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: 1st year (1st 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 aquiver:

• 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.
**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.
Contents:

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<thead>
<tr>
<th>Subject</th>
<th>No. of lecture hours</th>
<th>No. of lab hours</th>
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</thead>
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<tr>
<td>History and mendelian genetics</td>
<td>3</td>
<td>4</td>
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<td>Sex determination and sex linkage</td>
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<tr>
<td>Extension of mendelian genetics</td>
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<td>Linkage and crossing over</td>
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<tr>
<td>Structure of genetic material</td>
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<td>DNA replication, transcription and translation</td>
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<tr>
<td>Recombinant DNA technologies</td>
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<tr>
<td>Population genetics</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Cell, chromosomes, cell division</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total number of hours</td>
<td>36</td>
<td>24</td>
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</tbody>
</table>

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

Total 100%

7.4- Tools:-
- Assignments which are:-

1- Formulation of posters to illustrate certain items of the course.

2- Formulation of assays 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

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


8.4- Periodicals, Web Sites, … etc
www.Amazon.com
www.ScienceDirect.com

9- Facilities Required for Teaching and Learning

Laboratory, chemicals,
Microscopes …etc.
Internet educational lab.

Farm facilities.

Bus for field visits.

Course Coordinator (Course Professor):

Head of Department:

Date: 22 /12 / 2009