## 1-Basic information

| | | | |
|---|---|---|---|
| **Course Code:** | **BIO:1104** | | |
| **Course title :** | Plant Anatomy- Plant Morphology | | |
| **Academic year:** | 1st year (2018/2019) | | |
| **Program title:** | B.V Sc. Veterinary Medical sciences | | |
| **Contact hours/week/semester:** | Lecture: 1 | Practical:1 | Total:2 (hour/week) |
| **Approval Date** | | | |

## 2-Professional information

**Overall aims of course**:

**This course aims to:**

1- Provide students with an overview of the structure of the plant cells and tissues.
2- Study the morphological types and modifications of root, stem and leaves.
3- Help students to identify plant specimens due to its morphological and anatomical features.
4- Develop an ability to use communication technology, think independently, manage time and work in groups effectively.

## 3- Intended learning outcomes of course (ILOs)

### a-Knowledge and understanding:

**By the end of this course the student should be able to:**

a1- Describe the features of plant anatomy at the cell, tissue and organ levels.
a2- Explain the morphology of plants from germination to yield.
a3- List the morphological modification of root, stem and leaf.

### b-Intellectual skills

**By the end of this course the student should be able to:**

b1- Differentiate the different cell organelles of plant and animal cells.
b2- Compare and contrast fine structure of cells
b3- Integrate informed judgments about plant morphology and anatomy.

### c-Professional and practical skills

**By the end of this course the student should be able to:**

c1- Prepare plant sections for microscopic examination.
c2- Examine the complexity of tissues.
c3- Examine the morphology of terrestrial plants and differentiate between the modified and normal plant organs
c4- Illustrate the different forms of seed germination.

### d-General and transferable skills

By the end of studying the course, the student should be able to:

d1- Learn how to search for an information using the library or internet resources
d2- Work in a group and learn time management

## 4-Topics and contents

| Course | Week | Topics | No. of hours | Lectures | Practical |
|---|---|---|---|---|---|
| **Plant Anatomy (Lec. 1 h./week, Pract. 1h./week)** | 1-3 | Introduction<br>- Structure of the plant cell (Protoplasmic & Non-protoplasmic components) | 4 | 2 | 2 |
| | 4-5 | Cell wall – Plant tissues (Meristematic& Permanent) | 4 | 2 | 2 |
| | 6-7 | Dermal tissues (Epidermal tissues) . | 3 | 1 | 2 |
| | 8-9 | Mechanical tissues (collenchyma, sclerenchyma) | 2 | 1 | 1 |
| | 10-11 | Vascular system & secretory system | 2 | 1 | 1 |
| | 12 | Internal structure of the young roots (dicot & monocot) | 2 | 1 | 1 |
| | 13 | Internal structure of the young stems (dicot & monocot) | 3 | 1 | 2 |
| | 4-5 | Root system Tap root adventitious. | 4 | 2 | 2 |
| | 6-7 | Shoot system. | 2 | 1 | 1 |
| | 8-9 | Stem branching, | 2 | 1 | 1 |

## 5-Teaching and learning methods

5.1- Lectures, discussions, demonstrations, and hands on laboratory exercises to teach.
5.2- Computer Assisted Instructions using PowerPoint Presentation and information summary.
5.3- Handouts will be used during lectures…
5.4- Practical

## 6-Special teaching and learning methods for Students with disabilities students

6.1. Office hours
6.2. Revisions
6.3. Special assignments
6.4. Special lab duties

## 7-Student assessment

**7.1. Assessments methods:**

| **Method Anatomy** | Matrix alignment of the measured ILOs/ Assessments methods | | | |
|---|---|---|---|---|
| | **K&U** | **I.S** | **P&P.S** | **G.S** |
| Semester work | a1,2 | b3 | | d1-2 |
| Practical Exam | a1-3 | b1,3 | c1-3 | |
| Final Exam | a1-3 | b1-3 | | |

**7.2-Assessment schedules/semester**

| Method | Week(s) |
|---|---|
| Practical exams | 14-15 |
| Final exams | 16 |
| Semester work | Every week |

**7.3-Weight of assessments**

| Assessment | % |
|---|---|
| Practical exams | **40** |
| Final exams | **50** |
| Student activity | **10** |
| | **100%** |

## 8- List of references

**8.1.Nots and books**

Hand outs

**8.2.Essential books:**

- Pandy and Chadha (1996). A Text Book of Botany: Plant Anatomy and Economic botany Volume III.
- Eanes and Macdaniels (1984). An introduction to plant anatomy.

**8.3. Recommended texts**

-Klein, Richard M. and Deana T. (1988) Fundamentals of Plant Science, , Harper and Row
-Janick, Schery, Woods, Ruttan, W.H. (1974). Plant Science, 2nd Ed., Freeman and Co.
-Ernest M.Gifford and Adriance S. Foster (1989). Morphology and Evolution of Vascular Plants, 3rd Edition, (New York: W. H. Freeman and Company)

**8.4.Journals , Websites ……..etc**

**Journals:**

**Websites:**

- http://www.cas.muohio.edu/~meicenrd/ANATOMY/syllabus.html
- http://www.wwcc.edu/oca/syllfiles/200AGPR113A67200298140492881PlantScienceI_Syllabus.doc

Course Coordinator — Head of Department

Prof. Dr/ M.S. Abdelhameed — Prof. Dr/ M.S. Abdelhameed

| Course | Topic | Lect. | Pract. | Intended learning outcomes of course (ILOs) | | | |
|---|---|---|---|---|---|---|---|
| | | Week | Week | K&U(a) | I.S(b) | P.P.S (c) | G.T.S (d) |
| Plant Anatomy | Introduction<br>- Structure of the plant cell (Protoplasmic & Non-protoplasmic components) | 1-3 | 1-2 | A1 | B1,2 | C 1 | D 1,2 |
| | Cell wall – Plant tissues (Meristematic& Permanent) | 4-5 | 3-4 | A1 | B2 | C 1 | D 1,2 |
| | Dermal tissues (Epidermal tissues) . | 6-7 | 5-6 | A1 | B 3 | C 1,2 | D 1,2 |
| | Mechanical tissues (collenchyma, sclerenchyma) | 8-9 | 7-8 | A1 | B 3 | C 1,2 | D 1,2 |
| | Vascular system & secretory system | 10-11 | 9-10 | A1 | B 3 | C 1,2 | D 1,2 |
| | Internal structure of the young roots (dicot & monocot) | 12 | 11 | A1 | B 3 | C 1,2 | D 1,2 |
| | Internal structure of the young stems (dicot & monocot) | 13 | 12 | A1 | B 3 | C 1,2 | D 1,2 |
| | Root system Tap root adventitious. | 14-15 | 13 | A1 | B 3 | C 1,2 | D 1,2 |

## 1-Basic information

| | |
|---|---|
| **Course Code:** | **BIO:1104** |
| **Course title :** | Invertebrates |
| **Academic year:** | 1st year, 2018-2019 |
| **Programme title:** | B.V Sc. Veterinary Medical sciences |
| **Contact hours/ week/semester:** | Lectures : 1hrs/week<br>practical: 1hrs/week |

## 2-Professional information

**This course aims to**:

1- Explain the basic concepts of invertebrates for understanding of their classification and life cycles.
2- Interpret biological problems related to the interaction between invertebrates and human.
3- Gain the students with skills of dissecting and differentiate between invertebrates using microscope with safety regulations.
4- Provide students with skills to corporate with others and self-learning.

## 3- Intended learning outcomes of course (ILOs)

### a-Knowledge and understanding:

**By the end of this course the student should be able to:**

a1- Describe the biological activities of animals and human and invertebrate life cycle.
a2- Define the basic topographical terms, different types and structures of the invertebrates.
a3- Outline the classification of the phylum invertebrates.

### b-Intellectual skills

**By the end of this course the student should be able to:**

b1- Compare between different invertebrate classes..
b2- Interpret biological problems resulting from interaction between parasitic invertebrates and human

### C-Professional and practical skills

**By the end of this course the student should be able to:**

c1- Draw the invertebrate features investigated by dissection.
c2- Prepare a definite dissected specimen of the different regions in invertebrate animals.
c3- Draw the diagnosed invertebrates by microscope.

### d-General and transferable skills

**By the end of studying this course, the student should be able to:**

d1- Work in group and manage time
d2- Prepare an essay using internet and text books.

## 4-Topics and contents

| Practical topics | No. of hours | Lectures | Practical |
|---|---|---|---|
| **- classificationof invertebrates**<br>**- Protozoa**<br>( Amoeba, Euglena, Trypanosoma, Paramecium ) | **2** | **2** | |
| **Parazoa**( Sponge) | **2** | **2** | |
| **Hydrozoa** ( Hydra, Obelia) | **2** | **2** | |
| **Planaria**<br>**Fasciola** | **2** | **2** | |
| **Schistosoma and Taenia** | **2** | **2** | |
| **Ascaris** | **2** | **2** | |
| **Annelida**<br>( Allolopophora , Hirudo , Neris ) | **2** | **2** | |

| Practical topics | No. of hours | Lectures | Practical |
|---|---|---|---|
| **- classificationof invertebrates**<br>**- Protozoa**<br>( Amoeba, Euglena, Trypanosoma, Paramecium ) | **2** | | **2** |
| **Parazoa**( Sponge) | **2** | | **2** |
| **Hydrozoa** ( Hydra, Obelia) | **2** | | **2** |
| **Planaria**<br>**Fasciola** | **2** | | **2** |
| **Schistosoma, Taeniaand Ascaris** | **2** | | **2** |
| **Annelida**<br>( Allolopophora , Hirudo , Neris ) | **2** | | **2** |
| **Revision+ Final exam** | **2** | | **2** |

## 5-Teaching and learning methods

**Lectures through: -**

**5.1-** Lectures (Data show, write board, overhead projector, video and open discussion).

**Practical through: -**

**5.2...** Practical work in the laboratory -

- Dissection the animals and identification the slides by LM
- Identification of some specimens.

**Self learning through : -**

**5.3. Self learning**

- Assignments and presentations

**5.4.** Individual learning using electron microscopic figs.

## students

**Via** office hours, special meetings, special assignments and special lab duties.

## 7-Student assessment

### 7.1. Assessments methods

| Method | Matrix alignment of the measured ILOs/ Assessments methods | | | |
|---|---|---|---|---|
| | **K&U** | **I.S** | **P&P.S** | **G.S** |
| **Practical Exam** | **-** | | **c1, c2, c3** | |
| **Final written Exam** | **a1- a3** | **b1, b2** | | |
| **Student activity** | | | | **d1,d2** |

### 7.2-Assessment schedules/semester

| **Method** | **Week** |
|---|---|
| **Practical exams** | **14th** |
| **Final exams** | **15th** |
| **Student activity** | **Through the term** |

### 7.3-Weight of assessments

| **Assessment** | **%** |
|---|---|
| **student activity** | **10** |
| **Practical exams** | **40** |
| **Final exams** | **50** |
| **Total** | **100** |

## 8- List of references

### 8.1.Nots and books

Departmental notes: invertebrates, Lecture notes by staff members of zoology department.

### 8.2. Recommended books:

- Parasitology in focus.(2000): Book of parasitology, ED. H. Mehlhorn. Invertebrates of Mediterranean see ED. G.N. Soliman.

**Journals:**

Websites:

- http://www.guesspapers.net/education/Summary_of_Kingdom_Anamalia"
-http://www.nature.com/news/2010/100106/full/news.2010.1.html.
- http://journals.royalsociety.org/content/qq5un1810k7605h5/fulltext.pdf.

- http://www.sciencedaily.com/
- http://www.pathology.washington.edu/galleries/cytogallery/main.phb
-www.info.brookscole.com

**Course Coordinators**

Prof. Dr/ ThabetSakran

**Head of Department**

Prof. Dr./Hanaa Ibrahim Fahim.

| Topic | weeks | Intended learning outcomes of course (ILOs) | | | |
|---|---|---|---|---|---|
| | | K&U (a) | I.S (b) | P.P.S (c) | G.T.S (d) |
| **Introduction and classificationof invertebrates** | **1** | **a2, a3** | **b1** | | **d1** |
| **Protozoa** ( Amoeba, Euglena, Trypanosoma, Paramecium ) | **2** | **a1, a2, a3** | **b1, b2** | **c2, c3** | **d1, d2** |
| **Parazoa**( Sponge) **and Hydrozoa** ( Hydra, Obelia) | **3-6** | **a2, a3** | **b1** | **c2, c3** | **d1, d2** |
| **Planaria and Fasciola** | **7,8** | **a1, a2, a3** | **b1, b2** | **c2, c3** | **d1, d2** |
| **Schistosoma and Taenia** | **9,10** | **a1, a2, a3** | **b1,b2** | **c2, c3-** | **d1, d2** |
| **Ascaris and Annelida** ( Allolopophora , Hirudo , Neris ) | **11-14** | **a1, a2, a3** | **b1, b2** | **c1, c3** | **d1, d2** |