**ATTACHMENT 2 (e)**

**Course Specifications**

**Kingdom of Saudi Arabia**

**The National Commission for Academic Accreditation & Assessment**

# Course Specifications
# (CS)

## Farm Animal Physiology Laboratory - ANPR 254

# Course Specifications

| Institution | Date of Report |
|---|---|
| **King Saud University** | **March 2015** |
| College/Department | |
| **College of Food and Agriculture Sciences, Department of Animal production** | |

## A. Course Identification and General Information

1. Course title and code:
**Farm Animal Physiology Laboratory - ANPR 254**

2. Credit hours **1 hours 1(0+1)**

3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)
**Animal production**

4. Name of faculty member responsible for the course
**Prof. Aly B. Okab** and **Dr Emad M. Samara**

5. Level/year at which this course is offered **5th level / 3rd year** university students

6. Pre-requisites for this course (if any)
**ANPR 220**

7. Co-requisites for this course (if any)
**None**

8. Location if not on main campus
**Lecture room No. 2A07**
**Lab. No. 1A19**

9. Mode of Instruction (mark all that apply)

| | | | |
|---|---|---|---|
| a. Traditional classroom | √ | What percentage? | 70 % |
| b. Blended (traditional and online) | √ | What percentage? | 30 % |
| c. e-learning | | What percentage? | |
| d. Correspondence | | What percentage? | |
| f. Other | | What percentage? | |

Comments:
**Farm Animal Physiology Laboratory (ANPR 254) is a compulsory course that explain the microscope components, types, and applications; Blood analysis; Spectrophotometry, Tissues, Anatomy, histology, and physiology of digestive, respiratory, muscular, reproductive, and urinary systems.**

## B Objectives

1. What is the main purpose for this course?

**At the end of the semester , students are expected to:**

- **1.1 Describe the microscope components, types, and applications in physiological experiments.**
- **1.2 Anatomy, histology, and physiology of digestive, respiratory, muscular, reproductive, and urinary systems.**
- **1.3 Effectively use of laboratory tools to evaluate the blood and plasma parameters.**

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

- **2.1 Increase personal skills to use of IT or web-based reference material for newly methods for blood, plasma and hormonal analysis.**
- **2.2 Students use Web-CT for uploading materials related to course contents.**
- **2.3 Improving teaching methodology using modern techniques.**

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

1. Topics to be Covered

| List of Topics | No. of Weeks | Contact Hours |
|---|---|---|
| **Microscope applications** | **2** | **2** |
| **Blood Analysis** | **4** | **4** |
| **Spectrophotometers** | **1** | **1** |
| **Tissues (Anatomy and histology)** | **3** | **3** |
| **Anatomy, histology, and physiology of digestive System** | **1** | **1** |
| **Anatomy, histology, and physiology of respiratory System** | **1** | **1** |
| **Anatomy, histology, and physiology of muscular System** | **1** | **1** |
| **Anatomy, histology, and physiology of reproductive System** | **1** | **1** |
| **Anatomy, histology, and physiology of urinary System** | **1** | **1** |
| **Total** | **15 w** | **15 hr** |

2. Course components (total contact hours and credits per semester):

| | Lecture | Tutorial | Laboratory | Practical | Other: | Total |
|---|---|---|---|---|---|---|
| Contact Hours | none | none | **15** | none | none | **15** |
| Credit | none | none | **1 (0 + 1)** | none | none | **1 (0 + 1)** |

3. Additional private study/learning hours expected for students per week.

**3 hours for the semester (field trip to the experimental station to learn how to handle the animals and how to withdraw a blood sample)**

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The ***National Qualification Framework*** provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

| | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|---|---|---|---|
| **1.0** | **Knowledge** | | |
| 1.1 | Describe the structure of microscope. | Lecture- discussion | Lab reports as well as Midterm and final written exams |
| 1.2 | Define the uses of microscope in animal physiology | Class discussion and homework | Lab reports as well as Midterm and final written exams |
| 1.3 | List the blood and plasma analysis. | Lecture- discussion | Lab reports as well as Midterm and final written exams |
| 1.4 | List down the animal body organs and different systems. | Lecture- lab discussion | Lab reports as well as Midterm and final written exams |
| **2.0** | **Cognitive Skills** | | |
| 2.1 | Summarize the microscope parts and its uses in practical animal physiology. | Lecture and Lab. discussions | Presentations |
| 2.2 | Calculate blood cell counts, and differentiate white blood cells. | Lecture-discussions | Lab reports |
| 2.3 | Explain structure and physiology of Respiratory, Digestive, Reproductive and Urinary Systems. | Lecture-discussions | Lab reports as well as Midterm and final written exams |
| **3.0** | **Interpersonal Skills & Responsibility** | | |
| | Not Applicable | Not Applicable | Not Applicable |
| **4.0** | **Communication, Information Technology, Numerical** | | |
| 4.1 | Demonstrate anatomy, histology, and physiology of digestive, respiratory, muscular, reproductive, and urinary systems. | Group assignments | Lab reports as well as Midterm and final written exams |
| **5.0** | **Psychomotor** | | |
| | Not Applicable | Not Applicable | Not Applicable |

**Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching**

| NQF Learning Domains | Suggested Verbs |
|---|---|
| | |
| **Knowledge** | list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write |
| **Cognitive Skills** | estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise |

| | |
|---|---|
| **Interpersonal Skills & Responsibility** | demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write |
| **Communication, Information Technology, Numerical** | demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize |
| **Psychomotor** | demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct |

Suggested ***verbs not to use*** when writing measurable and assessable learning outcomes are as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Consider | Maximize | Continue | Review | Ensure | Enlarge | Understand |
| Maintain | Reflect | Examine | Strengthen | Explore | Encourage | Deepen |

Some of these verbs can be used if tied to specific actions or quantification.

**Suggested assessment methods and teaching strategies are:**

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humor, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

5. Schedule of Assessment Tasks for Students During the Semester

| | Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment |
|---|---|---|---|
| 1 | **Midterm** | **Week 8** | **20 %** |
| 2 | **Participation** | **All along** | **10 %** |
| 3 | **Quizzes** | **All along** | **10 %** |
| 4 | **Lab reports** | **All along** | **40 %** |
| 5 | **Final exam** | **Week 16** | **20 %** |
| | **Total** | | **100 %** |

## D. Student Academic Counseling and Support

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| 1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)<br><br>**1 hour per week** |

## E. Learning Resources

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| 1. List Required Textbooks<br><br>**Cunningham's Textbook of Veterinary Physiology, 5e (2012). Bradley G. Klein (Editor).** |
| 2. Essential References<br><br>**1. Jain N.C. 1993. Essentials of Veterinary Hematology. Wiley Inc.**<br><br>**2. Stevens A., Lowe J.S., and Scott I. 2012. Veterinary Hematology: A Diagnostic Guide and Color Atlas. Elsevier Inc.** |
| 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)<br>**1. Journal of physiology.**<br>**2. Journal of Animal Science.**<br>**3. Journal of Animal Physiology and Animal Nutrition** |
| 4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)<br>**1. Science Direct**<br>**2. Springer link**<br>**3. Blackwell Synergy** |
| 5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.<br><br>**None** |

## F. Facilities Required

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| Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.) |
| 1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)<br>**Technician lab needed** |

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| 2. Computing resources (AV, data show, Smart Board, software, etc.)<br>**Laptop computer - projector system - data show** |

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| 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)<br>**None** |

## G Course Evaluation and Improvement Processes

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| 1.Strategies for Obtaining Student Feedback on Effectiveness of Teaching<br>1.1 Midterm evaluation feed-back form to increase instructor's awareness of the weak and strong points of the class<br>1.2 End of term college evaluation of course by students ( to be collected by the department)<br>1.3 End-of-term debriefing in class of students and teacher regarding what went well and what could have gone better<br>1.4 Small group instructional diagnosis (SGID) whereby instructors exchange classes and gather information from each others' students on specific points outlined by the department and the instructor being evaluated. |
| 2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor<br>2.1 Peer evaluation to asses ability of faculty members to work with their colleagues<br>2.2 Cass observations by supervisors |
| 3.Processes for Improvement of Teaching<br>3.1 Training sessions<br>3.2 Workshops to facilitate the exchange of experiences amongst faculty members<br>3.3 Regular meetings where problems are discussed and solutions given<br>3.4 Discussion of challenges in the classroom with colleagues and supervisors<br>3.5 Encouragement of faculty members to attend professional development conferences<br>3.6 Keep up to date with pedagogical theory and practice<br>3.7 Set goals for achieving excellence in teaching at the beginning of each new semester after reviewing last semester's teaching strategies and results |
| 4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution). None |

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| 5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.<br>5.1 Compare syllabi and course description with other universities (including those on the net)<br>5.2 Biannual meetings of faculty members to discuss improvement<br>5.3 Have a curriculum review committee to review the curriculum periodically and suggest improvements |

Faculty or Teaching Staff: **Prof Aly B. Okab and Dr Emad M. Samara**

Signature: _____ Date Report completed: **1st March 2015**

Received by: _____ Dean/Department Head

Signature: _____ Date: _____