National Commission for Academic Accreditation & Assessment

Course Specification

Institution	**King Khalid University**
College/Department	**Science/Biology**

A Course Identification and General Information

1. Course title and code: **Zoology for premedical students (Health Sciences), Zoo-105**
2. Credit hours **4h/week**
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) **Health science programme (Medicine, pharmacy, Dentistry, Applied Medical Sciences)**
4. Name of faculty member responsible for the course **Dr. Kamel Tamimi, Dr. Fahmy Gad and Dr. Essam Ibrahim**
5. Level/year at which this course is offered **2nd level/ 1st year**
6. Pre-requisites for this course (if any) **None**
7. Co-requisites for this course (if any) **None**
8. Location if not on main campus **Mahalah (Academic campus)**

B Objectives

1. Summary of the main learning outcomes for students enrolled in the course.

The course will expand the student's knowledge of how the human body works over successive levels of organization from molecules of life to organ systems to organisms.

By the ending this course the students should be able to:

- Understand the biochemical phenomena related to different aspects of the human biology.
- Interpret the DNA replication and transcription outputs.
- Deduce the difference between the cell divisions.
- Describe the structure and function of different organic molecules, organelles, tissues and organs in the human body.
- Analyse the actions of different enzymes and hormones in some biological functions.
- Apply the data to improve the health of their organ systems.
- Follow the mechanisms of respiration, urine formation, blood clotting, erythropoiesis and others.
- Check and draw the details of different tissues and organ systems.

2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)

1. The course is 12 chapters from human biology textbook
   http://www.mhhe.com/biosci/genbio/maderhuman7/
2. Use the updating edition of the textbook and other related topics.
3. Increase the ability of the students to search about many topics of the course on the internet in Google, Scholar Google, Gigapedia, Pubmed, Science direct and others.
4. Assignments, Quizzes, and any other material will be posted on an E-learning home page of the course.
5. Promote the students to use the websites related to the course as website for animations and videos as you tube website.

6. Apply the advanced tools in teaching and assessment of the students.
7. The course material in the form of power point presentations deposited as pdf files on the E-learning Blackboard Website that could be accessed by the students enrolled in the course.

C. Course Description (Note: General description in the form to be used for the Bulletin or Handbook should be attached)

1 Topics to be Covered		
List of Topics	**No of Weeks**	**Contact hours**
Molecules of Life	**1**	**3**
Cell Structure and Function	**1**	**3**
Cell Division and Human Life Cycle	**1**	**3**
DNA Biology and Technology	**1**	**3**
Histology (Tissues and glands)	**1**	**3**
Digestive system and nutrition	**2**	**6**
Cardiovascular system: heart and blood vessels	**2**	**6**
Blood	**1**	**3**
Respiratory system	**1**	**3**
Urinary system	**1**	**3**
Nervous system	**1**	**3**
Muscular system	**1**	**3**

1.2 Practicals to be Covered		
List of Topics	**No of Weeks**	**Contact hours**
The Microscope and preparation of blood smear or cheek cells	**1**	**2**
Cell Structure and Function	**1**	**2**
Cell Division (mitosis)	**1**	**2**
Cell Division (meiosis)	**1**	**2**
Animal Tissue	**2**	**4**
Mammalian anatomy (Rat Dissection), blood typing, sphygmomanometer	**1**	**2**
Digestive System	**1**	**2**
Cardiovascular system	**1**	**2**
Respiratory system Urinary System	**1**	**2**
Nervous System and Sense organs	**1**	**2**
Reproductive system	**1**	**2**

2 Course components (total contact hours per semester):				
Lecture: **42**	Tutorial: --	Laboratory **12**	Practical/Field work/Internship **12**	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

1 hour/week, Answer the quizzes of the blackboard, uploads and downloads the chapters of the course

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

1. **Knowledge the Medical terminology**
2. **To know the Human anatomy & physiology**
3. **Knowledge the Chemistry of life**
4. **Recognize the Cell structure and function**
5. **Knowledge the Cell divisions**
6. **Understanding the DNA biology& technology**
7. **Interpret the Metabolism and energy yields**
8. **Analyze the organization of cells into tissues and organs, major organ systems.**
9. **Understanding the structure and function of organs in the different human body system**
10. **Knowledge the structure of organs of different systems in the body and their relative function.**

(ii) Teaching strategies to be used to develop that knowledge

- **Lectures as a presentation power point.**
- **Link the practical concepts with the theoretical part.**
- **Multi-media, videos , animations .....etc.**
- **Home works and reports about some titles related to the course.**

(iii) Methods of assessment of knowledge acquired

- **Theoretical and practical exams – quizzes -**
- **Oral discussion**
- **Reports**
- **End of the semester examination with combination of deferent types of questions such as true and false, matching, comparison, multiple choice, and short essay accounts for other 50%.**

b. Cognitive Skills

(i) Description of cognitive skills to be developed

1. **To identify the chemical concepts and its role in our life**
2. **To discuss the relation between different parts of the cell and their function**
3. **To deduce the compatibility of different structures and functions of our body.**
4. **To analyse the mechanisms of different phenomena like transcription, genetic code, digestion, metabolism, blood clotting, respiration, urine formation, nerve impulse, action potential.**
5. **To connect the structure and function of different body's systems.**
6. **To develop the intelligence aptitude of the students by discussing and analyse the mechanisms of most biochemical reactions.**

(ii) Teaching strategies to be used to develop these cognitive skills

- **Laboratory to increase the practical skills.**
- **Lectures and oral discussion method to enhance thinking, as asking questions and left the students thinking**
- **Animation and multimedia to simplify the mechanisms.**

(iii) Methods of assessment of students cognitive skills

1. **Mid term and final exams**
2. **Oral discussion**
3. **Reports about specific topics related to the lesson**
4. **Home works to explain, evaluate and interpret the structure, mechanisms and functions of organelles, issues and organ systems.**
5. **Questions have some smart verbs like, explain, evaluate, deduce, etc**

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

1. **Work independently and as a team work.**
2. **Manage resources, time and other members of the group.**
3. **Communicate results of work with others.**
4. **Carry the responsibility during handling the biological samples and other instruments in the labs**
5. **Exchange the knowledge by oral discussion between the students**
6. **Increase the ability of the students to write a reports**

(ii) Teaching strategies to be used to develop these skills and abilities

1. **Practical work and its relation to the theoretical part enrich the knowledge.**
2. **Oral communications among students and also with their teacher.**
3. **Home work to establish the discussed items in the lectures.**

4. **The practical part increases the ability of the students to work in a team work.**

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

- **Writing short assays in certain topics related to the course and evaluates them.**
- **Evaluate the students during the oral presentations**

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

- **Oral discussion about specific topics related to the course and other home works**
- **Use of computer programs and research engines**
- **Search about the knowledge in the trusted research engines**
- **Upload the course' chapters at the black board and e- learning.**

(ii) Teaching strategies to be used to develop these skills

1. **Using computer programs in the course requirements**
2. **Using microscopes and other tools for practical training**
3. **Using the animations and videos to simplify the scientific ideas.**
4. **Encourage the students to contact in bio-forum**
5. **Write reports and discuss them by oral presentations**.

(iii) Methods of assessment of students numerical and communication skills

1. **Oral discussion for the reports and give 2.5 % of the marks about the presentations**
2. **Assess the quality of writing of the report**
3. **Different kinds of exams help to evaluate the students.**

e. Psychomotor Skills (if applicable)

(i) Description of the psychomotor skills to be developed and the level of performance required

Increase the psychomotor skills of the students by examining the slides under microscopes and allow them also to draw a scientific diagram.

(ii) Teaching strategies to be used to develop these skills

- **Check the slides under microscopes**
- **Draw a scientific diagrams with labelled from the models from the slides**
- **Dissect the rats to examine the general viscera**
- **Analyse the blood group, estimate the blood pressure**

(iii) Methods of assessment of students psychomotor skills

- **Each skill will be estimated during the practical exams**

5. Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	**Practical First Exam**	**6**	**12.5%**
2	**Theoretical First Exam**	**7**	**12.5%**
3	**Second Exam**	**12**	**12.5%**
4	**Practical Final Exam**	**15**	**12.5%**
5	**Theoretical Final Exam**	**16**	**50%**

D. Student Support

1. Arrangements for availability of teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

10 Office hours / week

E Learning Resources

1. Required Text(s)

- **Human Biology,** Sylvia S. Mader; Ninth edition, 2006; Publisher: The McGraw-Hill Companies.

http://www.mhhe.com/biosci/genbio/maderhuman7/

2. Essential References

- **Human Biology, Daniel D. Chiras, (2010). Jones & Bartlett Learning; 7 edition (December 23.**
- **Human Biology, Sylvia Mader and Michael Windelspecht (2011). McGraw-Hill Science/Engineering/Math; 12 edition.**
- **Memmler's Structure and Function (2005). Barbara Janson Cohen & Jason Taylor. Lippincott Williams & Wilkins eighth edition**.

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

- **Campbell, Neil A. Biology / Neil A. Campbell, Jane B. Reece. - 8th *ed (2008).***
- www.books.google.com

4-.Electronic Materials, Web Sites etc

http://www.mhhe.com/biosci/genbio/maderhuman7/

www.gigapedia.com

www.youtube.com

Animation website you use the Google and write e.g., digestive systemswf you will obtain many animated files

5- Other learning material such as computer-based programs/CD, professional standards/regulations

- **Multimedia associated with the text book and the relevant websites**

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

- **Suitable, but it is *Not* supplied with computer and Datashow or internet**
- **60 seats/ class room**
- **20 seats/lab**

2. Computing resources

- **Computer room containing about 15 computers**

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

- **Data show**
- **Animations**
- **Whiteboard**
- **Microscopes**
- **Overhead projector**
- **Models**

G. Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching • **Course evaluation by student** • **Student-faculty meeting**
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department • **Peer consultation on teaching** • **Discussion with the group of faculty teaching the same course** • **Departmental council discussions**
3 Processes for Improvement of Teaching 1. **Conducting Departmental workshops given by experts** 2. **Periodical departmental revisions of each method of teaching** 3. **Monitoring of teaching activities by senior faculty members** 4. **Development of the parent relation between the teacher and the students.**
4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • **Assigning group of faculty members teaching the same course to grade some question for various students**
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. 1. **The course material and learning outcomes are periodically reviewed and the changes to taken are approved by the departmental and the higher councils** 2. **The head of the department take the responsibility of implementing the proposed change.** 3. **Periodical meetings with outstanding students in the course to discuss the problems that face them in the course** 4. **Comparison between similar courses in relevant faculties from different universities.**