

**Kingdom of Saudi Arabia  
The National Commission for Academic Accreditation &  
Assessment**

**COURSE SPECIFICATION  
ZOO 497  
Applied Training in Zoology**

Zoology Department  
College of Science  
King Saud University

**October 2011**

# Course Specification

*For Guidance on the completion of this template, please refer to of Handbook 2 Internal Quality Assurance Arrangements*

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

## A Course Identification and General Information

1. Course title and code: <b>Applied Training (Zoo 497)</b>
2. Credit hours <b>2.0 (0 + 2)</b>
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)  <b>Zoology program</b>
4- Name of faculty member responsible for the course
5- Level/year at which this course is offered <b>Seventh level</b>
6- Pre-requisites for this course (if any)  <b>Zoo-342 (Molecular Biology)</b>
7. Co-requisites for this course (if any)  <b>None</b>
8. Location if not on main campus

**B- Objectives:**

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

- **Preparing, training and elevating efficiency and performance of the student's skills in the scientific and applied fields related to labor market requirements.**
- **Finding the appropriate solutions for social and economic problems related to science and technology.**
- **Setting up a strong base from well-trained cadres in various scopes of life sciences and biotechnologies.**
- **Providing a competitive scientific and practical milieu enabling to do the best effort.**

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

- **Annual review of course by departmental course planning committee.**
- **Updating the course with latest developments in the field.**
- **Annual review and updating practical sessions with new experiments, slides and new preparations.**
- **Updating course resources using internet materials.**
- **Comparison of course topics with equivalent local and international courses.**

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

<b>1 Topics to be Covered</b>		
<b>Topic</b>	<b>No of Weeks</b>	<b>Contact hours</b>
<ul style="list-style-type: none"><li>• Hands on training students on various instruments, equipment and recent techniques in the specialized field. These equipment include:<ul style="list-style-type: none"><li>- Polymerase Chain Reaction (PCR)</li><li>- DNA Sequencer</li><li>- DNA Microarray</li><li>- Enzyme Linked Immune-Sorbent Assay (ELISA)</li></ul></li></ul>	4	8

- Semen Analyser - Micromanipulater		
• Acquiring skills of how to draw and record the scientific data.	2	4
• Training students on the appropriate routes to reach to the data base and various learning sources related to the specialized field of study.	4	8
• Preparing and writing down lab reports and how to draw conclusions recommendations.	2	4
• Preparing and presenting the scientific results in an informative and simple way to the related audiences.	2	4
	14	28

2 Course components (total contact hours per semester):			
Lecture: -	Tutorial:	Practical/Fieldwork/Internship: <b>28</b>	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)
28

4. Development of Learning Outcomes in Domains of Learning
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>• A brief summary of the knowledge or skill the course is intended to develop;</li> <li>• A description of the teaching strategies to be used in the course to develop that knowledge or skill.</li> <li>• The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
(i) Description of the knowledge to be acquired
<ul style="list-style-type: none"> <li>• <b>Determine the scientific researches in the specialized periodicals.</b></li> <li>• <b>Acquaintance with different methods of information collection from</b></li> </ul>

<p><b>different sources.</b></p> <ul style="list-style-type: none"> <li>• <b>The ability to be familiar with designing and executing experiments.</b></li> <li>• <b>The ability to collect data</b></li> <li>• <b>Discuss the obtained results and reaching to conclusions and recommendations.</b></li> <li>• <b>Writing and submitting the final report.</b></li> </ul>
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> <li>• <b>Laboratory practice and microscope examination. (Conducting experiments and writing reports).</b></li> </ul>
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> <li>• <b>Evaluation of lab reports, designing and executing experiments</b></li> <li>• <b>Evaluation of student activities and data collection.</b></li> </ul>
<p><b>b. Cognitive Skills</b></p>
<p>(i) Cognitive skills to be developed</p> <ul style="list-style-type: none"> <li>• <b>Collect blood samples.</b></li> <li>• <b>Prepare slides and samples.</b></li> <li>• <b>Prepare chemical solution.</b></li> <li>• <b>Conduct researches and analyse data.</b></li> <li>• <b>Use computers and internet.</b></li> </ul>
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> <li>• <b>Laboratory training on different designing experiments.</b></li> <li>• <b>Using illustrations and power point presentation</b></li> </ul>
<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> <li>• <b>Evaluation of lab reports and examinations.</b></li> <li>• <b>Evaluation of student activities and homework.</b></li> <li>• <b>Estimation of the final report.</b></li> </ul>
<p><b>c. Interpersonal Skills and Responsibility</b></p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> <li>• <b>Ability to work in a team to conduct deal with specific project.</b></li> <li>• <b>Ability to work independently to conduct a specific project.</b></li> <li>• <b>Ability to present results of work to others.</b></li> </ul>
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> <li>• <b>Close monitoring while performing practical work and data collection</b></li> </ul>

<ul style="list-style-type: none"> <li>• <b>Using power point presentation and illustration.</b></li> </ul>
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> <li>• <b>Assessment of student cooperation in lab sessions.</b></li> <li>• <b>Assessment of the obtained lab results and final reports.</b></li> </ul>
<p><b>d. Communication, Information Technology and Numerical Skills</b></p>
<p>(i) Description of the skills to be developed in this domain.</p> <ul style="list-style-type: none"> <li>• <b>Ability to work in a team to conduct a practical work.</b></li> <li>• <b>Ability to solve problems.</b></li> <li>• <b>Ability to computers and internet to search and restore the information.</b></li> </ul>
<p>(ii) Teaching strategies to be used to develop these skills</p> <ul style="list-style-type: none"> <li>• <b>Promoting students to submit activities, assignments and writing reports.</b></li> </ul>
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ul style="list-style-type: none"> <li>• <b>Evaluating the final written reports</b></li> <li>• <b>Evaluating activities and results</b></li> </ul>
<p><b>e. Psychomotor Skills (if applicable)</b></p>
<p>(i) Description of the psychomotor skills to be developed and the level of performance required</p> <p><b>Not applicable</b></p>
<p>(ii) Teaching strategies to be used to develop these skills</p> <p><b>Not applicable</b></p>
<p>(iii) Methods of assessment of students psychomotor skills</p> <p><b>Not applicable</b></p>

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	<b>Collection of scientific information</b>	<b>3-4-5</b>	<b>20%</b>
2	<b>Executing the practical experiment</b>	<b>6-7-8-9</b>	<b>40%</b>

3	<b>Writing and submitting final report</b>	10-11-12-13	40%
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#### D. Student Support

1. Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

- **Direct supervision by staff member over lab. Sessions.**
- **Office hours 7 hr/ week**

#### E Learning Resources

1. Required Text(s)
- The required textbook is determined according to the research subject by the instructor.
2. Essential References
3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)
<b>The periodicals will be determined accordingly.</b>
4-.Electronic Materials, Web Sites etc
5- Other learning material such as computer-based programs/CD, professional standards/regulations
• <b>Microsoft office package</b>

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
• <b>Equipped laboratories.</b>
2. Computing resources

#### G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching
• <b>Distribution of questionnaires for course evaluation by students.</b>
• <b>Students- faculty meetings.</b>
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department
• <b>Peer consultation by departmental specialised committee.</b>
• <b>Self-evaluation of the programme by the departmental studying plan</b>
3 Processes for Improvement of Teaching
• <b>Installation of modern microscopes and digital labs</b>
• <b>Implementation of suggestions by departmental specialised committee.</b>

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

- **Reviewing assessments by staff member/chairman/special committee when required and instructed by higher administration at the end of each semester.**

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- **Comparison of course with equivalent courses.**
- **Reviewing course topics annually by the departmental specialised committee.**
- **Refreshment of teaching resources to ensure updating of knowledge.**
- **Use of statistics for course evaluation by students to improve the course.**