Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

REPORT ON
PERIODIC PROGRAM SELF STUDY

Bachelor of Science in Zoology

Zoology Department
College of Science
King Saud University

1431 H / 2010 G

INTRODUCTORY COMMENTS

A periodic program self study is a thorough examination of the quality of a program taking account of its mission and objectives and for a professional program requirements for the practice of that profession in Saudi Arabia, and the standards for quality assurance and accreditation defined by the NCAAA including the National Qualifications Framework. Conclusions should be supported by evidence, with verification of analysis and conclusions, and advice from others able to offer informed and independent comment.

A self study report should be considered as a research report on the quality of the program. It should include sufficient information to inform a reader who is unfamiliar with the institution about the process of investigation and the evidence on which conclusions are based to have reasonable confidence that those conclusions are sound.

Other documents such as university handbooks should be available separately and completed scales from the *Self Evaluation Scales for Higher Education Programs* should be completed and made available with the self study report. Consequently full details of what is included in these documents need not be repeated in the self study report. However this report should include all the necessary information for it to be read as a complete self contained report on the quality of the program.

The template includes a number of sections and headings to assist in preparing the report. These sections and headings should be followed in the report. However additional information can be included. Throughout the report evidence should be presented in tables or other forms of data presentation to support conclusions, with comparative data included where appropriate, and reference made to other reports or surveys with more detailed information.

The report should be provided as a single page numbered document, single sided, with a table of contents. A list of acronyms used in the report should be attached.

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Template for Report on Periodic Program Self-Study

For guidance on the completion of this template, please refer to Sections 2.8, 2.9, and 2.10 of Part two of the *Handbook for Quality Assurance and Accreditation in Saudi Arabia and to the Guidelines for Using the Template for a Periodic Program Self-Study.*

Institution **King Saud University**
College/ Department **College of Science/ Department of Zoology**

A. General Information

1. Program title and code

Name of the degree programme (**درجة البكالوريوس في علم الحيوان**) **B.Sc. in Zoology**

Language of instruction **(Arabic & English)**
Contact person

- **Chairman of the Department (Prof. Dr. Ibrahim Al-Hazza)**
  E.mail: imalhazza@hotmail.com

- **Program Co-ordinator (Dr. Ashraf Mashaly)**
  E. Mail: mmashely@ksu.edu.sa

Department web site:
http://colleges.ksu.edu.sa/Arabic%20Colleges/CollegeOfScience/ZeologyDept/default.aspx

2. Credit hours **136 hours**

3. Award (s) granted on completion of the program **B.Sc. degree in Zoology**

4. Major tracks/pathways within the program **Only one track (Major Zoology)**

5. Professional occupations for which graduates are prepared in the program

- Administrator, laboratory technician, Research assistant
(Ministry of Higher Education)
- Teacher, laboratory expert
(Ministry of Education)
- Technicians in Hospital laboratories and clinics
(Ministry of Defence and Aviation, Ministry of Interior and national Guard)
- Technicians in Research Central labs, in Medical analysis Labs, in Health units and in Hospitals (Ministry of health)
- Researcher in Animal research units and in Fishery wealth
(Ministry of Agriculture)
- Expert in quality labs.

(Saudi Standard, Metrology and Quality Organization) **- Researcher and Technician** **(In the national Commission for Wildlife Conservation and Development and in King Abdul-Aziz City for Science and Technology)** **- Technician in Naive Hospital and Salesman of Scientific preparation companies. (Private sector)**
6. Name of program coordinator/manager. Department Chairman: **Prof. Dr. Ibrahem Mohamed Al-Hazza** Tel: **0096614675774** Fax: **0096614678514** e-mail: **imalhazza@hotmail.com** website: **http://faculty.ksu.edu.sa/alhazza/default.aspx** Program coordinator: **Dr. Ashraf Mohamed Ali Mashaly** Tel: **0096614673465** Fax : **0096614678514** e-mail: **mmashely@ksu.edu.sa** website: **http://faculty.ksu.edu.sa/mashaly/default.aspx**
7. Name and position of person responsible for leadership/management of the self study. **Departmental steering committee:** **Prof. Dr. Ibrahem Al-Hazza (Chairman of the department)** **Prof. Dr. Hmoud Al-Balawi (Vice dean of the college of Science)** **Prof. Dr. Othman Al-Dokhi (Head of development and quality committee)** **Prof. Dr. Faisal Abou- Tarboush (Head of laboratories, equipment and services committee)** **Dr. Ashraf Mashaly (Program coordinator)** **Dr. Maha Daghestani (Deputy head of the department)**
8. Location of program if not on main campus **Main Campus (Dir'iya)**
9. Date of approval of program specification within the institution **The program was introduced in 1413-1414 H (1992-1993). Since then, the study plan has been updated several times. The last update was approved in 1430 H (2009 G).**
10. Date of most recent self-study (if any) **1429-1430 / 2008-2009**
11. Date of report **6/4/1431 H, 22/03/2010 G**
Note that a number of other documents giving general information about the program should be provided in addition to the periodic program report. See list at the end of this template.

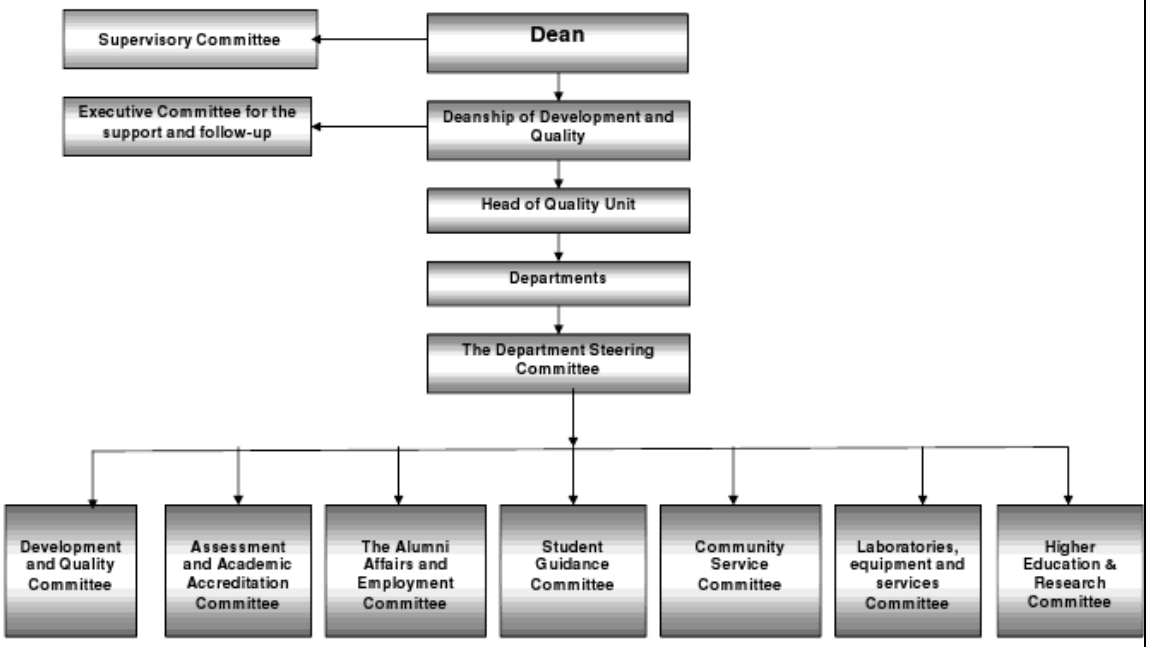
B. Self-Study Process

Provide a summary description of procedures followed and administrative arrangements for the self- study. Include an organization chart. Membership and terms of reference for committees and /or working parties should be attached.

The process of preparation of report on Mission and Objectives comprised of the following stages:

1. **Creation of the sub-committees and allocation of tasks of members.**
2. **Conducting two distinct sources of data and information to be used in the self-assessment study pertaining to Mission and Objectives, namely:**
   - **A) Assertions of management perspective and records from previous self-assessment study. This includes:**
     - **i) Review of the Final Report and support documents related to the previous Self Assessment Study conducted in 2008.**
     - **ii) Review of updated records and information on recent events, progress made, and current management perspective in relation to Mission and Objectives.**
   - **B) Evidence on staff perceptions:**
     - **i) Conducting new assertion-type surveys in order to ensure that (or measure the extent to which) statements and views contained in the department assessment report are shared/supported by various entities representing: Management, Faculty, Students, Technical-Support staff Administration, and Stakeholders.**
     - **ii) Target Sample (number of interviewees and survey recipients)**

Academic accreditation system for the Faculty of Science
1429/30 (2009)



A Committee concerned with Quality Management of the Program consists of seven groups under the supervision of a steering Committee. A schematic Diagram explaining this structure is drawn above. Each committee is responsible for one or more of the eleven quality standards presented in the Report on the periodic Program self study. Information in this report were formulated depending on annual Program report, course reports, questionnaires (students, graduates and employees), workshops and other official documents and books concerning King Saud University, College of Science and the Department of Zoology. The reports of these committees as well as required collected data have been submitted to the steering committee, which filled in the data and prepared this report. Finally, the report was considered and approved by the Department Council.

The department steering committee:

Members:

Prof. Dr. Ibrahem Al-Hazza (Chairman of the department)
Prof. Dr. Hmoud Al-Balawi (Vice dean of the college of Science)
Prof. Dr. Othman Al-Dokhi (Head of development and quality committee)
Prof. Dr. Faisal Abou- Tarboush (Head of laboratories, equipment and services committee)
Dr. Ashraf Mashaly (Program coordinator)
Dr. Maha Daghestani (Deputy head of the department)

Its tasks are:

a. To supervise the implementation of the action - plan of the Program.
b. To select a consultant, through coordination with the Vice - Deanship for

Development and Quality, to help in qualifying the Department for accreditation according to the standards of the accrediting body.

c. To prepare the mission, the vision and the objectives of the Program.
d. To complete all preparations of the Academic Accreditation in the Department according to the standards of the National Commission (NCAAA).
e. To follow up and coordinate with the Vice - Deanship for Development and Quality and to submit reports to it.
f. To prepare the visual display of the Department and the Directory of the Department and the Program.

Development and Quality Committee: (Standards: 3, 9)

Members:

Prof. Dr. Othman Abdullah Al-Dokhi
Porf. Dr. Khaled A. Al-Rasheid
Prof. Dr. Mohammed S. ALyousif
Dr. Saud A. Alarifi
Dr. Ashraf Mohamed Ahmed
Dr. Hesham Sharaf

Its tasks are:

a. To develop, administer and follow up the processes of Quality Control in the Department.
b. To follow up and select the benchmarks of the Department Program.
c. To supervise and follow up the schemes for development and future planning in the Department.
d. To follow up modern trends of teaching means, methodology and techniques.
e. To set training programs in each department for the development of teaching, research and technical skills.
f. To prepare, distribute and collect questionnaires from Bachelor′s Degree students concerning the extent of usefulness attained from the Training Program during study years, the extent of compatibility of the courses with practical life and their suggestions for the maximization of its usefulness. The Committee is to classify and prepare the results statistically.

1- Assessment and academic accreditation Committee (Standards: 1, 2)

Members:

Dr. Ashraf Mashaly
Prof. Dr. Mohammed S. Al-Khalifa
Prof .Dr. Abdul-Aziz A. Al-Khedhairy
Dr. Yaser AlNakady
Dr. Dr. Abdulaziz Alagaili
Dr. Nadia Al-Esa

Its tasks are:

1- Supervision, follow-up, preparation and collection (program specification, program report, course specification and course report).

2- Overseeing the selection of academic Counsel and follow-up and preparation of self-study report (SSR).
3- Supervise the preparation of a room inside the department devoted to assessment and academic accreditation and equipped with full program documentation.
4- Submit a periodic report on the degree of completion of requirements for academic accreditation.
5- Supervise the preparation of examination forms and answer models of the program courses.
6- Overseeing the availability of access to education and learning for students, in coordination with the committees concerned in the department.

3-Alumni Affairs and Employment Committee (Standard: 5)

Members:

Prof. Dr. Mohammed Khaled Al-Sadoon
Prof. Dr. Noory T. Al-Taib
Prof. Dr. Mansour I. Al-Mansour
Dr. Saleh A. Al-Qurashi
Dr. Omar Abd El-Kader
Dr. Abd El-Azeem Shaban Abd El-Baki

Its tasks are:

a. To collect and classify students′ personal data in the Department and means of communicating with them (Particularly Bachelor′s Degree students).
b. To collect and classify data pertaining to employers and means of communicating with them.
c. To set programs for strengthening the ties between the graduates and employing bodies.
d. To prepare, distribute and collect questionnaires pertaining to the extent of satisfaction of this group with their study program. The committee is to classify and prepare the results statistically upon which it offers advice to the Program.
e. To establish an effective mechanism to make available employment opportunities in their fields of specialization (e.g. Via the convening of employment meetings – Exploration of the employers′ views on the levels of the graduates from the College - Exploration of the employers′ views on the important courses for the Program and the Department.
f. To activate means of communication with the graduates (e.g. A Students′ Association of the Department of…..).
g. To explore the views of the already employed graduates pertaining to their evaluation of the extent of the usefulness of the relevant program and the contents of the courses they studied previously.

4- Student Guidance Committee (Standard: 4)

Members:

Prof. Dr. Ali S. Al-Akel
Prof. Dr. Nasser A. Al-Asgah
Dr. Saleh A. Kandeal

Dr. El-Sayed M. Younis
Dr. Saleh El-Wasel

Its tasks are:

a. To spread awareness of the importance of the Academic Accreditation of the Department Program via guidance meetings.
b. To maximize the concept of Academic Guidance and the role of the academic guide in directing the student towards his future educational planning.
c. To prepare, distribute and collect the necessary questionnaires for the Academic Accreditation pertaining to the Academic Guidance. The Committee is to analyze the results upon which it offers advice to the Program.
d. To deepen trust between students and Faculty members.
e. To receive and reply to the students′ suggestions and complaints.
f. To acquaint students with the support services and activities offered by the College and the University and to follow up the availability of study books and means of learning.

5- Community Service Committee (Standards: 8, 11)
Members:

Porf. Dr. Mohammed A. Al-Dakhil
Porf. Dr. Khaled A. Al-Rasheid
Porf. Dr. Mansour I. Al-Mansour
Dr. Saleh A. Kandeal

Its tasks are:

a. To collect and classify the projects executed by the Department and its members and the results of the contributions of these projects to the community service and the Development plans.
b. To encourage and develop the spirit of entrepreneurship in the students to maximize the return of the community service role through seminars and leaflets in coordination with the relevant committees in the Department.
c. To deepen communication between the College and the bodies in charge of the Development plans in the Kingdom of Saudi Arabia.
f. To set practical programs to enhance the relation between the Department and the local society and to pursue its implementation.

6- Laboratories, Equipment and Services Committee (Standards: 6, 7)
Members:

Porf. Dr. Faisal M. Abou-Tarboush
Porf. Dr. Ahmed R. Al-Himaidi
Dr. Saleh A. Al-Qurashi
Dr. Gamal Badr
Dr. Mohamed Abd El-Moneem

Its tasks are:

a. To ensure the availability of all laboratory equipments and students′ services specific to the Program.
b. To ensure the availability of maintenance plans for the laboratories, equipments and students′ services.
c. To submit a periodic report to the Chairman of the Department at the end of each academic year to perform the required repairs/modifications.
d. To supervise the availability of Security and Safety Procedures in the laboratories and lecture halls before teaching starts and to submit its report to the Chairman of the Department.
e. To spread awareness, prepare and distribute guiding publications to the students concerning Security and Safety Procedures pertaining to different risks (chemical – electrical – radioactive) at the beginning of the academic year.
g. To put up signs for Security and Safety Procedures along with emergency telephone numbers at a prominent place in each laboratory and lecture hall.

7. The Higher Studies and Research Committee: (Standards: 10)

Members:

Prof. Dr. Mohammed S. Al-Khalifa
Prof. Dr. Ibrahem Al-Hazza
Prof. Dr. Mohammed Khaled Al-Sadoon
Dr. Hossam Ebaid
Dr. Ashraf Mashaly
Dr. Mohamed Abd El-Moneem

Its tasks are:

a. To set a system for the observation, documentation and propagation of scientific research data and the participation in conferences.
b. To establish and update a data base for research papers and projects published by Faculty members in the Department.
c. To urge scientific publication in scientific journals of renowned world classification.
d. To announce a list of the research papers of Faculty members on the Department website and updating it annually.
e. To periodically evaluate the present higher studies courses as mandated by the permanent Committee of the Deputy – Deanship of Higher Studies in the College.
f. To undertake the tasks referred to it by the Committee of Higher Studies and Scientific Research in the College.
g. To register the present research projects and those already finalized in the Department and the announcement of their titles on the Department website and their return on the community service.
h. To list the names of the supervisors of the theses among the Faculty members and their numbers while observing the world ratios in this regard.

C. Mission and Goals of the Program

1. Mission of Program

To prepare highly qualified educators and technicians in life sciences, who can meet and respond to the needs of the employment market, through modern educational, research facilities and professional practice to serve the community.

2. Major Goals/Objectives for Development of the Program (This item refers to major goals and objectives for the development and improvement of the program, not the objectives for student learning outcomes) (Goals or objectives should be expressed in terms that are sufficiently specific for achievement to be monitored and assessed, and include timelines for achievement)

Zoology is central to our understanding of the world. Zoologists seek to discover the fundamental principles that underpin animal life focusing on the diversity, function and structure of animals and thus providing the scientific basis for our knowledge both of the creatures with whom we share this planet and of ourselves.

This Department strives to create an environment that enables teaching and research to attain high levels of excellence and in which its members can achieve their full potential.

1- **Prepare highly qualified educators and technicians using all possible means.**
2- **Develop a curriculum that is responsive to the needs of the employment market.**
3- **Prepare Pure and applied researches and publish them in well known and respected international journals.**
4- **To be well connected with the community to provide all possible educational programs that can solve problems and increase their awareness.**

We believe that these objectives are fully consistent with the missions of the King Saud University and of the College of Science, and meet the needs of our core constituencies.

3. Key Performance Indicators (List indicators and benchmarks that have been selected to provide evidence of the quality of the program or the achievement of goals/objectives for its development.)

1. **Indicator: Percentage of graduates qualified for pursuing higher education.**
2. **Indicator: number of graduates employed & time to be employed**
3. **Indicators: number of innovative research papers, number of research papers participated in international conferences, number of activity hosted, workshops & meetings**
4. **Indicators: conducting the practical conclusions and recommendations of dissertation carried out in Zoology to decision makers to get benefit and achieve high quality performance. Additionally, a reasonable number of Zoology staff members work a part-time as consultants and experts to better serve the community.**

D. Program Context

1. Significant Elements in the External Environment (including any important recent changes)

Summarize any significant features of the external environment including changes affecting the delivery of the program or the skills required for graduates in the period since the last periodic self study or since the program was introduced. (For example: local national or international economic developments, significant recent research in the field, technological changes affecting skill requirements, employment demand, government policies on higher education or on matters affecting the fields for which students are being prepared, national or international developments in professional practice in the field.)

1- **The annual expenditure on IT has been improved dramatically**
2- **Investing in grants is focusing on new areas of research in the field of cancer research, molecular biology and biotechnology.**
3- **Information technology; has been expanded for students, faculty and all employees at the department.**
4- **New research facilities and equipment continually added to the department.**

2. Changes in the Institution Affecting the Program.

Summarize any significant changes within the institution affecting the delivery of the program.

1. **There are plans to introduce a foundation year program. This will be done for about 50% of the students in each term so that there is a minimum disruption to the zoology program. However, some disruption to the normal zoology program is anticipated unintentionally.**
2. **There will be introduction of new QA arrangements. This will require the training of both academic and support staff, which is expected to affect the program to a certain extent.**
3. **New programs are being introduced to promote e-Learning, to complement face to face or conventional teaching. Again many of the academic and support staff will have to be trained to use the net and multi-media facilities for teaching, which is expected to affect the program in one way or another.**

3. Note any implications for changes that may be required in the mission and goals, content, or methods of delivery of the program as a result of changes noted under 1 and 2.

1. **New books and teaching materials on modern subjects like molecular biology and cancer and DNA research are being planned. The present staff will need to update their knowledge base and new staff with appropriate modern skills will also be appointed.**
2. **As e-Learning methods are being introduced, some of the present staff will be started to teach by electronic methods. Staff with experience in teaching by e-methods will also be appointed.**
3. **Opening communication channels with the people in charge to better serve the local community.**

E. Program Developments

1. Summary of changes made in the program in the period since the previous self-study or since the program was introduced. This should include such things as courses added or deleted or significant changes in their content, changes in approaches to teaching or student assessment, or program evaluation processes etc.

By the end of the academic year 1429-1430H (2008-2009 G) the following changes have been made:

1- The study plan has been updated:

i) Introducing several elective courses.

ii) Adding one compulsory course.

iii) Some textbooks have been changed or updated.

iv) Majority of classrooms have been equipped with smart boards.

v) Gradually switching over to English language as the medium of instruction.

2- Number of students in each group is specified to be no more than 25 students for program students

3- New teaching staff in recent disciplines of Zoology

4- Unified exam for all sections in each course (example: Z00-145)

5- Training course and workshops for the new staff (Deanship of skills development)

2. Apparent Program Completion Rate
(Show the number of students successfully completing the program in each of the last three years, and the number of students who started the program in each group------ years previously (Eg. If 120 students finished a four year program in 2009 and 200 students started it in 2005 and the apparent completion rate would be 60%)

Year	Number of Students Completing the Program	Number of Students who Commenced the Program in this Group XXXX Years Previously	Apparent Completion Rate *
2007	**29**	**51**	**56.8%**
2008	**40**	**56**	**71.4%**
2009	**17**	**70**	**24.2%**

* Apparent completion rate is the number of students completing the program as a percentage of the number in that student cohort commencing the program ------years previously.

3. Year to year progression rates. (Latest year)

Proportion of students who commenced each year level in the previous year who passed and continued to a higher year level the current year.

Commenced in Year 1 and continued to commence in Year 2	**65**	%
Commenced in Year 2 and continued to commence in Year 3	**82**	%
Commenced in Year 3 and continued to commence in Year 4	**91**	%

(Note: In programs where there are common first (or first and second) years the figures should include numbers in the early years for the combined group and a note included to explain what has been done)

Comment on trends in year to year progression rates (i.e. Increasing, decreasing, likely reasons for change (if any), significance of trends)

- **The majority of first rate students (especially male students) prefer to join professional programs such as Medicine, Engineering, Information Technology, Computer sciences and Business Administration instead of Zoology as their career.**
- **On the other hand, some students drop out and join some other programs. Moreover, Even though the admitted students fulfil the admission requirements, most of them do not have the ability to study Zoology.**
- **The low percent of transition to the second year is due to either absence from last exam, low presence percentage during the semester or not commencing the next year at all**

4. Comparison of planned and actual enrolments.

Year	Planned Enrolments	Actual Enrolments
1429-1430 H 2008-2009 G	**60**	**70**
1428-1429 H 2007-2008 G	**60**	**56**
1427-1428 H 2006-2007 G	**60**	**51**
1426-1427 H 2005-2006 G	**60**	**46**

Comment and explanation if there are significant differences between planned and actual numbers.

The best students prefer professional programs as their future careers.

F. Program Evaluation in Relation to Goals and Objectives for Development of the Program
(See items C 2 and C 3 above)
(Note: (i) Reports on these items should be expanded as necessary to include tables, charts or other appropriate forms of evidence, including trends and comparisons with past performance, or with other institutions where relevant.)
(ii) Wherever relevant, information should be provided on key performance indicators that relate to the matter discussed.

1. (State goal/objective)

Prepare highly qualified educators and technicians using all possible means.

Desired benchmark or standard of performance
100%

Result Achieved
90%

Comment
All graduates fulfil the requirements for teaching posts in public educational institutions as school teachers. As a technician in Governmental and Private sectors

2. (State goal/objective)

Develop a curriculum that is responsive to the needs of the employment market.

Desired benchmark or standard of performance
90%

Result Achieved
90%

Comment

1- **The contribution of some members of the faculty to work part-time as advisers some relevant government authorities.**
2- **The presence of three Research Chairs of different specialized research areas.**
3- **The presence of the Scientific Center for Excellence.**
4- **Presence of large well-organized research groups in different research areas working in collaboration with Nobel Laureates.**

3. (State goal/objective)

Prepare Pure and applied researches and publish them in well known and respected international journals.

Desired benchmark or standard of performance
90%

Result Achieved
80%

Comment

Staff members have a good relationship with many international scientists (e.g. Nobel laureate, Prof. Günter Blobel (Laboratory of Cell Biology, Howard Hughes Medical Institute, Rockefeller University, New York)) and participated in international conferences (e.g. British Renal Society Integrated Conference, Harrogate International Centre (2006). Harrogate, UK and 29th Göttingen Neurobiology Conference, Göttingen, Germany, 12 - 15. June 2003).

4. (State goal/objective)

To be well connected with the community to provide all possible educational programs that can solve problems and increase their awareness.

Desired benchmark or standard of performance
80%

Result Achieved
80%

Comment

1- **Organization of public lectures and publishing some articles in newspapers and magazines in Saudi Arabia.**
2- **Protection of the environment in Saudi Arabia and participation in the protection of animals extinct through counseling, writing books, make TV programs, the membership of environmental protection associations.**
3- **Cooperation with some satellite channels to oversee the programs.**
4- **Participating in the creation of the National Museum of Natural History.**
5- **Consultation of scientific and medical aspects in some ministries and hospitals.**
6- **Participating in the rehabilitation of students and the Ministry of Education in the junior Olympic competition.**
7- **Participation in exhibitions and festivals to display the types of animals and to promote a culture of awareness and attention to animal.**
8- **The department has a good relation with many local universities (e.g. Hail University), research center like (King Abdulaziz City for Science and Technology. There is also some sort of special connection with the private sector (e.g. Sabic) for supporting many scientific projects financially.**

(Continue as required for additional goals/objectives)

G. Evaluation in Relation to Quality Standards (Refer to *Standards for Quality Assurance and Accreditation of Higher Education Programs)*

Reports should be provided under each of the quality standards set out in the *Standards for Quality Assurance and Accreditation of Higher Education Programs.*

- To ensure a full understanding of the report by external reviewers unfamiliar with the institution or this program (either local or international), a brief explanatory note should be included giving background information or explanations of processes relevant to the standard concerned.

- The reports should summarize the process followed in investigating performance in relation to each standard. This should be explained in sufficient detail for an external reviewer to form an opinion on the appropriateness and adequacy of the investigation.

- **A vital element in these reports is to provide specific data to show trends, support conclusions, and make appropriate comparisons with other institutions selected to provide benchmarks for evaluation of performance.** This data can include key performance indicators, other statistical information, figures derived from survey results, student results (with standards verified), numbers of refereed publications or citations, usage rates of services or anything also that provides clear evidence about the matter being evaluated. A simple assertion that something is good, or needs improvement, is not sufficient without evidence to back it up. Quantitative data can be included in summary form or provided in attachments and referred to in the text. If priorities for improvement have been determined or initiatives to deal with areas of concern have already undertaken this should be noted and any initial results reported.

- The report should deal with all locations where the program is offered and the description of procedures should include information about how evaluations were conducted in different locations. This is particularly important if there are different sections for male and female students. The procedures followed in each section should be explained as well as the processes for planning the evaluation and coordination of the final report. If there are significant differences between analyses or evaluations of delivery of the program in different locations (ie. either sections for male and female students or delivery in different locations) these should be noted and comments made about reasons for the differences and any response that should be made because of them. This applies to all the standards, not only to Standard 2 which includes a sub-section dealing with relationships between sections for male and female students.

- It is not necessary to provide a detailed report on every item in every sub section of each standard . The completed self evaluation scales will provide that more comprehensive coverage. However the report must include <u>at least</u>: (a) Items where performance is poor or significantly different in different sections. (b) Items where performance is considered very good and evidence of strong performance can be provided. (c) Items that have been selected for special consideration as a result of strategic planning or previous evaluations. (d) Items that are particularly significant for evaluation of quality such as verification of standards of student achievement, use of appropriate indicators and benchmarks, performance on KPI's in comparisons with selected benchmarks.

Attach completed rating self evaluation scales from the *Standards for Quality Assurance and Accreditation of Higher Education Programs.*

Standard 1. Mission and Objectives (Overall Rating___**5**_____ Stars)

The mission of the program must be consistent with that for the institution and apply that mission to the particular goals and requirements of the program concerned. It must clearly and appropriately define the program's principal purposes and priorities and be influential in guiding planning and action.

Explanatory note about development and use of the mission.

The mission, goals, and objectives were developed and modified in an attempt to cope with the various political, economical, social, and cultural changes that have affected the Kingdom and KSU.

Appropriateness of the mission

- **To evaluate this substandard, it is important to consider the three aspects indicated in Program's mission: education, research, and community service.**
- **Data gathered from questionnaires and interviews indicated that the mission statement met Saudi Arabia culture and Islamic religion as it adapts KSU five main values supporting the bases of the mission statement.**
- **Since Saudi Arabian government is encouraging more open communication channels with the outside world in all aspects, this is including education, economy, and politics. This led the team working in developing the strategy to take in mined the globally-oriented cultural changes when designing the mission. Therefore, it reflected the country's drive towards a knowledge-based economy.**

The Department of Zoology promotes discovery and learning at all levels of biological organization (molecular, cellular, organismal, population, community, and ecosystem). Our integrated focus reflects the importance of strong disciplinary and interdisciplinary approaches in research and teaching. We strive for excellence and synergy in our coordinated programs of teaching, research, and service. Recognizing the essential roles of science and biology in citizens life today and tomorrow, we emphasize biological literacy in our teaching and outreach programs. The Mission and Objectives of the B.Sc. Zoology Program were discussed in the Department council, modified and agreed by the Department Council.

Description of process for investigation and preparation of report on this standard.

The mission statement is being given wide publicity for staff and students. They are made aware of the mission statement and the commitment of the department to achieve the mission statement. Staff is encouraged to give their input in implementing mission statement and help in making the mission statement a success.

Evaluation of Quality of Mission and Objectives. Refer to evidence obtained and provide a report including a summary of particular strengths, areas requiring improvement, and priorities for action.

It is evident that the mission statement has contributed to the development of Program's goals.

1. **The use of Edugate for registration (for students), for posting results, attendance (for staff members, and internal mail for administration and staff) reflects the implementation of technology at the University.**
2. **The introduction of "smart classes", smart boards, digital labs, Blackboard and training courses given to teachers and students.**
3. **Skills development to reinforce the idea of creative thinking which aligns with creative teaching that requires unconventional methods and tools to help student to achieve learning outcomes. This is why the University has created the Deanship for Skills Development in which faculty and staff skills are continuously being upgraded through:**

- **Periodic workshops and seminars offered by the Deanship of Skills Development in teaching methods, use of new teaching technologies, self development and managerial skills. The training courses are offered on and off campus and inside and outside Saudi Arabia.**
- **Staff, researchers and technicians requesting to attend national or international specialized events have been offered and encouraged especially within the last couple of years.**
- **The Research Center presents a series of workshops on research skills for staff members as well as postgraduate students.**

4. **The University is granting generous support for faculty members using internet in their teaching in order to spread the culture of technology among all members.**
5. **A new multidisciplinary central laboratory is being prepared in the new female center in Dir'iya containing the latest technologies.**
6. **To enrich KSU's research productivity:**

- **The Support Unit for Demonstrators and Lecturers (SUDL) to train them in the skills they need to pursue their postgraduate studies abroad.**
- **The International Joint Supervision Program (IJSP) where demonstrates and lecturers who are unable to travel abroad for long periods of time can be jointly supervised by faculty from renown international universities and qualified KSU faculty.**
- **Three Research Chairs program in which local and international scholars can join efforts creating more educational and training opportunities for graduate students as well as serving the public.**

7. **In relation to Community Services, Zoology department encourages both staff and students to participate in its Annual University and Society event which addresses issues important for society and its development; these issues could be addressed by faculty members, each in his/her specialty, or by representatives from society such as charitable organizations. It also hosts the Annual Career Day event to offer both the students and head hunters the**

opportunity to meet. Finally, many faculty members are volunteers in external societies.

Strengths

1- **The mission statement is consistent with the mission statements of the College and the University.**
2- **The goals and objectives of the program are compatible with the mission statement.**
3- **The mission statement was discussed and approved in the Department council.**
4- **The mission statement is being given wide publicity among staff by circulating it through departmental handbook and by putting on departmental website.**
5- **The activities in the Program including course spec, course run, field experience and role of teaching and other staff reflects the stated Program Mission and Objectives**

Areas requiring improvement

1- **The updated version of Mission and Objectives is going to be explained to the stakeholders and their opinion about it will be considered**
2- **Seminars are planned with teaching and other staff so that the Mission and Objectives will be supported with their staff rather than their opinion**
3- **The utilization of undergraduate and graduate students in promoting BOT-CS/KSU Vision, Mission and Objectives**
4- **The participation of KSU's alumni as links with the job market so as to better prepare students for workforce in Botany fields.**

Priorities for action

1- **Coordinate with external community organizations to increase the society involvement in the program Mission implementation and strategic plan.**
2- **The research capabilities of teaching staff are being improved by making available state of the art research equipments and providing them with the qualified supporting staff.**

Standard 2. Program Administration (Overall Rating____**4**_____ Stars)

Program administration must provide effective leadership and reflect an appropriate balance between accountability to senior management and the governing board of the institution within which the program is offered, and flexibility to meet the specific requirements of the program concerned. Planning processes must involve stakeholders (eg. students, professional bodies, industry representatives, teaching staff) in establishing goals and objectives and reviewing and responding to results achieved. If a program is offered in sections for male and female students resources for the program must be comparable in both sections, there must be effective communication between them, and full involvement in planning and decision making processes. The quality of delivery of courses and the program as a whole must be regularly monitored with adjustments made promptly in response to this feedback and to developments in the external environment affecting the program.

Explanatory note about program administration arrangements.

Policies and regulations have been adopted to lead the activities of the University effectively within a clearly defined governance structure. Each academic Department is considered a single academic unit or a Program in its respective College; hence its respective Department council (containing both female and male faculty) and chairperson are responsible for its academic affairs.

- **Periodic Meeting of the Department Council that includes the Department Manager and the Teaching Staff.**
- **The Department council is responsible for determination of the qualifications of the teaching and other staff needed**
- **The Department council is responsible for determination of the number of students conducting the Program in limits determined by the University and College Management.**
- **Management of the academic process and participation of the teaching and other staff in the academic and other activities are managed by the Department management**
- **Periodic Meeting of the College Council that includes the College Dean, College Vice-Deans of Academic Affairs, Administrative Affairs, Development and Quality and Postgraduate Affairs, and Head of the Academic Departments.**
- **The governance structure is supplemented by additional mechanisms designed to facilitate communication among faculty members and administrators at the sites and assure continuity and consistency of the undergraduate curricula across the sites.**
- **Other integrating mechanisms include regular meetings of the academic associate Deans, the student affairs Deans and the Academic Council of Deans.**

Relationship Between Sections for Male and Female Students

- **The female staffs are a part of the governance structure at all KSU levels. The female staffs are represented in all department councils' meetings. Some are**

involved in major department plans such as strategic plan, postgraduate programs, appointment of Teaching Assistant and joint supervision while the majority is engaged in procedures such as voting, course requirement, course design and specification, and revision of some rules and regulations. Both male and female sections are represented in the membership of committees especially in curriculum development and accreditation committees.

- **There was strong evidence that resources, facilities and services provided were incomparable between male and female centers. A tremendous improvement has occurred since the last KSU self-study, providing the departments with equipment and facilities according to their needs assessment, in addition to increasing the budget of the female center.**
- **Deficiency of resources and aging infrastructure in the female centers could be overcome as soon as the University finishes the construction of the new female center with appropriate buildings for teaching, research and recreation.**

Description of process for investigation and preparation of report on this standard.

- **Usually the program is managed and revised by a well qualified senior member of staff who usually has a good experience in administration. He is usually supported by different assigned committees which are dealing with different matters of administration (e.g. teaching load committee, promotion committee).**
- **Most of the members of the Assessment and Academic Accreditation Committee, involved in evaluating this standard, are members of some supporting committees and departmental council and they are familiar with the program administration. Their experience together with that of senior faculty members, former chairwoman and former chairmen are used in the evaluation process.**
- **Moreover, a survey form has been prepared and distributed among students and faculty members to investigate the quality of the program administration.**

Evaluation of quality of program administration. Refer to evidence obtained about the subsections of the standard and provide a report including a summary of particular strengths, areas requiring improvement, and priorities for action

Strength:

1- **The responsibilities of chairman are clearly defined in position descriptions**
2- **The Chairman is usually supported by different assigned committees which are dealing with different matters of administration (e.g. teaching load committee, distinguished students committee, etc).**
3- **Regular feedback is given on performance of teaching and other staff by the head of the Department**
4- **Both male and female academic staff participates in Departmental meetings and take decisions concerning all aspects of the program.**

5- **Decisions concerning the program aspects are first taken in the department council and subsequently communicated through the chairman to the college administration (Dean, Vice dean, etc).**
6- **Course registration and students grades submission are accomplished electronically through the edugate system.**
7- **Plans for development of the Program have a particular focus on intended learning outcomes for students with course content and teaching and assessment strategies that reflect both the background of students and theory and research on different kinds of learning.**
8- **Representing female faculty at Department' Council, enabling them to share in decision-making and voting.**

Areas requiring improvement:

1- **The administrative supporting staff is not enough. The number of the supporting staff should be proportional to the duties of the department and its size.**
2- **Involving major stakeholders in program planning and its future development.**
3- **Planning needs to incorporate priorities for development and appropriate sequencing of action to produce the most effective short-term and long term-results.**
4- **Plans should take full and realistic account of aspects of the external environment affecting demand for graduates and skills required by them.**
5- **Implementation of plans needs to be more obviously monitored in relation to short term and long term targets.**

Priorities for action:

1- **Requesting more positions for administrative staff.**
2- **Consulting employers and graduates in program planning and its development periodically.**
3- **Planning to cope with risks and establishing risk management system.**

Standard 3. Management of Program Quality Assurance (Overall Rating___**4**____ Stars)

Teaching and other staff involved in the program must be committed to improving both their own performance and the quality of the program as a whole. Regular evaluations of quality must be undertaken within each course based on valid evidence and appropriate benchmarks, and plans for improvement made and implemented. Central importance must be attached to student learning outcomes with each course contributing to the achievement of overall program objectives.

Explanatory note. Describe and comment on the quality assurance processes used in the program, particularly relating to indicators and benchmarks of performance and verification of standards.

- **The department introduces quality assurance processes to deal with all aspects of the program: Courses, Faculty, Students, Graduates, and Employers.**
- **Forms have been designed to conduct surveys about these aspects. The results of these surveys will be used to monitor the quality of the program and its future developments.**
- **The development and quality committee monitors implementation of the eleven standards through certain indicators. Such indicators include questionnaires to the satisfaction of students, graduates and staff.**

Description of process for investigation and preparation of report on this standard.

The department has appointed a development and quality committee to be responsible about program quality assurance. Members of the committee have been trained by attending courses and seminars on quality assurance and they use internationally accepted methods for quality assurance. The committee looks at whether improvements are being made by the implementation of the program by checking at earlier and present records.

Evaluation of quality of management of program quality assurance. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action

Strengths:

- **Courses contents and references used are comparable to international standards.**
- **Teaching staff graduated from highly international recognized universities and they are highly experienced both theoretically and practically.**
- **Laboratories are equipped with the appropriate and relevant instruments.**
- **Renew the department equipment when needed.**
- **Reduce number of students in classes especially in practical sessions.**
- **Introducing e-learning.**
- **There is a coordinator for multi section courses**
- **Unified exams for multi section courses**
- **Submitting a course report for each group at the end of each semester.**
- **Conducting surveys among students, graduates and employers dealing with the quality of**

the courses and the program.
- **Submitting an annual program report**
- **Conducting a chain of workshops (4 workshops) for new faculty members by the Deanship of Skills Development.**

Areas requiring improvement:

1- Increasing number of academic and supporting staff.
2- Decreasing the teaching hours of the staff to 40% of the present state (situation) for more time to be spent in Research and self skills improvement.
3- Effective participation of staff other than teaching staff in Quality improvement
4- Opinion of independent advice concerning Standards evaluation needs to be regular
5- Renew the Department equipments.
6- Encourage innovation, appreciation of achievement and evaluation
7-Evaluation and planning for quality improvement should be integrated into normal administrative processes

Priorities for action:

1- **To ensure that the final set of KPIs and benchmarks for the University, academic and administrative units and Departments are finalized.**
2- **To ensure the use of the statistics and performance data for institutional research and produce proactive action plans based on the performance analysis**
3- **Purchase more equipments and biotechnology core facility**

Standard 4. Learning and Teaching. (Overall Rating____**4**_____ Stars)

Student learning outcomes must be clearly specified, consistent with the National Qualifications Framework and requirements for employment or professional practice. Standards of learning must be assessed and verified through appropriate processes and benchmarked against demanding and relevant external reference points. Teaching staff must be appropriately qualified and experienced for their particular teaching responsibilities, use teaching strategies suitable for different kinds of learning outcomes and participate in activities to improve their teaching effectiveness. Teaching quality and the effectiveness of programs must be evaluated through student assessments and graduate and employer surveys with evidence from these sources used as a basis for plans for improvement.

The standard for learning and teaching is the most important consideration in a program self-study. Information provided should include indicators used as evidence of performance and priorities and strategies for improvement. Reference should be made to the results of processes followed. For example if steps were taken to check the standards of student achievement against appropriate external benchmarks, what was done, and what conclusions were reached?
Information provided in reports of surveys or special investigations or in annual program reports need not be repeated but should be summarized and information given about where more detailed information can be seen.

Explanatory notes about processes followed or organizational arrangements relating to the following sections should be included in each section below.

Through the program schedule of the Deanship of skills development within the project of developing creativity and excellence: The dean would work to achieve in particular its following objectives:

1. Preparation and holding of courses and training programs, workshops, seminars, lectures and panel discussions for faculty members and lecturers and teaching assistants in the areas of professional and educational.

2. Provide advice to faculty members in the areas of education, learning and research.

3. Preparation and delivery of courses and lectures to students and university students to support their realizable and life-skills training that enable them to engage in university life successfully.
4. Organization of meetings for faculty members to familiarize them with new regulations and directives in force at the university.

5. Bring specialized educational staff to assist faculty members in the development of the educational process at the university.

6. Cooperation and communication with similar centers at home and abroad to exchange experiences.

7. Cooperation with international bodies with competence in the skills development and the achievement of quality in all academic programs and academic advise and administrative procedures that serve the educational process.

8. The use of modern technical means such as the Internet and e-learning.

9. Preparation and publication of brochures and guides contribute to the development of skills of faculty members.

Description of process for investigation and preparation of report on the standard for learning and teaching. (Additional information can be provided in the sub-sections below if necessary.)

Four Committees in the Department were concerned with the evaluation of this standard (Learning and Teaching) in Department; Assessment and Academic Accreditation Committee, Student guidance Committee, Laboratories, Equipment and Services Committee and the Alumni affairs and Employment Committee. These four Committees reviewed the Mission, Vision and Objectives of the Program, Program specs, made several meetings with each other, visits to the labs and classrooms, meetings with the students, Alumni, interviews with higher academic stuff, and the Committee of the study plan in the Department, questionnaires with the students, Alumni and some stakeholders, then made their evaluation of the standards.

Subsection 4.1 Student Learning Outcomes (Overall Rating____**3**____ Stars)

Describe processes for ensuring the appropriateness and adequacy of intended student learning outcomes from the program. Include action taken to ensure consistency of the intended student learning outcomes with professional or occupational employment requirements as indicated by expert advice or requirements of professional bodies or relevant accrediting agencies with the National Qualifications Framework. The report should include the results of the processes, not just conclusions about whether processes were used. (Note that evidence on the standards of student achievement of these intended learning outcomes should be considered in sub-section 4.4 below)

Course Background and Objectives
Course Policies (including : Course Description, Course Format, and Course Assessment and Grading

Learning Outcomes: By the end of each course, **all** students will have demonstrated their ability to:

- Acquire data and information on current scientific issues regarding the subject (**knowledge**).
- Classify the strength of scientific inference regarding threats to environment and solutions (**comprehension**).
- Apply skills in verbal and written communication in the context of scientific debate (**application**).
- Analyse both sides of scientific debates regarding threats to marine biodiversity and solutions (**analysis**).
- Arrange and summarize data and information gathered in library research in a logical manner (**synthesis**).
- Appraise the pros and cons in scientific debates regarding threats to marine biodiversity and solutions (**evaluation**).

Additionally, **undergraduate students** have demonstrated their ability to participate in scientific debates and summarize both sides of scientific arguments, and **graduate students** have demonstrated their ability to introduce, lead, and summarize scientific debates.

Evaluation of intended student learning outcomes. Refer to evidence about the appropriateness and adequacy of the intended learning outcomes for students in this program and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Student Grades

Student grades provide an excellent and unbiased measure of satisfaction of SLOs. Various components of course grades should be taken into consideration in this process, including grades of homework assignments, class projects, midterm exams, quizzes, and final exams. Analyzing student grades in each course can give insight into the degree of achievement of SLOs, and reveal any actions needed for course improvement or adjustment.

Student Course Evaluation Surveys

Each course goes through student evaluation at the end of each semester through a course evaluation
survey, which measures teaching performance from the students' perspective. The survey was conducted in the first and second semesters of 2009. Statistical results show significant improvement in teaching performance (see Fig. 1).

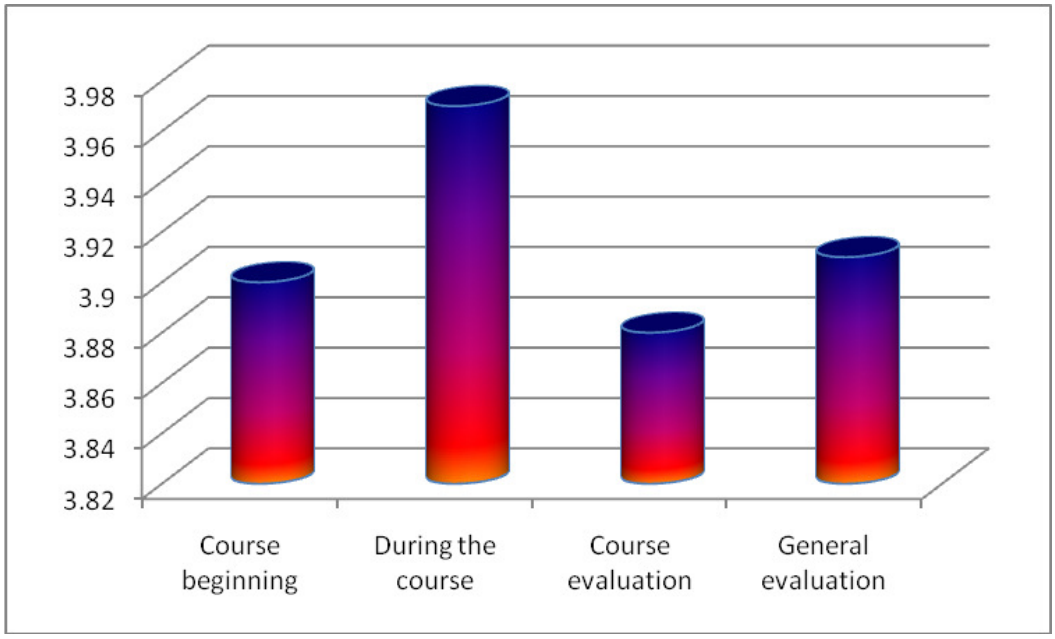


Figure 1. The overall satisfaction expressed by students in the last statement of the survey.

Student Experience Survey

This survey is designed to provide faculty members as well as administration with information about student study experience. It is a new assessment mechanism that is being currently used by most programs at KSU. The survey was conducted in October 2009, and distributed to 150 students. Overall results as shown in Figure (2).

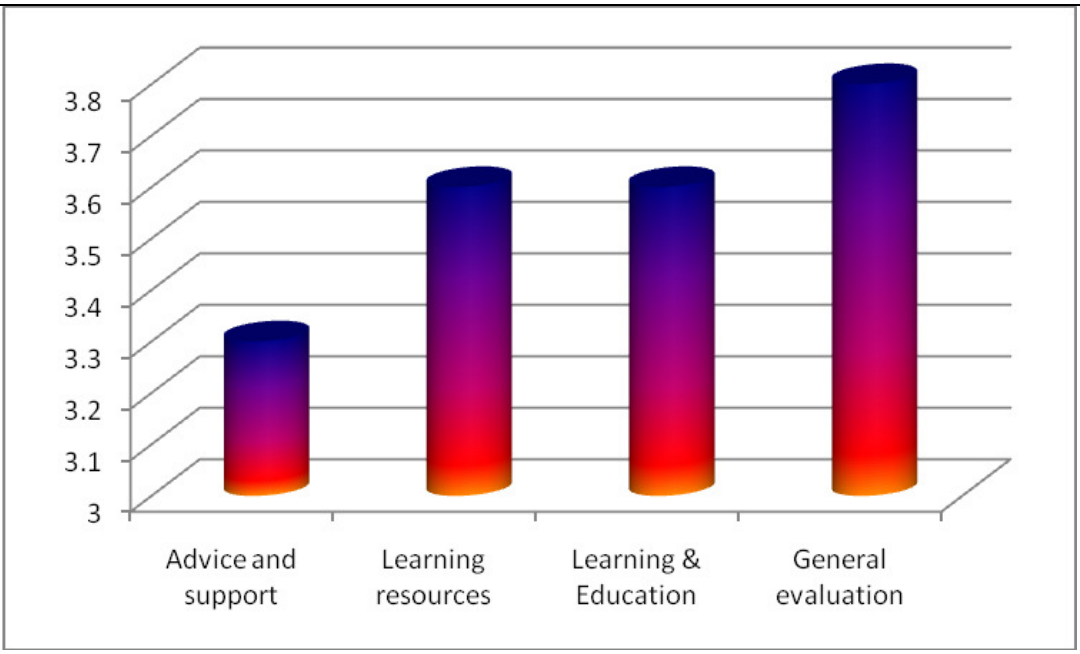


Figure 2. The overall satisfaction expressed by students in the last statement of the survey.

Graduate student survey

The graduate student survey which was conducted at the end of the second semester of 2008/09, and delivered to nearly 15 graduates, showed that graduates "as a whole" had expressed their satisfactions and agreements on most items in the survey with a mean between 3.72 and 4.24. In addition, about 90% of graduates satisfied with overall staff members' performance.

This result provides valuable information on the effectiveness of the program in achieving its outcomes. Furthermore, it can reflect the positive and negative aspects of the student's achievements in the program. Analyzing the results of the survey allow for appropriate actions to be taken to improve the program. (In progress)

Employer Survey

The employer survey, which was conducted on 2009 and includes more than 10 public and private organizations throughout KSA. The aim was to measure their overall satisfaction toward program graduates with respect to program outcomes and program educational objectives. Results indicated that the majority of respondents about 83.6% agreed that program graduates deals with high professional ethics, nearly 75.3% believed that graduate has the necessary knowledge and skills necessary to do their job, and almost 76.7% of respondents were generally satisfied with program graduates. (In progress)

Strengths:

- **High percentages of the graduates are being employed in teaching and in biology applications.**

Areas requiring improvement:

- **Contact methods with the graduated students**

Priorities for action:

- **Vocational guidance should be provided. Therefore, a committee should be formed for this purpose.**
- **Keeping track of the students when they leave the university. Therefore, a center should be created for this purpose to follow up the graduat progress and get acquainted with needs of labor market.**

Subsection 4.2 Program Development Processes (Overall Rating ____**4**____ Stars)

Describe processes followed for developing the program and implementing changes that might be needed.

Committees (Student guidance committee, development and quality committee, the alumni affairs and employment committee) are in placed to evaluate and monitor the development of the program. On the basis of the course reports with the statistical data, monitoring the course reports prepared every semester, monitoring the annual program report, conducting surveys of opinions of students about a sample of courses every semester and analysing the conducted surveys. The committee makes changes to develop the course for enhancing curriculum delivery.

Evaluation of program development processes. Refer to evidence and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **Appointing new staff members especially in modern disciplines of Zoology.**
- **Using recent books as for course references.**
- **Updating the study plan.**
- **Gradually switching over to English as a language of instruction**
- **Enhancing the use of IT in teaching process**

Areas requiring improvement:

- **Urging staff to update their knowledge.**

Priorities for action:

- **Holding training workshops for staff to be familiar with self learning and writing.**

Subsection 4.3 Program Evaluation and Review Processes (Overall Rating ____**3**____ Stars)

Describe processes followed for program evaluation and review.

• For the time being, evaluation and reviewing are being done by self-assessment and committees (Development and quality committee & laboratories, equipment and services committee).
• The annual program reports will be prepared in the future to demonstrate the effectiveness

of the program strategies. Also the evaluation takes into consideration semester surveys of opinions of students about a sample of courses

Evaluation of program evaluation and review processes. Refer to evidence and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.
In addition to providing information about the quality of these processes, this section should include conclusions were reached about the quality of the program as a result of using those processes. Reference should be made to data on indicators and survey results as appropriate.
Program Evaluation is a mandatory tool to help Zoology department learn about the quality of the programs that the department offers, to know whether they meet the needs of the students and those of the community at large. It is a systematic approach that assists in discovering what a program student thinks of the learning and teaching process, their progress, and assessment results. Moreover, it assesses the effectiveness and efficiency of the courses, identifying what measures are required to improve them.

1. **The Program Review process is a very broad review aimed at providing information at a strategic level.**
2. **Program Evaluation Survey is another instrument that is being utilized in order to obtain specific data about programs and whether they meet their learning objectives, exploring student progress and assessment results and implementing systematic improvement processes.**
3. **Course Evaluation Survey focus on course development.**
4. **The Student Experience Survey has a main objective of determining what graduates think of the coursework program that they have completed, including their attitudes towards the skills they have acquired, and the quality of teaching provided to them during their program.**

Program evaluation and review processes are working effectively under the current situation. However, an external independent evaluator can be appointed for judging these processes.

Strengths:

- **Reviewing processes are comparable to applied international standards. As well as the standard criteria used for evaluating the program.**
- **Quality indicators that include learning outcome measures are identified and used for all courses and Programs are reported on annually, and records of them are retained.**
- **Quality indicators include student completion rates in all courses and the Program as a whole.**
- **Course report and annual Program report are achieved in regular manner**

Areas requiring improvement:

- **Slower response of some staff in filling out course reports and delivering the exams and sample of the student answers.**
- **Regular Program and course reports showed some shortages in KPIs used to evaluate**

teaching skills. Workshops are planned to be held with teaching staff and some educational experts so that effective indicators can be established.

Priorities for action:

- **A prompt feedback and quick response from the teaching staff must be taken in consideration to allow enough time for preparing and reviewing the annual report.**
- **Workshops are planned to be held with teaching staff and some educational experts so that effective indicators fur teaching skills and teaching strategies effeteness can be established.**

Subsection 4.4 Student Assessment (Overall Rating ___**4**___Stars)

Describe strategies for student assessment in the program and the processes used to verify standards of student achievement.

- **At the beginning of each semester, each staff member submits course syllabus comprising information about course learning objectives, prerequisites, description, content, assignments, textbook, readings, evaluation procedures, teaching methods, grading standard, faculty's office hours. This information will be given to students and go to faculty member's course file. At the end of the semester, staff members submit the grades and copies of their quizzes and exams to department chairs.**
- **All teaching staff-members are required to fill in course reports at the end of each semester for all courses they have taught. The report includes course details, showing the latest updating of its different entries. It should be accompanied with documents such as course outline, samples of examination papers, other assignment and/or term papers**

Strategic plan for student assessment:

1- Maintain a rigorous, broad-based major in Zoology that provides a compelling learning experience.
2- Emphasize general purpose problem solving and analytical abilities that have broad applicability and so foster an ability to adapt to the changing world.
3- Emphasize the fundamental building blocks in biology that constitute themes of unification and integration.
4- Pursue outstanding graduate training that includes skillful interdisciplinary communication.
5- Devise and maintain a non-major instructional program that captures the attention of students and enables them to understand a wide range of contemporary biomedical, biological, medical, and environmental issues.

The processes used to verify standards of student achievement

- **Students are regularly assessed not only in the classroom, but also by regular home works fitting some courses.**
- **Quizzes**
- **Midterm exams.**

- **Laboratory exams.**
- **Monthly exams.**
- **Reports.**

Evaluation of student assessment processes. Refer to evidence about effectiveness of student assessment processes. In addition to evaluation of the processes followed this sub-section should also include evidence about the standards of student learning outcomes achieved in comparison with appropriate benchmarks. The report on this sub-section should include a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **Staff members are making regular assessment for students and helping those students who are not very strong.**
- **Staff members receive students in their offices during office hours to answer their of questions and queries about courses.**
- **Unified exams for multi-group courses.**

Areas requiring improvement:

- **Following up students for attending all classes and increasing their awareness within classes.**
- **Effective procedures need to be established to ensure that work submitted by students is actually done by the students concerned.**
- **There is no comparison of standards with those at other local and global institutions.**

Priorities for action:

- **Obtained detailed information about the standards of student learning outcomes from the chosen benchmark department.**
- **Each staff member should stick to the time of his lecture, specially the ending time to allow student few minute break and transfer from one hall to another.**

Subsection 4.5 Educational Assistance for Students (Overall Rating ___**4**____ Stars)

Provide a summary of what assistance is provided in relation to the matters listed in this sub-section of the standard (eg. orientation programs, office hours, identification and assistance for students in need, referrals to support services etc.).

- **Staff members have assigned office hours.**
- **Student guidance committee**
- **Department hand book**
- **Giving assistance to students to register their courses in the proper time via electronic gate.**
- **Deanship of academic affairs and through printed materials.**
- **The appropriateness and effectiveness of students assistance was investigated by**

conducting student surveys.

Academic Counseling unit aimed to:

1. Approve the student's academic program of study.
2. Provide accurate and consistent information.
3. Clarify program requirements, policies and procedures.
4. Assist the student in identifying appropriate institutional resources.
5. Facilitate relationships between the student and other individuals on campus who may provide assistance.
6. Evaluate and realize educational and career options.
7. Uphold the academic standards of the institution.

Evaluation of processes for educational assistance for students. Refer to evidence about the appropriateness and effectiveness of processes for assistance of students in this program. (eg. Is the assistance what is needed for these students, is it actually provided as planned, and how is it evaluated by students). The report should include a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

1- A weekly office schedule is displayed on each faculty member's office and a total of 10 hours are specified for the students to provide them extra assistance and help in solving their academic problems.
2- Students receive consultation and advice through the Student Guidance Committee.
3- New students receive information about the college of science programs, facilities, duties and rights through a one day program prepared by the deputy of academic affairs in the college.
4- General information is available to students through college handbook, departmental handbook and on the website of the department.
5- A very power electronic system is in place within the Program for monitoring and coordinating student workload.
6- The progress of individual students is monitored and assistance and/or counselling provided to those facing difficulties.
7- Year to year progression rates and Program completion rates are monitored, and action taken to help any categories or types of students needing help through the student guidance agency in the Department, academic affairs in the College and University.
8- Adequate facilities are available for private study, including a central library with an accession for each student to use it in place or electronic through the web gate of the university, an electronic database is available for each student through the web gate of the university. In addition to that, an e-mail, web accession is available for every student; a self e-learning class is available.

Areas requiring improvement:

- **Consciousness of students to stick to study plan during registration of courses.**
- **The English language skills of the student is very poor according to the standard level needed for the courses taught in English**

Priorities for action:

- **It is preferable to have an academic supervisor for students enrolled in Zoology to organize and follow up the student status individually.**
- **A Program to ensure adequate skills in English language is needed to be established before students begin the Program, with standards benchmarked against good quality Saudi Arabian and international student requirements in English speaking countries.**

Subsection 4.6 Quality of Teaching (Overall Rating ____**4**_____ Stars)

Information should be provided about the planning of teaching strategies to develop the intended learning outcomes of the program, for evaluating quality of teaching, and processes for preparation and consideration of course and program reports. This section should include a table indicating the proportion of teaching staff whose teaching is regularly assessed in student surveys (or by other mechanisms).

- **Teaching strategies for developing the intended learning outcomes of the program are through: Lectures, Tutorial classes, discussions in lectures and tutorial classes, individual and teamwork assignments and independent reading.**
- **At the start of the semester the course content is distributed to the students and in the first lecture the teaching strategy, assessment process etc are appointed to the students.**
- **Two Committees we concerned with this subscale; Assessment and Academic Accreditation Committee, Student guidance Committee. They reviewed the Teaching and learning strategies in the Program and course specifications, the student scores during the semester work and the final exam and questionnaires for teaching evaluations through student survey, and workshops established with students. they also considered the reports of class & labs prepared by Laboratories, equipments &services committee**

Ratio of students to staff members.

	Student number	Staff number	Average
First Semester	**519**	**40**	**12.98**
Second Semester	**436**	**54**	**8.07**
Total average	**955**	**54**	**17.69**

- Also staff members work load is attached.

Evaluation of quality of teaching. Refer to evidence about teaching quality and provide a report including a summary of strengths, areas requiring improvement, and priorities for action. The report should include a summary of data from student surveys used for course and overall program evaluations, with information provided about sample size and response rates on those surveys. Comparative data from other similar surveys should be included.

Strengths:

- **At the end of each semester a course report is prepared for every group for all taught courses.**
- **A program report is prepared annually.**
- **Quality of teaching for all teaching staff is assessed by students at the end of the semester through the edugate system. Results of these assessments are available for staff members through the same system.**
- **Student surveys for a sample of courses and overall program evaluations have been taken in the department.**
- **Effective orientation and training programs are provided for new, short term and part-time teaching staff.**
- **Strategies of teaching and assessment set out in program and course specifications are consistently followed by teaching staff.**
- **Students are fully informed about course requirements in advance through course descriptions that include knowledge and skills to be developed, work requirements and assessment processes.**
- **Attendance requirements are made clear to students and compliance with these requirements is monitored and enforced**

Areas requiring improvement:

- **The system for evaluation of teaching effectiveness in all courses is still depending mainly on student survey**
- **Regular review of plan strategies in developing learning outcomes.**

Priorities for action:

- **Workshops are planned to be held with teaching staff and some educational experts so that effective systems and indicators for evaluation of teaching effectiveness can be established.**
- **Appropriate adjustments should be made in plans for teaching after consideration of course reports.**

Subsection 4.7 Support for Improvements in Quality of Teaching (Overall Rating ____**4**____ Stars)

Describe strategies for improvement of teaching. Include a table showing the extent staff participation in training and/or other activities designed for the improvement of teaching and other related professional development activities. The description should include processes used for

investigating and dealing with situations where evidence suggests there may be problems in teaching quality, and arrangements for recognizing outstanding teaching performance.

KSU recognizes that excellence in teaching is equated with excellence in learning. Accordingly, it has developed an extensive and energetic support system for continued professional development. Faculty development describes those activities faculty members undertake to maintain and improve their capabilities to perform their academic tasks. The objectives of faculty development are different for new faculty and for more senior faculty, and development plans are tailored to the needs of individual faculty members. Therefore, in 2007 KSU established the Deanship of Skills Development, which has adopted the concepts and practices of on-going self-development for the professional skills of the faculty, lecturers, teaching assistants, the academic and administrative leaders, and other employees, and the development of the students' skills in order to improve the quality of KSU's outcome in a way that contributes to the provision of a suitable environment and ease of achieving academic development.

<u>The Deanship aims at achieving the following:</u>

- **Setting up strategies to improve the skills of all KSU staff in a way that achieves excellence and creativity in learning and teaching.**
- **Developing the abilities and skills of all KSU staff, and supporting their creative endeavors and professional achievement to obtain excellence in the academic and administrative process.**

Another initiative in supporting quality of teaching at KSU is the establishment of the Deanship of Elearning and Distance Education. KSU views e-learning as a promising vehicle to achieve learning
objectives effectively.

<u>The Deanship of E-learning and Distance Education which aims at:</u>

- **Supporting the development of university courses in electronic form.**
- **Providing faculty members with advice and technical support for the development of educational sites.**
- **Providing an environment to stimulate electronic communication between faculty members and students.**
- **Developing faculty member skills to enable them to convert their courses into e-courses.**
- **Providing the appropriate environment and training to enable faculty members to carry out their tasks related to students' evaluation and monitoring and deal effectively with the Learning Management System (LMS) at the University.**
- **Creating incentives for faculty members who show excellence in e-learning application in the learning and teaching process.**
- **Promoting the culture of e-learning at KSU.**

Conducting training programs for academic staff in all aspects related to quality of teaching at suitable time and place to enable the academic staff to attend these trainings.

-Skills development courses.

- Sessions of new college members.
- Train of skills development.
- Leadership courses.
- Signage, sent over the internet.

Recently staff has started to attend specific workshops to learn about improvement in teaching methods. Also, the university has started an e-learning program for the staff (e.g. Jasour).

Evaluation of arrangements for supporting improvements in quality of teaching. Refer to evidence about the effectiveness of strategies used and provide a report including a summary of strengths, areas requiring improvement, and priorities for action. This evidence could include matters such as trend data in student course evaluations and survey responses from staff participating in programs offered.

1- **There are deanships in the university who deal with developmental aspects and skills of the teaching staff (e.g. Deanship of Skills Development, e-learning Deanship, Deanship of Quality, etc)**
2- **Several training sessions are held annually at the university for developing teaching skills of the academic staff (e.g. repeated workshops by the Deanship of Skills Development: course structure, communication skills, personal relation management, student evaluation)**
3- **Four obligatory training sessions for new academic staff .**
4- **The college gives incentive awards for the distinguished academic staff.**
5- **Attendance of external training sessions is available for the academic staff.**
6- **Most of the class rooms are equipped with Smart boards.**

List of staff members number who attended the conferences and scientific seminars in King Saud University and addresses of these workshops and seminars during the academic year 2009.

No.	Title of workshop or seminar	Attendance
1	Workshop on scientific publishing	1
2	Workshop on Rehabilitation of new faculty	3
3	Workshop on Accreditation and Quality Assurance program	1
4	Workshop graduates and employers Feedback	1
5	Scientific meeting for young researchers and students in master's and doctoral	1
6	Workshop on Research DNA gate to the knowledge economy	7
7	Training course on techniques of PCR	2
8	The first workshop on the draft strategic plan of the King Saud University	1
9	Workshop Prince Sultan Research Chair for Environment and Wildlife	1
10	A workshop on the development of academic programs	1
11	International Conference on Nanotechnology Industries in the camel	1
12	The role of the faculty member in the external audit of the academic program	1
13	Software Development "sections" academic and configured for	2

	Accreditation	
14	File decision and accreditation	2
15	Workshop on the applications of 6 Sigma in Higher Education Quality	2
16	Workshop quality and applications in higher education institutions	3
17	Workshop - Riyadh Technology Incubator	1
18	Workshop - Saudi universities and the need for publishing houses	1
19	Tenth Symposium in Alternative Medicine tributary unrivalled	2
20	The first workshop - the Centre of Excellence in Information Assurance	1
21	Symposium on patents, management of innovation - the intellectual property and patent	3
22	A panel discussion on the status of stem cells students	2
23	A panel discussion on the applications of biological research, nanotechnology	2
24	Training session for the classification and study the characteristics of nanoparticles	1
25	Session of the bridges (electronic trading)	1
26	Scientific Meeting "Recent trends in the survey of medical and metabolic syndrome"	4

Strengths:

- **Smart classrooms equipped with multi-media**
- **Reasonable teaching loud per staff member**
- **Most of staff members obtained their Ph.D. degree from well known and famous universities, additionally, they have a long period of experience in university teaching.**

Areas requiring improvement:

- **Most of the training workshops are excuted without considering the nature of requirements of the department.**
- **Number, time and place of these training activities should be arranged properly to enable the teaching staff to attend them.**
-

Priorities for action:

Some sort of coordination must be considered between the people in charge in the administration and the department to hold workshops according to the priorities of the dept.

Subsection 4.8 Qualifications and Experience of Teaching Staff (Overall Rating ____**4**____ Stars)
Comment on qualifications and experience of teaching staff relating to program requirements. A table should be attached listing staff teaching in the program, their highest academic qualification, with an indication beside their names if the courses they teach are within the field of their advanced study)

Zoology department is committed to hiring and keeping effective qualified teachers. Qualifications for hiring faculty at different faculty ranks are explicitly stated in the *Higher Education Manual*. In this manual, faculty members are classified into five categories/ranks: teaching assistants, lecturers, assistant professors, associate professors and professors.

KSU has a developmental program known as Attracting Outstanding Faculty and Researchers
Program. <u>The objectives of this Program include:</u>

1. **Promoting the educational process by benefiting from the expertise of distinguished faculties;**
2. **Fulfilling international leadership by relying on top-quality researchers to serve the scientific operation;**
3. **Helping the growth of a distinguished generation of researchers and postgraduate students in various disciplines to serve the nation.**
4. **Encouraging the University's affiliates to create excellence by introducing them to exemplary scientific excellence.**
   - **<u>This program has attracted 20 highly skilled professional faculty members who work in collaboration with Program's staff in research and teaching</u>**

All teaching staff has a minimum of Ph.D and each one teaches his own area of specialization. (e.g. Physiology, Entomology, Genetics, Immunology). Technical staff has a minimum of M.Sc. degree. (see the attached table).

NO.	Scientific group	Name	Specialization	Course
1	Entomology and Parasitology	Prof. Mohammed S. Al-Khalifa	Entomology	313 Zoo 454 Zoo
2		Prof. Mohammed S. AL-Yousif	Parasitology	112 Zoo 213 Zoo
3		Prof. Mikky A. Amoudi	Entomology	301 Zoo
4		Dr. Ashraf M. Ahmed	Entomology	106 Zoo 103 Zoo 145 Zoo
5		Dr. Ashraf M. Mashaly	Entomology	106 Zoo 145 Zoo 463 Zoo
6		Dr. Saleh A. Al-Quraishy	Parasitology	101 Zoo 112 Zoo 213 Zoo

7		Dr. Mohamed A. Dkhil	Parasitology	102 Zoo 145 Zoo
8		Dr. Abdel-Azeem S. Abdel-Baki	Parasitology	102 Zoo
9		Dr. Mohamed I. Sidiqqui	Entomology	145 Zoo
10		Dr. Ebtesam El-Olayan	Parasitology	212 Zoo
11		Dr. Tahany Ayad	Entomology	313 Zoo
12	Aquatic animals	Prof. Dr. Ali S. Al-Akel	Zoology, Behaviour	322 Zoo
13		Prof. Dr. Hmoud F. Al-Balawi	Fish Ecology and Biology	322 Zoo 301 Zoo
14		Dr. Elsayed M. Younis	Eco-physiology of fish	101 Zoo 333 Zoo
15		Dr. Zubair A. Ali	Fish ecology	145 Zoo
16		Dr. Abdul Wahab A. Abdallwarth	Fish biology	145 Zoo
17		Dr. Promi Verik	Ecology	322 Zoo
18	Physiology and Embryology	Prof. Ibrahim M. Alhazza	Endocrinology	331 Z00 431 Zoo
19		Prof.Ahmed R. Al-Himaid	Embryology	421 Zoo 422 Zoo 463 Zoo
20		Prof. Othman A. Al-Dokhi	Embryology and Developmental Biology.	261 Zoo 326 Zoo 421 Zoo
21		Prof. Samir A. Bashandy	Pharmacology(Physiology), Pharm acology	431 Zoo 463 Zoo
22		Dr. Saleh A. Kandael	Physiology	333 Zoo 331 Zoo 102 Zoo
23		Dr. Jamal J. Bader	Immunology	356 Zoo
24		Dr. Husam E. AbdRabbo	Immunology	145 Zoo
25		Dr. Abdulaziz Al-Okeli	Mammology	222 Zoo 326 Zoo
26		Dr. Saleh Al-Wasel	Physiology	106 Zoo 331 Zoo 145 Zoo
27		Dr. Ibrahim A. Barakat	Physiology	145 Zoo
28		Prof. Dr. Khadija J. Adham	Physiology	331 Zoo 333 Zoo
29		Dr. Manar H. Iffat	Embryology	421 Zoo
30		Dr. Maha H. Daghistani	Physiology	351 Zoo 352 Zoo
31		Dr. Nadia A. Al-Essa	Reproductive	422 Zoo

			Physiology	
32	Cell biology, Genetcis and Histology	Prof. Dr. Noory T. Taib	Histology and Histochemisrty	245 Zoo 261 Zoo 441 Zoo
33		Prof. Abdulaziz A. Al-Saleh	Cell biology	244 Zoo 341 Zoo 351 Zoo
34		Prof. Faisal M. Abou-Tarboush	Genetics	245 Zoo 341 Zoo 351 Zoo 441 Zoo 452 Zoo
		Prof. Ola El- Habit	Cytogenetics	244 Zoo 145 Zoo 106 Zoo 499 Zoo
		Dr. Entisar Al-Suhabani	Cytogenetics	145 Zoo 244 Zoo
35		Prof. Abdulaziz A. Al-Khedhairy	Molecular Genetics	452 Zoo
36		Dr. Saud A. A. Alarifi	Cell and molecular biology.	102 Zoo 244 Zoo
		Dr. Amal A. Al Hazaa	Cell and molecular biology	145 Zoo 244 Zoo
37		Dr. Mohammed A. Al- wadaan	Cell biology and Genetics	245 Zoo
38		Dr. Omar H. Abd-Elkader	Electron microscopy	499 Zoo
39		Dr. Mohammed F. Khan	Developmental biology	145 Zoo
40		Dr. Yasser A. Al-Nakady	Cell Biology	145 Zoo
41		Dr. Braj R. Senej	Molecular biology	145 Zoo
42		Dr. Quiser Saquib	Molecular biology	145 Zoo
43		Dr. Wael N. Hozen	Microbiology	145 Zoo
44		Dr. Alsayed Ahmed	Biotechnology	145 Zoo
45		Dr. Amal A. Al-Haza'a	Cell biology	244 Zoo
46	Ecology and pollution	Prof. Awad M. Al-Johany	Ecology	324 Zoo
47		Prof. Dr. Fahad A. Al-Misned	Environmental Pollution	453 Zoo
48		Prof. Dr. Mohammed K. AL-Sadoon	Herpetology (Ecophysiology and Toxicology)	323 Zoo 324 Zoo 353 Zoo

49		Prof. Khaled A. S. AL-Rasheid	Ecology, Environmental Pollution and Protozoology	453 Zoo
50		Prof. Jamaan S. Ajarem	Animal Behaviour (Behavioural Teratology)	451 Zoo
51		Prof. Mansour I. Al-Mansour	Ecophysiology	325 zoo
52		Dr. Hisham M. Sharaf	Ecology	102 Zoo 106 Zoo
53		Prof. Mohammed A. Al-Dakhil	Comparative Anatomy	101 Zoo
54		Dr. Abdulaziz Al-Okeli	Mammology	222 Zoo 326 Zoo
55		Prof. Hamed A. Al-Souryhi	Aquatic animals	145 Zoo

Evaluation of qualifications and experience of teaching staff. Refer to evidence and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **Most of staff members obtained their Ph.D. degree from well known and famous universities, additionally; they have a long period of experience in university teaching.**
- **The nature of the exams indicates to teaching experience.**
- **Staff members having diverse specialties, languages and nationalities.**
- **The teaching staffs are involved in teaching and supervising M.Sc. and Ph.D. students in the graduate programs of the department.**
- **One of the teaching staffs has won the award of excellence in teaching organized by the Department for the academic year 1429-1430 H (2008-2009 G).**

Areas requiring improvement:

- **A balance in the number of teaching staff must be considered among specialized groups in the department.**
- **Number of Demonstrators requires to duplicate**

Priorities for action:

- **Encouraging staff members by increasing incentives**
- **Allowing members to attend international conferences to present their researches**

Subsection 4.9 Field Experience Activities (if used in the program) (Overall Rating____**5**____ Stars)

Describe processes for planning field experience activities and planning for improvement.

Zoology program is committed to connecting with the community in formal and informal ways that include a broad spectrum of internships and public service activities. In Zoology program, field experience activity and/or internship are one of the most valuable components of its program. This course is normally offered off campus in an industrial or professional setting and supervised at least in part by individuals outside the institution. Most of it offers students the opportunity to participate in an activity designed to integrate traditional classroom learning with academically related, real world, practical work experience.

The purpose of the Academic Field Experience is to reinforce and link the traditional academic curriculum with real world, practical applications. The student and faculty advisor are responsible for selecting potential field practicum sites. Once the field practice location has been selected, a field preceptor, who should be experienced information professional, will be identified. There is no formal process for selecting and approving preceptors. The student's academic advisor makes an assessment of the appropriateness of the preceptor and the site for the field experience. However, the plan for field learning activities will be developed by the three parties: student, preceptor and advisor. This plan will identify student field practicum outcome objectives, activities, and specify the deadlines for the completion of projects. It also outlines the student relation with other members of the selected field site practicum. Every faculty assigned to supervise students in a field experience course should complete a field experience specification form at the beginning of the semester. The course specification form contains general information about the course, its objectives, intended learning outcomes, methods of assessment, planning and preparation, students' assessment, and course evaluation. In addition, the student should at the end of the field experience course complete a field experience report, which is expected to highlight what has been achieved and what improvement is needed.

The supervisor of the field experience in academic programs normally collaborates with the supervisor of the field location to set student training plan, designate appropriate tasks for field experience, monitor students progression, and evaluate the overall student scheme. Faculty members in charge of field experience courses always provide students with thorough information about the field experience course and any additional resources that are needed at the beginning of the course. The faculty advisor has responsibility for assessing the student's performance with input from the preceptor. The assessment includes reviewing the student's evaluation of field experience, the preceptor's evaluation of student's performance, and the student's summary report. The summary report is required of all students, and should include:

- **Description of activities performed during the field practicum, noting any deviations from what has been outlined.**
- **The extent to which the field experience met the educational objectives of the students.**

- **Pros and cons of the experience.**

Furthermore, each student will:

- **Meet with the site supervisor to review his/her evaluation.**
- **Meet with the faculty supervisor to review the paper and the overall experience.**
- **Complete and turn in a site assessment form to the fieldwork coordinator.**

This substandard consider the field Trip (454 Zoo) and the Research Project (498 Zoo) courses, that are concerned with essentials skills as Research skill, Teamwork skills, inter-personal Relation skills, Leadership skills, statistical analysis skills, Experimental design, scientific essay writing skills, Presentation communication skills, and other knowledge & skills that help graduates to conduct community & other organizations. Teaching strategies & Assessment strategies of the ILOs in there courses are also considered.

Evaluation of field experience activities including evaluation of processes for planning and managing them. Refer to evidence and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **During summer session, students get aquatinted with wildlife, animal fauna, aquatic biology and relevant information via field studies, following getting a suitable background in the field for at least 30 days (454 Zoo).**
- **During first and second terms students of certain courses allowed to spend 3 days in wildlife to study the animals in their natural habitat (321, 323 Zoo).**

Areas requiring improvement:

- **Some courses need field trips.**

Priorities for action:

- **More emphasis should be focused on practical part of the courses that serve the labor market.**

Subsection 4.10 Partnership Arrangements With Other Institutions (it these exist) (Overall Rating____**4**_____ Stars)

If partnerships have been established with other institutions to assist with the planning and or delivery of the program describe what is done through those partnerships and explain what has been done to evaluate the effectiveness of those activities.

- **The department is actively collaborating with several well-known universities and research centers worldwide to improve its research capabilities, staff and postgraduate student exchange.**
- **Entomological group has collaboration with Professor Guenter Blobel (USA) (Nobel Laureate in Medicine 1999), Professor Eric Morgan (UK), Dr. Paul Fletcher (USA) and Reinhold Hustert (Germany) through the Nobel project.**
- **Centr of Excellence in Biodiversity research has cooperation with many Professor around the world. Professor Alan Warren UK, Professor Weibo Song (China), ProfessorKlaus Hausmann (Germany), Professor Norbert Wilbert (Germany), Professor Fathy Abdel-Ghaffar (Egypt), Professor Heinz Rennenberg (Germany), Professor Rainer Hedrich (Germany), Professor Erwin Neher (Germany), Professor John Mundy (Denmark) and Professor Edward Farmer (Switzerland).**
- **Research Chair for fetal programming in relation to diseases has a good relation with some professors in Manchester University.**
- **Chair of advanced proteomics and cytomics research has a good relation with some professors in Saarbroken University**

Evaluation of partnership arrangements. (if any) Refer to evidence and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **Through the research chairs in the department there is some sort of good contact with relevant institutions to exchange ideas and be aware about latest researches.**
- **Some research and postgraduate student from other universities and gov. authorities given access to prepare and examine their specimens in the dept. units (E.M. unit)**
- **A good relation with other universities.**

Areas requiring improvement:

- **Coordination and organization with the international institution according to priorities and recruitments' of the program.**
- **The advising and counseling program at KSU needs more development to be more efficient in supporting students' academic experience.**

Priorities for action:

- **The contact with international institutions should be intensified through scientific channels.**
- **Establishing an appropriate mechanism for programs development through institutional studies.**
- **Monitoring students' progress and measuring their learning outcomes.**

Standard 5. Student Administration and Support Services (Overall Rating____**4**____ Stars)

Admission processes must be efficient, fair, and responsive to the needs of students entering the program. Clear information about program requirements and criteria for admission and program completion must be readily available for prospective students and when required at later stages during the program. Mechanisms for student appeals and dispute resolution must be clearly described, made known, and fairly administered. Career advice must be provided in relation to occupations related to the fields of study dealt with in the program.

Much of the responsibility for this standard will rest with institutional rather than program administration and arrangements will differ between institutions. However regardless of who is responsible this standard is important in assessing the quality of the program. In this section comment should be made not only on what is done within the department or program, but also on how the services provided elsewhere in the institution affect the quality of the program and the learning outcomes of students.

Introduction

The administration and support services of students are of major importance at KSU and are supervised by the Vice Rector of Teaching and Academic Affairs. Two supportive Deanships, the Deanship of Admissions and the Deanship of Student Affairs, are responsible for developing, monitoring, implementing, and following up on the required responsibilities and services. The Deanship of Admissions and Registration is responsible for student admissions, which are handled through an electronic system (Edugate). Registration and student records are also processed electronically through the Edugate and E-Register systems; it is also responsible for student records, registration, and all of its related operations. The Deanship of Student Affairs is responsible for all student activities and services, such as housing, sports, academic and social counseling, cultural activities, health services, training, transportation, student rights, etc. The Deanships delegate these responsibilities to the colleges through the Vice Dean for Academic Affairs. Students can directly contact these two deanships on some of the activities when needed. The responsibilities and regulations at these Deanships are written and approved by various authorities, including the Council of Higher Education, University Council. Some of these services and regulations are approved internally by the Rector, Vice Rector, or the related Dean.

Explanatory note about student administration arrangements and support services.

Deanship of Admission and Registration in King Saud University is one of the most important support services. The importance of Dean through the responsibilities entrusted to it, the center at which university student start and continue until graduation. Also its role with the student after graduation, continue its relationship with the university through the Dean. There is ongoing cooperation between the Dean and units of the university, as well as government institutions Saudi universities and others within and outside the Kingdom.

Support services

The Deanship of Admission and Registration, King Saud University has not and will stop at the end is separated from the follow-up to recent developments in the field of Admission and Registration, and seeks constantly to keep pace with technological developments in the field of Admission and Registration, has developed a number of supporting regulations that contribute to facilitate the work and accelerate the provision of electronic services directly to university students, including:

First:

Deanship of Admission and Registration via the Internet, where the site contains many of the services and all ads and news related to students. Has been reserved at the following simple address and everyone can remember: http://dar.ksu.edu.sa

Second:

Portal for the academic system where students can get different services, including query and print the student's course schedule, course schedule of decisions, the deletion, the addendum, to apologize for the season, ... etc.. Can be accessed on the portal of the academic system by Deanship homepage or direct to the following site: http://edugate.ksu.edu.sa

Third:

The new academic system (Register), which was run during the academic year 1428/1429, which provides all services to users of the system to accept the registration and delete, add, and otherwise in addition to the various reports that serve all levels of users and decision makers at the university.

Fourth:

Electronic admission for students where they can for the student and the student to get accepted without bothering come to the university. For more details, click here.

Additionally:

- **Monthly assistance**
- **A certain amount of money as a loan**
- **A certain support for buying books and teaching utilities.**

Describe the processes used to evaluate performance in relation to this standard.

A cross-sectional survey was implemented, in which two questionnaires were developed and used in all three centers; the first measured staff responses and the second measured students' responses to the items included in Standard 5.* In addition, structured interviews were conducted with the heads of both the Student Affairs Deanship and the Deanship of Admission and Registration at the University, which added value to the analytical process. The evidence of performance includes KPIs, survey feedback analysis and other relevant sources of evidence.

Evaluation of student administration arrangements and support services for students in the program. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Evidence on the quality of Student Administration and Support Services indicates that satisfactory levels of performance are normally achieved in all main components or areas of this standard, although there is room for improvement in all scales examined. The University shows strengths or a high level for effective security of student records, clear rules for governing privacy of information and controlling access to student records, eligibility for graduation, and opportunities for students' participation in religious, cultural, sports and physical activities.

Strengths:

- **The rules of admission are fair and clearly described for students.**
- **The admission requirements to KSU are available on the university web site.**
- **Admission requirements for the college of science are presented in the college Handbook.**
- **Criteria for admission and program completion are found in the Math's Handbook and on the web site of the department.**
- **Higher education at King Saud University is free.**
- **The University supports the students financially. Each student receives 1000 SR per month as a grant.**

Areas requiring improvement:

- **The status of the admission must be revised from time to time**

Priorities for action:

- **Students should be oriented toward the procedure of registration and be alert enough to use electronic gate of the university when registering courses.**

6. Learning Resources (Overall Rating____**4**____ Stars)

Learning resource materials and associated services must be adequate for the requirements of the program and the courses offered within it and accessible when required for students in the program. Information about requirements must be made available by teaching staff in sufficient time for necessary provisions to be made for resources required, and staff and students must be involved in evaluations of what is provided. Specific requirements for reference material and on-line data sources, and for computer terminals and assistance in using this equipment will vary according to the nature of the program and the approach to teaching.

Explanatory note about processes for provision of learning resources for the program including. Opportunities provided for teaching staff or program administrators to arrange for necessary resources to be made available, information about services provided and times available, equivalence of provisions for different sections, etc..

Learning Resources is considered to be the backbone for supporting teaching and learning processes. Learning resources for the program are: Text books, references available in the main library, Notes taken by the students in the lectures, materials presented on faculty websites, independent reading and electronic material available on the internet.

Describe the processes followed to investigate this standard and summarize the evidence obtained.

The members of the committee for equipments and facilities have conducted a series of meetings to discuss every item in this standard. The availability of these resources was investigated through direct checking of some of these resources and by student surveys

Evaluation of learning resources for students in the program. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **Books are made available for the staff members and students on a subsidized basis.**
- **Photocopiers are available in the library and the department for common use.**
- **Computers with on-line facilities are available for both the staff and students.**
- **Library catalogue is also available on-line.**
- **Regular workshops are held to train and update students as well as staff.**
- **Smart classroom training workshops for staff members.**
- **Staff member web page for interacting with students**
- **First day student meeting with College administrators**
- **Library administration always makes any required journal for the staff available.**
- **Large numbers of journals are now available on-line.**

- **Digital labs.**
- **Self learning classroom.**

Areas requiring improvement:

- **Some of the materials needed for student labs are sometimes difficult to get. The College tries its best to solve this problem.**
- **Assessing user satisfaction systematically. \Employing more well-trained librarians and information technology specialists.**
- **The need to improve performance level of the College library, including references, e-books and need for more e-courses.**
- **Work to find guides to promote a culture of e-learning and distance education and increase the skills of faculty members and students in this area.**
- **Create incentives for Excellence in e-learning faculty members.**

Priorities for action:

- **Continuity of training staff members on smart classroom and learning administration techniques.**

7. Facilities and Equipment (Overall Rating____**4**_____ Stars)

Adequate facilities and equipment must be available for the teaching and learning requirements of the program. Use of facilities and equipment should be monitored and regular assessments of adequacy made through consultations with teaching and other staff and students.

Much of the responsibility for this standard will rest with institutional rather than program administration. However regardless of who is responsible for provision of facilities and equipment their adequacy can have a significant effect on the quality of a program. In this section comment should be made on matters that impact on the quality of delivery of the program regardless of who has responsibility for them. These matters would include, for example, adequacy of classroom and laboratory facilities, availability and maintenance of equipment, appropriateness for the program of scheduling arrangements, and availability, maintenance, and technical support for IT equipment in meeting program needs.

Introduction

In KSU, working in accordance with the Strategic Plan, significant additions and enhancements were successfully implemented during the 2008-09 academic year. In addition, several construction and modernization projects were undertaken by various deanships. For example, the following projects have been implemented:

1. E-register and Edugate, the new academic systems
2. Madar, a new administrative system
3. Installed the latest hardware
4. Network infrastructure
5. Internet bandwidth expanded and services upgraded
6. An upgrade to smart classrooms throughout the University
7. The Learning Management System (LMS) and E-learning portal

The support to acquire facilities comes from:

- The department may request for equipment needed for research and postgraduate thesis-based research proposals. The budgets are drawn from college budgetary allocated to colleges and from Deanship of Graduate Studies budgetary which is part of University budget.

Security policy and arrangements are carried out in coordination with the department of security and safety of the university. In order to accomplish these objectives, the following safety measures are usually taken in all facilities:

1. Security: the department of safety and security provides security systems and guards to secure the facilities.
2. Fire Safety: A comprehensive sprinkler system is installed in all facilities and rooms. A sprinkler head is activated when the temperature of the room reaches 74^{o} C and splashes water in all directions. On top of that, laboratories, classrooms, halls and corridors are equipped with (powder and/or CO depending on the type of equipment found) fire extinguishers and fire blankets. In some laboratories, there are also sand buckets for extinguishing fires in machines and equipment.
3. First Aid: First aid kits are available in all laboratories.

4. Personal Protective Equipment: Laboratories are equipped with personal protective equipment according to the needs in every laboratory such as coats, masks, safety goggles, safety gloves, earmuffs, helmets, and safety goggles
5. Formation of the College Occupational Safety Committee: Each college is forming Occupational Safety Committee which includes members who form the college committee representing all departments as well as the College Administration Manager and the Director of the University- based Safety Department. This committee overlooks and reviews all issues related to occupational safety in the college.
6. Others: The colleges also have emergency plans, safety signs, emergency exit signs and laboratory safety manuals. Finally, safety aspects are taken into consideration when purchasing new machinery and equipment.

There are no specific regulations or policy to carry out periodic or emergency maintenance of equipment in different laboratories. However, in order to maintain equipment in good operating conditions, the following measures are taken:

1. Equipment is assigned to a lab technician who is responsible for its operation and routine maintenance.
2. The suppliers are called upon by researchers using the equipment to provide periodical, calibration and/or repair and maintenance using funds supplied by the administration.
3. There are maintenance contracts for delicate equipment such as medical instruments, computing facilities, and specialized apparatus for continuous calibration and surgical theater. The process of providing maintenance contracts is governed by the regulations and procedures set by the University and supervised by the president of the projects department.

Explanatory note about arrangements for provision of facilities and equipment.

For a long time, efforts (through the members of lab and technician committee and lab, equipment and services committee) have been made to keep all facilities and equipment adequate for teaching and learning requirements of the program. So, many meetings by those members have been arranged to achieve this goal.

Labs in the department

Animal house		**Laboratory**		**Central lab**		**Reasearch lab**		**Teaching lab**		**Self learning lab (digital lab)**	
Female Division	**Male Division**	**Female Division**	**Male Division**	**Female Division**	**Male Division**	**Female Division**	**Male Division**	**Femal e Division**	**Male Division**	**Female Division**	**Male Division**
1	**1**	**1**	**1**	**1**	**1**	**5**	**11**	**6 (Double)**	**7 (Double)**	**-**	**2**

Describe the processes used to evaluate the quality of provision of facilities and equipment for the program.

- **Buying the necessary materials and equipment every year.**
- **Keeping the facilities and equipment absolutely cleaned and safe.**
- **Trying to monthly maintain facilities and equipment.**
- **Trying to train the technicians to be professional in their duties.**
- **Observing facilities and technicians on monthly basis and reporting and weakness to the head of the department.**

Laboratory courses in Zoology

Course code	Course name	Credit hours	Lab. No.
Zoo 103	Principles of General Zoology	3	1B 57 & 59
Zoo 212	Parasitology	3	1B 76 & 78
Zoo 242	Cell Biology and Physiology	3	1B 76 & 40
Zoo 245	Histology	2	1B 78
Zoo 262	Microtechniques	2	1B 80
Zoo 305	Animal Modern Taxonomy	2	1B 63
Zoo 311	General Entomology	3	1B 78
Zoo 320	Ichthyology	2	1B 68
Zoo 325	Ornithology	2	1B 68
Zoo 326	Mammology	2	1B 68
Zoo 327	Herpetology	3	1B 63 & 68
Zoo 332	General Physiology	3	1B 40
Zoo 352	Principles of Genetics	2	1B 82
Zoo 373	Terrestrial Ecology	2	1B 82
Zoo 374	Aquatic Ecology	2	1B 82
Zoo 375	Pollution	2	1B 82
Zoo 420	Comparative Vertebrate Anatomy	2	1B 68
Zoo423	Principle of Descriptive Embryology	2	1B 68
Zoo 424	Principle of Experimental Embryology	2	1B 68
Zoo 432	Endocrinology	2	1B 42
Zoo 433	Immunology	2	1B 42
Zoo 441	Histochemistry	2	1B 65
Zoo 457	Cytogenetics and Cell Culture	3	1B 63
Zoo 458	Human Genetics	2	1B 63
Zoo 461	Laboratories technology	2	1B 42
Zoo 471	Animal Behavior	2	1B 82
Zoo 482	Organic adaptations of Chordates	2	1B 68

Evaluation of facilities and equipment for the program. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

The centralized user service center, established at the Deanship of E-transactions and Communications, provides IT technical support for hardware, software, and network support and handles requests by phone and through a web support system (http://itsupport.ksu.edu.sa). Technical support is being provided to the respective entities according to the following:

1. *Student Use.* Despite an increase in the availability of IT equipment, there is a greater need for public-access workstations to support not only educational and research needs but also the transition to an E-Services environment at KSU.

2. *Faculty Involvement.* The opportunity for faculty members to request new acquisitions and replacements of IT equipment vary among colleges.

3. *Purchasing Policy.* An institution-wide acquisitions and replacement policy for software and hardware is put in place to ensure that systems remain up-to-date and compatible as replacements are made. There are plans for further improvements in this area.

4. *Data Protection.* Security systems are in place to protect privacy of sensitive personal and institutional information and to protect against externally introduced viruses.

5. *Training.* Many of the staff members were trained by Deanship of E-learning and Distance Education on smart classroom equipment. More specialized training was provided for faculty and staff to utilize both the academic system (Edugate). In addition, manuals and course videos are available from the University's web site.

6. *Effective Use.* A new academic system, Edugate, has been implemented (https://edugate.ksu.edu.sa). The University is also undergoing a transition from the legacy systems to a modern administrative system (MADAR). It will eventually cover all the administrative subsystems for the University. The following subsystems have been launched: inventory, payroll, fund management, and administrative communications.

- **A code of conduct was established relating to inappropriate use of material on the Internet. Compliance with this code of conduct is checked and instances of unsuitable behavior are dealt with appropriately.**
- **More internal systems are being integrated through web-service interfaces (e.g., the integration of the E-Register (Edugate) system with the integrated library system).**

- **Wireless internet access was extended to cover the main halls, the administrative buildings, the Preparatory Year Facilities, the students' residences, and Prince Salman Central Library (currently in a testing phase). Moreover, the project to extend the wireless coverage to all colleges is underway.**

Strengths:

- **Equipment acquisitions meet Program requirements and are also consistent with institutional policies to achieve compatibility of equipment and software systems across the Institution.**
- **Teaching staff are consulted before major equipment acquisitions to ensure that current and anticipated emerging needs are met**
- **Facilities meet health and safety requirements and make adequate provision for the personal security of teaching and other staff, and students**
- **Adequate facilities are available for confidential consultations between teaching staff and students**
- **Services such as cleaning, waste disposal, minor maintenance, and environmental management are efficiently and effectively carried out**
- **Adequate computing equipment is available and accessible for teaching staff and students in the Program**
- **Technical support is available for faculty and students using information and communications technology**
- **Security systems are in place to protect privacy of sensitive personal and institutional information, and to protect against externally introduced viruses.**
- **E-register and Edugate, the new electronic web-based academic systems**
- **Internet bandwidth expanded and services upgraded**
- **An upgrade to smart classrooms throughout the University**
- **The Learning Management System (LMS) and E-learning portal**
- **The presence of two well equipped digital labs.**
- **The availability of good practical instructors.**
- **The presence of animal house.**
- **The presence of Zoo-museum.**

Areas requiring improvement:

- **The technicians need more training.**
- **The ventilation must be repair in the whole building.**

Priorities for action:

- **The practical instructors should report any weakness they notice during the practical sessions.**
- **Regular Maintenance of the instruments needs to be effective.**

8. Financial Planning and Management (Overall Rating____**4**____ Stars)

Financial resources must be sufficient for the effective delivery of the program. Program requirements must be made known sufficiently far in advance to be considered in institutional budgeting. Budgetary processes should allow for long term planning over at least a three year period. Sufficient flexibility must be provided for effective management and responses to unexpected events and this flexibility must be combined with appropriate accountability and reporting mechanisms.

(Much of the responsibility for activities relating to this standard may rest with institutional rather than program administration. However regardless of who is responsible the adequacy of resources and financial planning and management can affect the quality of the program. In this section the effect of financial planning and management arrangements on the program should be considered in this section, as well as matters that are carried out by program administrators themselves.)

Describe the processes used to investigate this standard and the evidence obtained about adequacy for the program.

Purchase, a request is made by the faculty members to the chairperson of the department who forward it to college administration. After approval, the request is forwarded to financial department of the university return to the department to get quotations. Relevant companies are contacted to get the price list. Again the request along with three quotations is send to college administration, which is forwarded to university purchase department. They issue a purchase order for that particular item after approval by the purchase committee. The purchase order issued to the company with fair quotation.

Explanatory note about financial planning arrangements for the program and the extent of financial responsibility for program managers.

- **The department asks the staff members about their needs from laboratory equipment and chemicals through the committee in charge to determine the expected budget.**
- **The committee examines the needs and determines the priorities and avoids repetition.**

Evaluation of financial planning and management for the program. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **King Saud University is getting great deal of the government encouragement and support which allow for getting a comparative advantage compared with other universities.**
- **The ability to generate income from non-governmental sources through established development programs, such as research chairs and financed**

research and projects.

- **The amount of financial resources available for the Program is sufficient for good quality program provision and benchmarked against costs of equivalent Programs at other similar Institutions.**
- **Sufficient delegation of spending authority is given to the Program Manager for effective Program administration.**
- **Delegations of spending authority are accompanied by appropriate accountability and reporting processes.**

Areas requiring improvement:

- **Strategic planning to ensure best utilization of the instruments and equipments in the Department.**

Priorities for action:

- **Prompt survey must be done for all equipment and instrument to make sure they are working fine.**

9. Employment Processes (Overall Rating____**4**____ Stars)

Teaching and other staff must have the knowledge and experience needed for their particular teaching or other responsibilities and their qualifications and experience must be verified before appointment. New teaching staff must be thoroughly briefed about the program and their teaching responsibilities before they begin. Performance of all teaching and other staff must be periodically evaluated, with outstanding performance recognized and support provided for professional development and improvement in teaching skills.

(Much of the responsibility for this standard may rest with institutional rather than program administration. However regardless of who is responsible employment processes will have a significant effect on the quality of the program. In this section comment should be made on employment matters that affect the quality of the program regardless of who manages them or determines the policies that affect them. These matters include at least the appointment of appropriately qualified faculty, their participation in relevant professional development and scholarly activities, and their preparation for participation in the program.)

Graduation methodology

To be successfully graduated in Zoology department, student must accomplish 136 credit hours distributed on 8 levels besides the summer session. Upon completion of the 6th level, the student would be able to take Field studies (Zoo 465) during summer which enables him to get acquainted with the fine details of field work, since student can practice hands on of what gained in previous levels of the plan under supervision of distinguished instructors. One of the prominent courses given in the 8th level is Graduation research project (Zoo 498) in which student learn how to gather information concerning specific point in animal biology from different resources, then gain the skill of designing and executing a practical experiment, then perform data analysis, finally write the scientific report, which would be graded by the supervisor. A final copy with the grade will be submitted to the department chairman.

Description of teacher education

The study plan allows the opportunity to Zoology graduates to work either in technical field of laboratories, wildlife and ecosystems or in the field of teaching as biology teachers in Secondary Schools.

The second opportunity was made available since the graduate student was able to choose 12 credit units from Botany and Microbiology Department. These units are within the elective courses which appear in the study plan in 6th, 7th and 8th levels (4 hours / level).

The teaching record of Zoology graduate accompanied the graduation certificate, illustrates the nature of elective courses chosen by the student which determine the tendency to work in the appropriate place. Furthermore, Zoology graduate who wishes to work as a teacher has to pass a written examination and an interview held by people in charge in Ministry of Education.

Explanatory note about recruitment and other employment activities that relate to this standard.

- **Employment of Saudi demonstrators, who study M.Sc. and Ph.D. either in**

KSA Universities or abroad, then has his position as an assistant professor.

- **Employment of Saudi staff that has had his Ph.D. before employment. In this case, the CV of the nominated person, his certificates and Graduate scores, M.Sc. Thesis and Ph.D. Thesis are evaluated. Then, he is requested to give a seminar in the presence of a number of Academic staff including at least 3 high Academic staff in the Department who participate the evaluation of the seminar. All these evaluations are discussed in the Department Council to make the decision.**
- **Employment of non-Saudi staff selected through interviews in their own countries or in KSA, and then contracted for a definite period.**
- **Faculty and staff are employed through advertisements placed in newspapers and magazines.**
- **Appointment of faculty and staff is also carried out with the help of consulate services, especially those located in western countries.**
- **Further appointments are also made by senior university staff visiting other countries and holding interviews of prospective candidates.**
- **There is a diversity of academic staff (teaching and supporting staff) from different nations and different universities.**

Describe processes used to consider quality of performance in relation to this standard.

- **The Development and Quality Committee have sought and obtained information and feedback from as many members of the department as possible during the process of completing the work on the Self-Study. As the end product of many hours of work and the strong commitment of all involved, this report represents a synthesis of contributions made by many individuals from the dept.**

- **Data has been obtained through documents review, personal interviews, emails, surveys, and letters. The Development and Quality Committee have been involved in the preparation of this standard.**

Evaluation of employment processes for the program. Refer to evidence about the standard and subsections within it and provide a report including a summary of strengths, areas requiring improvement, and priorities for action.

Staff membersSurvey

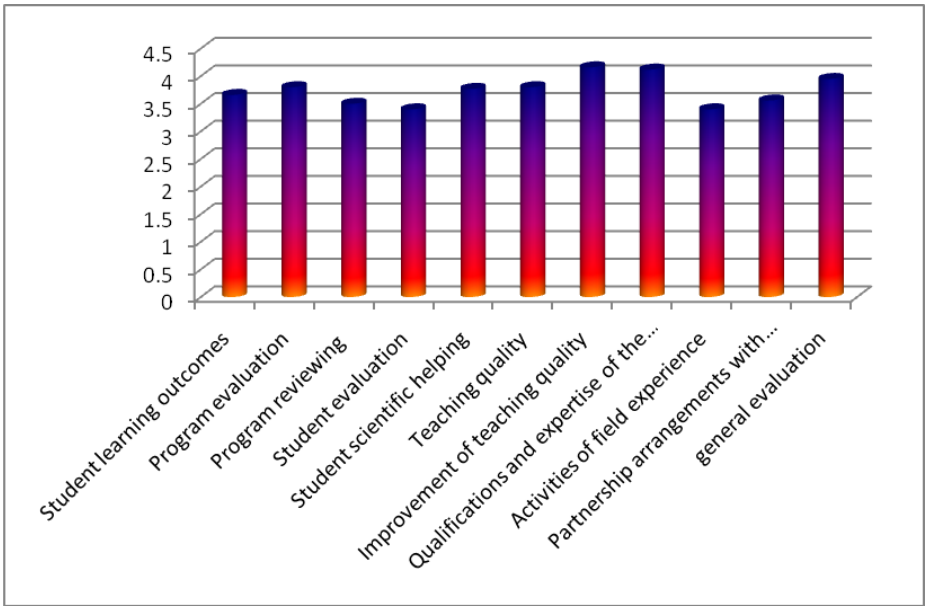


Figure 3. The overall satisfaction expressed by staff members in the last statement of the survey.

Strengths:

- **Recruitment processes ensure that teaching staff have the specific areas of expertise, and the personal qualities, experience and skill to meet teaching requirements**
- **New teaching staffs are given an effective orientation to the Institution to ensure familiarity with the Institution and its operating procedures, services and priorities for development.**
- **New teaching staffs are given a thorough orientation to the Program to ensure they have a thorough understanding of the Program as a whole, of the contributions to be made to it through the courses they teach, and of the expectations for coordinated planning and delivery of courses and evaluation and reporting requirements.**
- **Outstanding academic or administrative performance is recognized and rewarded.**
- **Presence of three research chairs to provide new income resources and allow for independent employment.**

Areas requiring improvement:

- **Assistance is given in arranging professional development activities to improve skills and upgrade qualifications**
- **Consultations about work performance are confidential and supportive, and occur on a formal basis at least once each year.**
- **A higher ratio of supporting staff, especially the demonstrators, is strongly recommended in the male section.**

Priorities for action:

- **There is a well organized system in place to appoint best available teaching staff both for faculty and support positions.**
- **The department is in a process of forming an internal committee to look to the need of the department teaching and research. This committee will also develop job description for teaching and administrative purposes.**

10. Research (Overall Rating____**4**____ Stars)

All staff teaching higher education programs must be involved in sufficient appropriate scholarly activities to ensure they remain up to date with developments in their field, and those developments should be reflected in their teaching. Staff teaching in post graduate programs or supervising higher degree research students must be actively involved in research in their field. Adequate facilities and equipment must be available to support the research activities of teaching staff and post graduate students to meet these requirements in areas relevant to the program. Staff research contributions must be recognized and reflected in evaluation and promotion criteria.

(Expectations for research will vary according to the nature and mission of the institution and the level of the program (eg. college or university, undergraduate or postgraduate program). In this section comment should be made on the extent and quality of research activities of faculty teaching in the program, and on how their research and other current research in the field is reflected in teaching.)

- **KSU aspires to become a national and global model of teaching and research excellence. The majority of stakeholders believe that KSU must continue to be the pioneer of higher education in the Kingdom and become the first research-based university, playing an ivotal role in Saudi Arabia's knowledge economy. This is not to say that KSU should shirk its teaching role; rather it must simultaneously deliver teaching and research excellence at both the national and global standards.**

- **KSU has considerably improved its financial resources by having its budget almost doubled and by establishing an endowment program for which the target is to collect around $ 10 billion in cash and assets value from the government and the donors. Moreover, KSU has created a number of additional important funding sources for scientific research including funds for more than 90 Research Chairs and 4 Centers of Excellence for research.**

Explanatory note about nature and extent of research activities associated with the program or carried out by staff teaching in it.

The researches implemented by Zoology teaching staff members include both academic and applied disciplines in different scopes of knowledge pertaining to specialized research groups in Zoology department including aquatic biology, cell, genetics, histology, physiology and developmental biology, ecology and pollution, entomology and parasitology. Most of the applied researches are dealing with finding solutions of the prevailing problems in the community especially environmental influences, pollution and conservation of the wildlife.

The intensity and diversity of researches conducted in Zoology department might be attributed to many reasons such as coordination and cooperation among staff members who manage to execute researches as team work and the availability of facilities, equipment and financial support.

Moreover, beside the B.Sc. program the department offers three graduate programs, namely, the two M.Sc. programs and Ph.D. program. One of the outcomes of these programs, specially the Ph.D. , the students are very well trained to carry out some research activities in their areas, and publish some articles extracted from

their thesis. These graduate programs add to the incentives of the faculty of the department to get involved in research activities in their areas of specializations

The range of the number of researches of the staff members is extended between 25-100 researches every year. Research labs are equipped with adequate facilities and equipment to support the research activities. The program has the following scientific channels:

- **Three research chairs (Advanced proteomics and cytomics research, DNA technology research and fetal programming in relation to diseases).**
- **Center of Excellence for Biodiversity Research**
- **Many national projects**
- **Scientific projects from the research center in the college of science**

The department has a good equipment such as:

Central Laboratory:

This unit includes many machines that everyone can benefit from them. Qualified technicians are operating the equipment for various research projects for undergraduates and graduate students and faculty members. This unit is designed to provide technical services to the Zoology Department faculty members and students. This unit also offers multiple services for students of Zoology Department to develop the scientific research to cope with the labor market. The available machines in this unit:

- **Atomic Absorption.**
- **Machine to determine DNA sequences (DNA Sequencer).**
- **High Performance Liquid Chromatography (HPLC).**
- **Spectrophotomer.**
- **Flame photometer.**
- **Deep Freezer at -86 °C.**
- **Refrigerated centrifuge.**
- **Autoclave (High pressure sterilizer).**
- **Measuring pH (pH meter).**
- **Ice Maker (Ice Maker).**
- **Carbon dioxide (CO_2) incubator**.

Cells and Tissue Cultivation Unit:

This unit has been activated at the beginning of the second semester of the academic year 1429/1430 H benefiting all the faculty members and graduate students in the department. This unit includes all machines and equipment necessary for the

cultivation of cells and tissues, which include:

- **Laminar flow hood.**
- **Carbon dioxide (CO_2) incubator.**
- **Inverted microscope.**
- **Autoclave.**
- **Water Distiller.**
- **Refrigerators and Freezers.**
- **Liquid Nitrogen containers.**

Many other facilities such as water baths / pH meter and a Western blot, stickers.

Electron Microscope Unit:

The unit focuses on examination of fine structures of the biological samples (tissue or micro-organisms) after taking very thin sections of them, and the unit has three laboratories for the preparation of the samples, namely:

- **Glass knives Laboratory.**
- **Sections and semi-thin sections preparation Laboratory.**
- **High-precision cutting Laboratory.**

Scanning Electron Microscope Unit:

It is used to study the surface of samples of various types and to show their ultrastructures. This unit also serves samples coated with gold and chrome.

Describe the processes used to evaluate performance in relation to this standard.

- **Review all available documents regarding the research activities of the staff members.**
- **Designing several tables and questionnaire forms to collect information about publications and research funds by the Higher Studies and Research Committee.**

Evaluation of research activities associated with the program and of staff teaching in it.
Provide a report about the standard and subsections within it Tables should be provided indicating the amount of research activity and other participation in scholarly activity and comparisons with appropriate benchmarks.

- **Each specialized research group in the department should organize and set up a strategic plan so as to choose the type of researches which have the priority to be implemented.**
- **Encourage research that has both fielded and laboratory components.**

- **Selection of high quality periodicals for publication (e.g. ISI).**
- **Investigating the main problems in order to serve the local community (i.e., implementing researches that dealing with economics of knowledge).**
- **Maintain major research foci and strive for excellence in the areas of cell and molecular, organismal, ecological, evolutionary, and behavioral biology.**
- **Opening connection channels between the department and different governmental authorities to conduct the conclusions and recommendations of the applied researches implemented by zoology staff members and postgraduate students.**
- **Funding is obtained by King Abdulaziz City for Science & Technology (KACST), which is a governmental funding organization, which evaluates the research projects through a refereeing system and grants projects.**
- **Funding is also obtained by local companies (Sabic) which fund research projects individually or by disbursing a pot of money for research at university.**
- **The third source of funding is the university itself which has created research centers which annually calls for small research projects and funds them.**
- **The research center also has peer reviewed journals. Most of the staff publishes their research in these journals or journals of international standard.**
- **Students are involved in these research programs both at undergraduate and post graduate level where they do research projects supervised by academic staff.**
- **The research is also supported by research assistants provided to academic staff through the department.**
- **There is a need for increasing post doctoral researchers at the moment.**

The report should include a summary of strengths, areas requiring improvement, and priorities for action.

Strengths:

- **The department and the college of Sciences won the first place among the university colleges in terms of number of research papers published in ISI journals.**
- **Cooperation with local industry and with other research agencies is actively encouraged. Substantial increase in industry sponsored research and sufficient license income to offset cost of technology transfer operations is expected from KSU's activities in technology transfer.**
- **Number of publications in ISI and HIF journals (attached documents)**
- **The majority of the researches have more than one author which indicates the spirit of team work.**
- **The diversity of research disciplines according to classification of staff members into specialized research groups covering all kinds of information pertaining to zoology.**
- **Number of Scholars in the department**
- **Well equipped research laboratories**
- **Well equipped Central Laboratory (female section)**

- **Excellent Technical Training programs**
- **Existence of graduate programs for M.Sc. and Ph.D. in the department.**
- **Existence of Deanship of Research in the university and the Research Center in the college to support research process.**
- **The university subscribes in a large number of specialized periodical journals in different specialties in mathematics which are available either in printed or electronic forms.**

Areas requiring improvement:

- **The central lab at Zoology department (male section) needs to be provided with modern equipment.**
- **Recruit qualified technicians.**
- **Recruit qualified Researches**
- **Increasing the financial support as a postgraduate students funds**
- **Reconsider the teaching load for all faculty members**

Priorities for action:

- **Good plans for providing the central lab at Zoology department with modern equipment and well- -qualified technicians.**
- **Increasing the financial support for postgraduate students.**
- **Establishment of an efficient maintenance system for laboratory equipment to ensure their proper operation and calibration; and providing labs with skilled technicians and engineers.**

The number of research published in scientific journals during the university year 2009, by staff members of the department of zoology according to research groups in the department:

The number of research published in ISI journals	The number of research published in 2009	Research group
22	31	Group of cell biology, genetics and tissue
10	19	Group of developmental biology and physiology
6	9	Group of animal ecology and pollution
22	24	Group of Entomology and parasitology
9	10	Group of aquaculture
69	93	Total

The number of ongoing researches through 2009 by the staff members of Zoology department, according to research groups in the department

Research group	The number of ongoing researches through 2009
Group of cell biology, genetics and tissue	4
Group of developmental biology and physiology	7
Group of animal ecology and pollution	3
Group of Entomology and parasitology	6
Group of aquaculture	1
Total	**21**

The number of supported researches and the names of those supporting during 2009

Supporters	The number of supported researches
King Saud University	3
Deanship of library affairs	1
Scientific research agency	1
Research center, College of science	15
Centre of Research Excellence	4
Abd AL-Rahman Jeraisy chair (DNA)	2
Fetal programming in relation to diseases	2
Nobel project	2
King Abdulaziz City for Science and Technology	2
National Plan	1
Sabic	3
King Faisal Specialist Hospital	1
Cairo university, Egypt	2
Sarland University, Germany	4
Total	**43**

Staff members in the department of zoology secured patents during the academic year 2009

Donor	Patent	Name	
Gold medal at the geneva international exhibition of inventions	Invention: Sister cromatides exchange stain	Dr. Intesar Al-sohaybani	1
Award of the organization of Korean investment and trade	Invention: Sister cromatides exchange stain	Dr. Intesar Al-sohaybani	2

Silver medal in the exhibition, the Korean international Women`s inventions	Invention: Sister cromatides exchange stain	Dr. Intesar Al-sohaybani	3
National center of research, Egypt	Invention: The use of plant extracts of the Fenugreek and Aljessenj as a hormone additives to improve external ripening eggs of the Egyptian buffalo	Dr. Ibrahim Barakat	4

Staff members laureates scientific prizes during the academic year 2009

Donor	Award	Name	
King Saud University	Excellence in teaching (at the department level)	Prof. Dr. Ahmed Al-Hemidi	**1**
King Saud University	Excellence in Scientific Publishing	Prof. Dr. Khaled Al-Rashed	**2**
Assuit University, Egypt	A special award on the occasion of receiving an award of excellence at the University of Montreal, Canada, and the award for best research publication in the field of viruses in the world and the award for best research in Canada in the area of epidemic hepatitis C virus.	Dr. Gamal Badr	**3**

11. Relationships with the Community (Overall Rating____**4**_____ Stars)

Significant and appropriate contributions must be made to the community in which the institution is established drawing on the knowledge and experience of staff and the needs of the community for that expertise. Community contributions should include both activities initiated and carried out by individuals and more formal programs of assistance arranged by the institution or by program administrators. Activities should be documented and made known in the institution and the community and staff contributions appropriately recognized within the institution.

Introduction

The mission of Zoology department emphasizes its role in community service as one of its three major tasks beside teaching and research. Zoology department serves the community and builds knowledge-based economy through the department and individual staff members. The community services provided by the Zoology department include consultancies, conferences and workshops, short courses and diplomas providing programs in different specializations that benefit both public and private organizations.

Public meetings, discussions, workshops, symposia, newspaper articles and TV and Radio programs administered and/or delivered by the staff members provide valuable information to the community, thus updating it with the latest news and developments in different areas and specializations. In addition, staff members serve as part-time consultants in ministries, and public and private organizations.

Process for preparation of report on this standard:

- **Questionnaires were prepared and distributed to the staff members (example attached) to collect information about the community services carried out individually by each staff member and collectively by the Community service committee, for the preparation of the report.**
- **A questionnaire was distributed to employers of KSU alumni (example attached) by the Alumni Affairs and Employment Committee to assess the reputation of the University in the community.**

Explanatory note about community activities carried out in connection with the program.

Zoology Department is recognized for its achievements which raises the level of the university and community contributions. The services for society are summarized in the following points:

1 – Edition of books that benefit school and university students, researchers and all members of society. Additionally, some staff members are involved in translation of textbooks related to zoology.

2 – Organization of public lectures and publishing some articles in newspapers and magazines in Saudi Arabia.

3 - Protection of the environment in Saudi Arabia and participation in the protection of animals extinct through counseling, writing books, make TV programs, the

membership of environmental protection associations.

4 - Cooperation with some satellite channels to oversee the programs.

5 - Participating in the creation of the National Museum of Natural History.

6 – Consultation of scientific and medical aspects in some ministries and hospitals.

7 – Leading some research chairs (Advanced proteomics and cytomics research, DNA technology research and fetal programming in relation to diseases).

8 - Participating in the rehabilitation of students and the Ministry of Education in the junior Olympic competition.

9 - Participation in exhibitions and festivals to display the types of animals and to promote a culture of attention to animal.

10 - The Dept. has specialized elite of scientific experts in the disciplines of Zoology to benefit the community in the fields of scientific and applied aspects such as (the ways to combat insects and rodents that cause damage to health. Studies on the embryos of animals and cloning processes, studies on the molecular components of cells, studies and methods of parasite control, advanced studies in genetic engineering, tissue culture, environmental pollutants and resistance, the preservation of livestock, whether wild or domesticated). In all of these disciplines has been completed research serve the community.

11 - Got some members of staff on local and international awards or patents and became a Fellow of other scientific institutions within the scientific and editorial boards of international journals supporting the capacity of the department in community service.

12 – The department contains a museum with a lot of animals and serves students in the Schools and Universities to identify the animal kingdom and the various subdivisions.

13 - Contains a section on some of productive units that serve researchers in all scientific institutions and industry (electron microscopy unit, the unit of analysis of soil components and unit tests drinking water Central Laboratory, bearings, Research).

14 – Organization of seminars, courses and workshops in various fields of science (Session PCR Workshop, Scientific Publishing and the formation of teams

and research groups).

15 - Participation in projects that serve the national plan and participate in the Kingdom of local and international conferences in the fields of Zoology, which reinforces the status of the various section in the service of society.

16 - Some graduates work as teachers in public education and university Obagesin in science centers or technicians in laboratories, hospitals and ministries.

Comments should include reference to interactions with the community by faculty associated with the program as well as with program relationships of the kind referred to in subsection 11.2.

- **There is a satisfied some sort of interaction between the program and the community which is reflected in many aspects that introduce high quality services to the community either by the department facilities or by individual staff members as experts and consultants.**

Describe the processes used to evaluate performance in relation to this standard and summarize the evidence obtained.

- **Annual reports are made for the contribution of the program to help the community.**
- **Contribution by staff to community is given significance during staff promotion.**
- **The department has a committee which tracks the post-graduate performance of its graduates.**

Evaluation of the extent and quality of community activities associated with the program and of staff teaching in it. Provide a report about the standard and subsections within it including tables showing the extent of community activities and a summary of strengths, areas requiring improvement, and priorities for action

Beneficiary	Name	Service
University of Princess Nora	Prof. Dr. Nory Al Taib	Supervision of postgraduate students at the university of Princess Nora
National Commission for Wildlife Conservation and Development	Dr. Abd Al-Aziz Alokaili	Part-time Consultant

University of Hail	Prof. Dr. Ahmed Al-Hemedi	Coordinator of the Master program of biological science of the University of Hail
National Center for measurement	Prof. Dr. Ahmed Al-Hemedi	Collaborating with the National Center for measurement
Riyadh Municipality	Prof. Dr. Mohamed Al-Khalifa	Part-time Consultant
Ministry of Health (Faculty of Medicine, King Fahad Medical City)	Prof. Dr. Mansour Al-Mansour	Part-time Consultant
Ministry of Education	Prof. Dr. Mohamed Al-Sadoon	Part-time Consultant
King Faisal Specialist Hospital	Dr. Maha Daghestani	Part time scientist, department Genetics Research Center King Faisal Specialist Hospital and Research Center, 2007-2010
College of Science - the Saudi Food and Drug Administration, King Abdul Aziz City for Science and Technology, and other researchers and academics	Prof. Dr. Abdul Al-Aziz Alkhoderi	A variety of services provided by the Research Chair of DNA including the organization of scientific workshops and scientific lectures:: Nanotechnology, The new industrial revolution‘the present, future and beyond 22/5/1430H

Strengths:

- **Zoology department strongly supports the activities of all community services programs, which shows clearly in its mission, vision and objectives.**
- **The department assessment and promotion criteria include a weight for participation in community service.**
- **The three research chairs in the Dept. serves the Saudi Society and cancer and DNA research. (attached documents of the activities of each Chair)**
- **The scientific literature and the many lectures, seminars and educational workshops. (Attached documents of these lecture – Topics- number of audience- place and date).**
- **Participation of qualified staff members in scientific and medical advisory committee (Examples of these Medical & Scientific committees).**
- **Multiple qualified staff members represents multi-nationalities, obtained**

their degrees (PhD) from highly ranked universities which reflect their experiences in serving the community and publishing in international periodicals.

Weaknesses:

- **Organize more department conferences and encourage enrollment in international Scientific Societies and magazines.**
- **Invest in a TV channel showing lectures, seminars and social activities of the department which may help students and community.**
- **In most community service units in Colleges, the services provided to the community are not publicized or announced to target beneficiaries and in some cases they are not even documented.**
- **The annual reports provided by Colleges have to be prepared with more details about the activities conducted by their community service units in comparison to previous years.**
- **Absence of real partnership, coordination and cooperation between males and females centers in community service activities.**
- **A faculty member's participation in community service is not counted as part of their workload.**
- **Not all students' projects are based on an analysis of the community needs.**

Ways of improvement.

- **Organize annual conference representing the department activities**
- **Starting an undergraduates program in female section.**
- **Communication with external institutions**
- **Starts new applied minor and major tracts.**
- **Department members need to be further encouraged to provide community services through an increase of the bonus level allocated for community service activities.**
- **Informative campaigns should be prepared to announce and publicize the different types of services provided to the community.**
- **Community service units at department should have clear strategies, work plans and rules that provide the methodologies they follow in providing services.**
- **Rules and mechanisms should be established to encourage participation of male and female centers of KSU in joint community service activities and projects.**
- **Should be taken into consideration by the University.**

H Review of Courses

1. Describe processes followed in reviewing courses. (Eg. Surveys of graduates, faculty, or members of the profession, analysis of student course evaluations, review of course and program reports, interviews with faculty, comparison with similar programs elsewhere, consultancy advice, etc.)

• The development and quality committee in cooperation with specialized groups in the department reviewing courses. This includes academic staff who review the program based on analysis of student course evaluation and comparison with similar programs in other institutes.

• A survey of the courses and assessment of staff by students have been introduced recently and results from this survey will be made available at a later stage.

2. Course Evaluations

Summary report on strengths and weaknesses in courses and any other conclusions from the processes described under F1 above.

(Note that individual course reports, student course evaluation reports and the most recent annual program report should be available for reference.)

- **A renew developed study plan for Bachelor degree has been adopted which would be comparable to those in world class universities. This plan has been introduced so as to fulfil the needs of the graduates to be able to achieve their duties properly.**
- **Quality of teaching as reflected in student evaluations and other evidence of learning achieved.**
- **Appropriateness of course content for the objectives of the program.**
- **Appropriateness of teaching strategies used for the content of the course and the domains of learning to be developed in the program.**
- **Responsiveness of course planning and delivery to feedback from annual course evaluations.**
- **Recommendations for changes relating to these or other matters arising from the review of the course.**

Strengths:

- **The majority of courses are specialized and their objectives are clear enough which are achieved by the essential topics covered in contents.**
- **A highly qualified number of teaching staff performs their duties in taking care of courses according to their specific specialization.**
- **The prerequisites courses are serving the educational process properly, since they contained necessary knowledge as background for the other courses.**

Weaknesses in courses:

- **There is some sort of overlapping between some courses in their scientific contents.**
- **The credit hours for some courses look quite limited relevant to their contents.**
- **Nomination of some courses needs to be slightly alerted according to the contents to avoid repetition in courses names**

I Independent Evaluations

1. Describe the process used to obtain independent comment on the quality of the program and the reliability and validity of analyses carried out in the report. Processes may include a review of documentation by an experienced and independent person familiar with similar programs at other institutions and who could comment on relative standards, consultancy advice or a report by a review panel, or even the results of an accreditation review by an independent agency. An independent evaluation may be conducted in relation to the total self-study, or involve a number of separate comments by different people on different issues.

- **The Program specification, Self evaluation scales and the self study report have been sent to an independent and experienced Zoologist who is familiar with a similar program in a similar institution, to obtain his comments on the quality of the program.**
- **A review of Study plan was done by two experienced and independent persons familiar with similar programs at Manchester and Porto universities (reports attached)**

2. Summary of matters raised by independent evaluator(s)

1. **Program ILOs should be defined based on relevant external academic reference points such as:**
   a. **Subject benchmark statements**
   b. **Peer college practices**
   c. **Framework for higher education qualification published by NCAAA**
   d. **Professional, statutory and regulatory bodies**
   e. **National occupational standards**
   f. **Code of practice sections**
2. **A gap-analysis of the current program aims and ILOs should, then be done with reference to the adopted relevant academic reference points. The ILOs should be restated by the relevant external academic reference points. And the ILO(s) that is (are) not covered and structured in the curricula.**
3. **ILOs should be aligned at the following three levels:**
   a. **Graduate attributes and program ILOs.**
   b. **Program ILOs and course ILOs.**
   c. **Course ILOs, teaching/learning activities and assessment tasks.**
4. **The program ILOs should be clearly stated and detailed enough to define pass/fail point (criteria).**

3. Comment on matters raised by independent evaluator(s) (Agree, disagree, further consideration required, action proposed, etc.)

A review was done to all course specifications to determine and evaluate the learning outcomes.

J Conclusions

1. List and briefly describe aspects of the program that are particularly successful or that demonstrate high quality.

- **Clearly stated mission statement directed the planning process for the program development and it is consistent with the mission statement of the institution.**

- **Significant achievements have been made by Zoology department as part of its continual strives toward academic excellence. The following are highlights of some notable achievements by Zoology department, which are listed here briefly as part of the concluding remarks.**

1. **Zoology Department has been investing heavily in the students' teaching and learning improvement as well as in the performance assessment and follow-up programs. This has enabled department to attain notable achievements including (1) enhanced learning environments, using advanced IT technologies, via the online E-register, Edugate as well as eLearning and distance education, (2) introduction of external examiners and program reviewers (3) implementation of a program for systematic academic review procedure, (4) vigorous initiatives to move toward outcome-based learning and performance assessment, (5) enrollment development of Zoology department faculty members in the newly established programs via the Deanship of Skills Development, (6) formation of department advisory boards, and (7) design and implementation of continual evaluation and assessment surveys in a number of (student, teacher, alumni, employer), etc.**

2. **Zoology department has embarked on several vigorous initiatives to improve its academic performance, scholarship and research outcomes. Examples of such initiatives include (1) the three research Chairs and Center of Excellence in research in biological diversity (2) inviting Nobel scientists through the Nobel Laureates' program, or through the three research Chairs (3) Gaining awards by number of departments faculty members through an ambitious excellence rewarding system, which includes various awards on academic scholarship and research achievements (Documents as evidences).**

3. **Some impacts such as the Zoology graduates are currently rated the best across the Kingdom. Furthermore, Zoology graduates constitute the highest rate among Saudi universities in regard to both admission and degree completion at international leading universities at part of the King Abdullah Scholarship Program. The Zoology graduates**

studying abroad for Master and Ph.D. degrees have been noted for their outstanding performance and competitive status. Many of these graduates are returning to constitute a highly skilful workforce at the University.

2. List and briefly describe aspects of the program that are less than satisfactory and that need to be improved.

The department acknowledges that there are still several areas, within its mandate and domain of operations, which need to be improved further. In this regard, Zoology department intends to explore all windows of opportunities – and use all available means - in order to bridge existing gaps and correct dissatisfactory performance areas wherever they exist. The following is a brief outline of the areas that need further improvement. They are ordered, for ease of reference, according to the associated standards:

- **Presence of a few numbers of demonstrators and technicians.**
- **The central lab at Zoology department needs to be provided with modern equipment and well- -qualified technicians.**
- **Some of the materials needed for student labs are sometimes difficult to get. The college tries its best to solve this problem.**
- **Comparisons with the benchmark.**
- **A better utilization of the existing department's vast data and statistics is needed with more focus on analyzing such information for the purpose of continuous improvements.**

K. Action Proposals

These should be based on the matters identified in sections F, G, H, and I above and indicate specific actions proposed to deal with the most important priorities for action identified in those sections.

1. Changes in Course Requirements (if any)

List and briefly state reasons for any changes recommended in course requirements, e.g.

- **Courses no longer needed**
- **New courses required**
- **Courses merged together or subdivided**
- **Required courses made optional or elective courses made compulsory**
- **Changes in pre-requisites or co-requisites**
- **Changes in the allocation of responsibility for learning outcomes as shown in the course planning matrix.**

• Renew Program plan submitted and approved by the authority

2. Action Recommendations.

Recommendations should be made for action to be taken for further improvements or to overcome problems or weaknesses identified. The actions recommended should be expressed in specific terms rather than as general statements. Each action recommendations should indicate who should be responsible for the action, timelines, and any necessary resources.

Action Recommendation 1 **Updating the study plan to be compatible with the preparatory year program.**
Person (s) responsible **1- Head of the Zoology department.** 2- **Study plan committee**
Timelines (For total initiative and for major stages of development) **• Within one year**
Resources Required **1- Financial and Governmental Aid** 2- **Increasing number of jobs available.**

Action Recommendation 2. **Recruitment of high qualified technical supporting staff as well as research assistants.**
Person(s) responsible 1- **Head of the department.** **2- Dean of the college.** **3- University employment office.** **4- Research centers.**

Timelines **• Within one year**
Resources Required **Encouraging undergraduate and graduate students to pursue a career in academics**
Action Recommendation 3. **Develop database to monitor all research activities.**
Person(s) responsible - **Head of the department.** **- The Higher Studies and Research Committee**
Timelines **December 2010**
Resources Required **Build a comprehensive database to register and monitor all research activities, funds and publications for all research units at the department.**

Action Recommendation 4 **Develop an efficient system for the maintenance of laboratory equipment.**
Person (s) responsible **- Committee of equipments and facilities** **- Department head** **- The college's dean**
Timelines (For total initiative and for major stages of development) **• Within one year**
Resources Required **1- Financial and Governmental Aid** 2- **Funds**
Action Recommendation 5 **Develop a system that identifies community service opportunities; devise system of rewards and evaluation**.
Person (s) responsible **- Department head** **- the Community service committee**
Timelines (For total initiative and for major stages of development) **December 2010**
Resources Required Current resources are sufficient.

Continue for further action recommendations.