



المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Course Specifications

| | |
|---|-------|
| Institution: University of Tabuk | Date: |
| College/Department : Ummalaj University College/ Department of Biology | |

A. Course Identification and General Information

| | | |
|--|--|----------------------------------|
| 1. Course title and code: Animal Microtechnique (BIO356) | | |
| 2. Credit hours: 3 CreditHours (2 theoretical+2 Practical) | | |
| 3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Biology | | |
| 4. Name of faculty member responsible for the course: | | |
| 5. Level/year at which this course is offered: Level 3 | | |
| 6. Pre-requisites for this course (if any): General Biology 2 (BIO 202) | | |
| 7. Co-requisites for this course (if any): None | | |
| 8. Location if not on main campus:. | | |
| 9. Mode of Instruction (mark all that apply): | | |
| a. traditional classroom | <input checked="" type="checkbox"/> What percentage? | <input type="text" value="75%"/> |
| b. blended (traditional and online) | <input type="checkbox"/> What percentage? | <input type="text"/> |
| c. e-learning | <input type="checkbox"/> What percentage? | <input type="text"/> |
| d. correspondence | <input type="checkbox"/> What percentage? | <input type="text"/> |
| f. other (Lab work) | <input checked="" type="checkbox"/> What percentage? | <input type="text" value="25"/> |
| Comments: | | |

B Objectives

1. What is the main purpose for this course?

Student should have a clear concept of the following

- Preparing different types of chemical fixatives
- Identifying steps used in animal micro-techniques and staining slides
- Light Microscope and their techniques
- Electron Microscope and their techniques

Animal tissues samples preparation of electron microscopy (TEM&SEM)

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)

- Course planning committee reviews the contents of the course annually.
- Updating the course with latest research in the field.
- Annual review and updating practical sessions with new experiments and new preparations.
- Use of Internet Search on the subject.
- Comparison of course topics with equivalent local and international courses.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered

| List of Topics | No. of Weeks | Contact hours |
|---|--------------|---------------|
| Fixatives: Advantages & Disadvantages | 1 | 3 |
| Light Microscopy and Animal Micro-techniques | 1 | 3 |
| Transmission Electron Microscope | 1 | 3 |
| Transmission Electron Microscope and Techniques | 1 | 3 |
| Scanning Electron Microscope and its techniques | 1 | 3 |
| Dehydrating agents and methods | 1 | 3 |
| Clearing and Embedding | 1 | 3 |
| Revision and Pre Final Exam | | |
| Mid Term Vacation | | |
| Preparatory method techniques of animal and plant tissues | 1 | 3 |
| General principals of sectioning technique | 1 | 3 |
| Different types of microtomes | 1 | 3 |
| Sectioning method | 1 | 3 |
| Chemical basis of Stains | 1 | 3 |
| Staining, whole mount. Revision | 1 | 3 |
| Final Exam | | |

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

| | | Lecture | Tutorial | Laboratory/ Studio | Practical | Other: | Total |
|---------------|---------|---------|----------|-----------------------|-----------|--------|-------|
| Contact Hours | Planned | 26hr | N.A. | 26hr | N.A. | N.A. | 52hr |
| | Actual | | | | | | |
| Credit | Planned | | | | | | |
| | Actual | 2 | | 1 | | | 3 |

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

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

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned. – 2 Exams 2nd and 4th Month
- Written Papers about the Various Aspects of the Course

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. (Courses are not required to include learning outcomes from each domain.)

| Code # | NQF Learning Domains And Course Learning Outcomes | Course Teaching Strategies | Course Assessment Methods |
|------------|---|--|--|
| 1.0 | Knowledge | | |
| 1.1 | Define and describe the microscopy | Able to memorize the terminology | In class short MCQs quizzes (orally and written) Major and final exams |
| 1.2 | Dealing with Light Microscopy, applications and operations | Able to tell and write their own ideas about the Animal Sample | Web site and computer assisted learning |
| 1.3 | Recognize the structures of compound microscope pictures, Knowing how to prepare samples and reagents for TEM and SEM | In-class lecturing where the previous knowledge is linked | |

| | | | |
|------------|--|--|--|
| | | to the current and future topics Weekly Tutorial discussions | |
| 2.0 | Cognitive Skills : | | |
| 2.1 | Differentiate the different parts of microscope Explain the proper usage of the Light Microscope. | Encouraging student to discuss, summarize and plan what they learned and able to explain | In class short MCQs Diagram representation and quizzes |
| 2.2 | Summarize and operational requirements of Light and Electron Microscope. | Oral Quiz in each lecture Problem solving in the lecture | Major and final exams Checking the problems solved in the lecture |
| 2.3 | Develop to identify the microtome knives Training the necessary skills of making a tissue samples | Oral Quiz in each lecture Problem solving in the lecture | Major and final exams Checking the problems solved in the lecture |
| 3.0 | Interpersonal Skills & Responsibility | | |
| 3.1 | Demonstrate and develop interpersonal skill Improve student acceptance skill from other during discussion. Work independently and as part of a team. | Analyze through discussions skill tutorial sessions | Evaluate through oral and written questions quiz |
| 3.2 | Manage and calculate resources, time and other members of the group, Write results of work to others | Analyze through group experiments and writing group reports. | Manage and calculate resources, time and other members of the group, Write results of work to others |
| 3.3 | Ability to communicate results of work to others. | Student's ability to interpret various histological features | |
| 4.0 | Communication, Information Technology, Numerical | | |
| 4.1 | Demonstration and use of internet and specifically MS office | Demonstrate the use and operation of computer in the course requirements | In class short MCQs quizzes (orally and written) |
| 4.2 | Illustrate the use of new tools in technology, Use the computer for following up the latest in animal sample and research | | Asses through major and final exams |
| 4.3 | Enable students to work in a team to conduct a specific project. Enable students to search and discuss. Enable students to discuss abnormal structure of histological sections | | |
| 5.0 | Psychomotor: NOT APPLICABLE | | |

5. Schedule of Assessment Tasks for Students During the Semester

| | Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment |
|---|---|----------|--------------------------------|
| 1 | Quiz | 5 | 10% |
| 2 | Mid-termlab Exam | 8 | 10% |
| 3 | Finallab Exam | 15 | 15% |
| 4 | MidtermTheoryExam | 8 | 25% |
| 5 | FinalTheoryExam | 16 | 40% |

D. Student Academic Counseling and Support

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)

- Office hours 8 hr/week
- help sessions 1hr/week aided by two faculty members

E Learning Resources

1. List Required Textbooks

Al-Khalifa, M. S. and Al-Saleh, A. A. (2008). "Microscopes and their Technology" Scientific Publications King Saud University pp 378

2. List Essential References Materials (Journals, Reports, etc.)

Not Applicable

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Websites on the internet that are relevant to the topics of the course

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

Multi-media associated with the textbook and the relevant websites

F. Facilities Required

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

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

Available laboratory accommodate up to 30 students.

2. Technology resources (AV, data show, Smart Board, software, etc.)

Well-equipped lab and lecture room with computers and display screens installed with curtains on the windows are required.

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) : None

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Course evaluation by student
- Students-faculty meetings

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- Peer consultation on teaching
- Departmental council discussions
- Discussions within the group of faculty teaching the course

3. Processes for Improvement of Teaching

- Conducting workshops given by experts on the teaching and learning methodologies
- Periodical departmental revisions of its methods of teaching
- Monitoring of teaching activities by senior faculty members

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)

- Providing samples of all kinds of assessment in the departmental course portfolio of each course
- Assigning group of faculty members teaching the same course to grade same questions for various students. Faculty from other institutions are invited to review the accuracy of the grading policy

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

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- The head of department and faculty take the responsibility of implementing the proposed changes

Name of Course Instructor:

Signature:

Date Specification Completed:

Program Coordinator:

Signature: _____

Date Received: _____