 4-7  
Assessment 2: Med term Week: 8  
Assessment 3: Final practical Week: 14  
Assessment 4: Final written Week: 16 |
| c) Weighing of Assessment: | Mid-Term Examination: 10  
Final-Term Examination: 150  
Practical Examination: 30  
Semester Work: 10  
Total: 200 |
### 7. List of Textbooks and References:

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<tr>
<td><strong>a)</strong> Course Notes</td>
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<td><strong>b)</strong> Required Books (Textbooks)</td>
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<tr>
<td><strong>c)</strong> Recommended Books</td>
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| **d)** Periodicals, web sites, ....etc | Periodicals, Web Sites, .... etc  
Http:// homepage.mac.com/enognog/checkpoint.htm  
Http://www.Leland.stanford.edu/group/urchin/mitosis.htm  
Http://www.biology.arizona.edu/cell_bio/tatutorials?cell_cycle/cells2.htm  
Http://biology.about.com/library/blmitosis.htm  
Http://www.envinoveritas.com/health/dng.htm  
Http://users.rcn.com/jkimball.ma.ultranet/biology pages//cell cycle.htm |

**Course Instructor:**

Date: 20/6/2009

**Head of Department:**