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**South Valley University**

**Faculty of Vet. Medicine**

### **Course Specifications**

**Programme(s) on which the course is given:** Bachelor degree of Vet. Science.

**Major or Minor element of programmes:** Minor

**Department offering the programme:** Department of Genetics

**Department offering the course:** Department of Genetics

**Academic year / Level:** 1<sup>st</sup> year (1<sup>st</sup> semester)

**Date of specification approval:** 22\12\2009

### **A- Basic Information**

**Title:** Principles of Genetics

**Code:** 113

**Credit Hours:**

**Lecture:** 36 hrs      **Practical:** 24 hrs      **Total:** 60hrs

### **B- Professional Information:**

**By completion of this course, the students should acquire:**

- A balanced treatment of the major areas of genetics.
- High level courses in genetics and breeding.
- Use a clear, friendly style that conveys the excitement of research, stimulates imagination, and invites students to learn more
- A resource for study that assists them in their careers long after they have completed the course.
- Job compatibility related to advancements in agriculture and many industries.
- Affiliation of genetic controversies such as

human genome project, the potential ethical and medical risks of recombinant DNA, cloning of mammals, and human behavioral genetics issues which have captured the interest of the general public.

- Information and communication technology in his future job.

## **2-Intended Learning Outcomes (ILOs)**

### **a)Knowledge and Understanding:**

**Graduates of veterinary medical program must acquire the following knowledge and understanding:**

a1-Brief overview of the history of genetics.

a2- Mendelian genetics.

a3- Chromosomal basis of inheritance, sex determination and linkage.

a4- Extension of Mendelian genetic analysis.

a5- Linkage, crossing-over, and gene mapping.

a6- The structure of genetic material.

a7- DNA replication, transcription, and translation.

a8- Recombinant DNA technology.

a9- Regulation of gene expression.

a10- Mutations.

a11- Basic knowledge of gene therapy.

a12- Population genetics.

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### **b-Intellectual skills**

#### **Graduates must have the ability to:**

b1-Use the “Scientific genetic method”

b2- Make keen observation on the living organisms to identify its characteristics.

b3- Use the ability to identify the agricultural problems and suggest solution on genetic basis.

### **c-Professional Skills:**

#### **Graduates must be attain the capacity to:**

c1-Graduate should be able to plan primary experiments.

c2-Graduate should be able to choice the appropriate analytical practices.

c3-Graduate should be able to select adequate laboratorial and farm practice for animals.

### **d-General skills**

#### **Graduates must have the ability to:**

d1-Graduate should be able to access data and information from the internet related to genetics.

d2-Graduate should be able to present finding of scientific in seminary and workshops.

d3-Graduate should be able to cooperate in teams in animal farm visits.

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**Contents:**

<b>Subject</b>	<b>No. of lecture hours</b>	<b>No. of lab hours</b>
History and mendelian genetics	3	4
Sex determination and sex linkage	3	2
Extension of mendelian genetics	3	4
Linkage and crossing over	3	2
Structure of genetic material	3	2
DNA replication, transcription and translation	6	-
Recombinant DNA technologies	3	-
Mutations	3	4
Basic knowledge of gene therapy	3	-
Population genetics	3	2
Cell, chromosomes, cell division	3	4
Total number of hours	36	24

**4 – Teaching and Learning Methods**

4.1- Lecturer using blackboard, whiteboard and data show.

4.2- Discussion sessions.

4.3- Field and animal farm visits.

4.4- Laboratory experiments

4.5- Library visit and research papers reporting

**7- Student Assessment****7.1- Examination:**

Written exam to measure knowledge and understanding, intellectual skills.

Term paper to measure Intellectual skills, professional skills, General

skills.

Practical exams to measure professional skills, knowledge and understanding.

Oral exam. Intellectual skills, understanding,

### **7.2- Time Schedule**

Mid-term exam	week 8
Final exam	week 16
Practical exam	week 14
Oral exam	week 16

### **7.3- Grading System**

Mid-Term Exam	20%
Final Term Exam	50%
Oral Exam	20%
Practical Exam	10
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Total	100%

### **7.4- Tools:-**

- Assignments which are:-

- 1- Formulation of posters to illustrate certain items of the course.
- 2- Formulation of essays on certain subjects of the course.
- 3- Practical follow up of certain experimental work.

## **8- List of References**

### **8.1- Course Notes**

Course notes prepared by staff members.

### **8.2- Required Books (Text Books)**

Non

### **8.3- Recommended Books**

Brooker, R. J. (1999). Genetics: Analysis and principles,  
Benjamin/ Cummings Inc. New Your.

Griffiths, A. H., Gelbert, W. M., Miller, J. H., and Lewontin, R.

C. (1999). Modern

generic analysis. W. F. Freeman and company New. York  
London.

Hart1, D. L., Globerge M. I., Reynolds, A. E., Siver, L.  
M., and Veres, R. C (2000). Genetics: Form genets to  
Genomes. Mc Graw-Hill Co. USA.

Tobin, A. J., and Morel, R. E. (1997) Asking about  
cells. Saunders College publ. USA.

#### **8.4- Periodicals, Web Sites, ... etc**

[www.Amazon.com](http://www.Amazon.com)

[www.Sciencedirec.com](http://www.Sciencedirec.com)

#### **9- Facilities Required for Teaching and Learning**

Laboratory, chemicals,

Microscopes ...etc.

Internet educational lab.

Farm facilities.

Bus for field visits.

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**Course Coordinator (Course Professor):**

**Head of Department:**

**Date: 22 /12 / 2009**