

UNIVERSITY OF CALICUT

(Abstract)

B.Sc Programme in Zoology – under Choice based Credit Semester System – Scheme and Syllabus – implemented with effect from 2009 admission onwards – approved – orders issued.

GENERAL & ACADEMIC BRANCH - I 'J' SECTION

No. GAI/J1/4609/06.

Calicut University P.O, Dated. 25-06-2009.

- Read: 1. U.O. No. GAI/J2/3601/08 (vol. II) dated 19-06-09.
2. Minutes of meeting of Board of Studies in Zoology (UG) held on 16-12-2008 and 16-02-2009.
3. Item No. 2 (iii) of the minutes of meeting of Faculty of Science held on 05-05-2009.
4. Item No. II A.3 of the minutes of meeting of the Academic Council held on 14-05-2009.

ORDER

Choice based Credit Semester System and Grading has been introduced for U.G. curriculum in all affiliated colleges in the University with effect from 2009 admission onwards and the regulation for the same implemented vide paper read as 1 above.

As per paper read (2) above, the Board of Studies has resolved to approve the Scheme and Syllabus of B.Sc. programme in Zoology under Choice based Credit Semester System.

As per paper read (3) & (4) above, the Faculty of Science at its meeting held on 05-05-2009 endorsed the minutes of Board of Studies and the Academic Council held on 14-05-2009 approved the same.

Sanction has therefore, been accorded to implement the Scheme and Syllabus of B.Sc programme in Zoology under Choice based Credit Semester System in the University with effect from 2009 admission onwards.

Orders are issued accordingly. Scheme and Syllabus appended.

Sd/

**DEPUTY REGISTRAR (G & A I)
FOR REGISTRAR**

To

The Principals of all affiliated Colleges
offering B.Sc Programme in Zoology.

Copy to:

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System Administrator with a request to upload in the University

Website/Tabulation section/Enquiry/GAI F section/SF/DF/FC.

Forwarded/ By Order

SECTION OFFICER

UNIVERSITY OF CALICUT

B.Sc. ZOOLOGY PROGRAMME

SYLLABUS

CORE COURSES

COMPLEMENTARY COURSES

&

OPEN COURSES

With effect from 2009-10 admission

MODEL QUESTION PAPERS

**INTRODUCTION,
GUIDELINES
AND
GENERAL INFORMATION**

INTRODUCTION

The Programme of Higher Education in Kerala is about to witness a drastic change from 2009-'10 admission onwards with the introduction of Semesterisation and Grading at the undergraduate level. The system is being implemented under the direction of Kerala State Higher Education Council (KSHEC) which has worked out the policy after a number of deliberations and consultations with experts in the field of education and Chairpersons of Boards of Studies (BOS) of all universities in Kerala. The KSHEC directed all BOS to conduct five-day workshops to frame curricula and draft syllabi to suit the semester system for which financial assistance was sanctioned to each BOS. Accordingly, the BOS in Zoology (U. G.) requested all affiliated colleges, affiliated to the University of Calicut, which offer Zoology as a Degree Programme, to depute at least one faculty member to attend the five-day workshop organized in the Senate Hall, University of Calicut from 19.01.2009 to 23.01.2009. A total of 30 faculty members from various colleges participated in the workshop and contributed their share in drafting the curriculum and syllabus (List of participants appended). The workshop was inaugurated by Prof. Anwar Jehan Suberi, the Hon'ble Vice-Chancellor of the University, on 19.01.2009. In his valedictory address on 23.01.2009, Dr. C. Gopinathan Pillai, the Hon'ble Pro-Vice-Chancellor of the University, emphasized the need for change in the existing pattern of UG curriculum.

The curriculum, the syllabus, the scheme of instruction, evaluation and model question papers were framed during the workshop. After the workshop, the BOS in Zoology (U. G.) met again on 16.02.2009 to discuss the draft in detail and finalised the syllabus. The Board recommends that the new syllabus may be implemented with effect from 2009 admission onwards.

The restructured curriculum for the B. Sc. Degree Programme in Zoology is a Choice Based Credit Semester System of six semesters, offering freedom for the students to choose an open paper each in the fifth and sixth semesters. A Semester will be of 90 days duration including end-semester exam with a total of 450 contact hours for instruction. The total number of credits required for the programme is fixed at 120. The total number of courses for the programme will be 30. The break up is as follows:

- | | | |
|----|-------------------------|------|
| 1. | Common Course | : 10 |
| 2. | Core Course | : 11 |
| 3. | I Complementary Course | : 4 |
| | II Complementary Course | : 4 |
| 4. | Open Course | : 1 |

The common and complementary courses will be completed by the end of fourth semester. In the fifth semester the students have the freedom to choose one open course from any other stream. The open course in the sixth semester is the elective course from the same stream.

The syllabus for the B. Sc. degree programme with Zoology as core subject of study has provision for both theory and practical components in all the six semesters. In addition to the end-semester examinations to be conducted by the University, a system of continuous evaluation through **Internal Assessment** by the faculty members of the Department of Zoology of the respective institutions must be adopted for Zoology core courses. The assessment of students involves 75% for External Evaluation and 25% for Internal Assessment. Examinations for theory courses will be held at the end of each semester. Examination for the practicals for the first four semesters will be held at the end of the fourth semester and those of fifth and sixth semesters at the end of the sixth semester. Practical courses offered are designed to support the theory topics and also to impart basic skills and techniques required of them.

For developing the learning and understanding skill of students, some pertinent topics are suggested for Seminar / Assignment / Group discussion / Self study. But these topics are not meant for external examinations.

In addition to the items for practical, a project work forms an integral part of the curriculum during the fifth and sixth semesters. Field trips / Study tour to places of biological interest, of not less than five days, are also compulsory elements of the curriculum. Students are required to visit different ecological sites for observing animals in their natural habitats. Out of the five days one day must be for tour related to Open Course II (Elective). They shall also visit Institutes / Museums / Zoos, etc. for collecting additional biological information.

All possible attempts have been made to update the syllabus by incorporating current and most recent developments in various branches of Zoological Sciences. In addition, to make the study of Zoology more animal friendly, the participants in the workshop unanimously agreed to do away with the dissections on frog, a most important link in food web, which is slowly disappearing from our immediate environment. An important aspect of core courses is the inclusion of two courses in methodology to be taught in the first and second semesters. This will give the student a basic understanding about Science in general and Zoology in particular. However, limitation of instructional hours, due to the addition of three general courses during the first three semesters, was a major hurdle in incorporating more advanced topics in the core courses offered during the last three semesters.

The present system of assessing the students by awarding marks is discarded and a method of grading on a five-point scale is adopted which is as follows:

Grade	Grade points	Grade Point Average Range
A	4	3.5 to 4
B	3	2.5 to 3.49
C	2	1.5 to 2.49
D	1	0.5 to 1.49
E	0	Less than 0.5

SCHEME OF INSTRUCTION

For the B. Sc. Zoology programme, Zoology forms the core course. It is to be taught during all the six semesters. Both theory and relevant practical components are included for study during the six semesters (Table I).

A. Theory

The total number of core theory courses is ten, one course each during the first four semesters, and three courses each during the fifth and sixth semesters. The theory core course I (code: ZO1B01) prescribed for the first semester and core course II (code: ZO2B03) for the second semester are of 36 hours in syllabus (2 hours/ week) with 2 credits each. The theory core course III (code: ZO3B05) for third semester and core course IV (code ZO4B07) for fourth semester are of 54 hrs (3 hours/ week) with 3 credits each. Core course V (code: ZO5B09) of fifth semester and core course VIII (code: ZO6B14) of sixth semester are of 72 hrs (4 hours/ week) with 3 credits each. Core course theory VI (code: ZO5B10), VII (code: ZO5B11) of fifth semester and core course IX (code: ZO6B15) and core course X (code: ZO6B16) of sixth semester are of 54 hours in syllabus (3 hours/ week) with 3 credits each.

In the fifth semester, under open course I for students from other streams, three courses are prescribed. Open course of (3hours/week) and 54 hours in the syllabus with 4 credits. An institution can choose any one of the following:

Open Course :

- Code : ZO5D: 01. Human Health and Sex Education
 02. Nutrition, Health and Hygiene
 03. Applied Zoology

Towards achieving vocationalisation, three topics are prepared under Elective Course of sixth semester for Zoology core students. Elective course is of (3hours/week) and of 54 hours in the syllabus with 2 credits. An Institution can choose any one of the following:

Core Course XI: (Elective)

- Code : ZO6B17(E): 01. Human Genetics
 02. Aquaculture, Animal Husbandry and Poultry
 03. Applied Entomology

B. Practical

Practicals corresponding to each core course will be conducted during the corresponding semesters. A combined examination relating to the first four core courses will be held at the end of fourth semester and that will be designated as Practical I (2 hours/ week) with 144 hours and a total credit of 4. Practical related to core courses V and VIII form Practical II (5 hours/ week) and 180 hours/ semester and Practical related to core courses VI, VII, IX and XI (Elective) for

Practical III 5 hours/ week) and 180 hours duration. Credit for Practical II and III is 8 each and examination will be conducted at the end of the sixth semester.

Any candidate, who turns up for a practical examination, must submit authentic record/ report of work done by him/ her at the time of practical examinations. All practical examinations are of **three hours** duration.

C. Project [Code : ZO6B20 (Pr)]

Project works extend over the fifth and sixth semesters (2 hours/ week), credit 4. Topics related to any of the theory courses can be selected. Not more than **12** students can form a group and undertake a project. Each individual student should submit a copy of the project report duly attested by the supervising teacher and the Head of the Department.

D. Internal Assessment

The process of Internal Assessment must be transparent. There shall not be any chance for favouritism, victimization, discrimination or whatsoever. To avoid unpleasant situations being created, the following precautions may be taken.

1. Assignments and answer scripts of class tests are to be returned after evaluation. Grievances, if any, may be redressed forthwith. Then the papers may be collected and kept in the Department for further reference.
2. Tabulated statement of internal evaluation must be put up on the department notice board prior to despatch to the University towards the end of each semester.
3. A grievance redressal committee may be constituted at the Department level to supervise re-tests, seminars, evaluation of assignments etc.

Each student has the right to appeal against any injustice in the internal assessment / evaluation. This can be raised at three levels.

1. He/ She may appeal against the injustice to the teacher concerned.
2. If not satisfied, he/ she may plead to the Head of the Department, who will then discuss the case with all faculty members of the Department and come to a conclusion.
3. If the candidate again feels that justice has not been served at this level too, he/ she may bring the matter before the Principal for a final hearing. The Principal will constitute a committee consisting of two members of the college council (nominated by the Principal), Head of the Department of Zoology, and the Principal himself / herself. The decision taken by the committee shall be final and binding. Model tabulation sheets for internal assessment score (theory and practical papers) are appended herewith.

SCHEME OF EVALUATION

The performance of a student in the course / programme is to be assessed in terms of grades. Evaluation is conducted through (I) Continuous Internal Assessment and (II) End-Semester External Examination. Internal Assessment fetches 25% and External Examination 75%. Weightage of a course is 30. Weightage for internal assessment is 5 and for external evaluation 25 for both theory and practical (Table II).

1. Continuous evaluation through Internal Assessment = 25%; Weightage: 5

Internal Assessment will be a continuous process. It will be done by faculty members of the department of Zoology of the institution where the candidate is pursuing the study. It will be based on the student's attendance, performance in class tests, term examination, seminars, group discussions and submission of assignments, records and reports. Students will be graded on a five-point scale which provides sufficient space for differentiation and categorization.

A. Theory: 25%; Weightage: 5

Criteria for Internal Assessment:

Sl. No.	Parameter	% of Internal Assessment	Weightage
(a)	Attendance	5%	1
(b)	Class tests (2 Nos.)	10%	2
(c)	Seminar	5%	1
(d)	Assignment	5%	1
Total		25%	5

(a) Attendance

90% and above	5%	A Grade
80% to 89%	4%	B Grade
75% to 79%	3%	C Grade

But a student with below 75% attendance cannot appear for the examination.

(b) Class Tests

Two class tests must be conducted during the semester for each course, each test with 5% of the internal assessment. Questions of the class test can be objective

type, short answer, short essay or long essay and graded on a five-point scale. For short essays and long essays the following pattern of grading is to be followed.

<u>Nature of Answer</u>	<u>Grade</u>	<u>Grade point</u>
Excellent	A	4
Very good	B	3
Good	C	2
Average	D	1
Poor	E	0

(c) Seminar

It is to be graded based on the timely presentation, way of presentation, matter content, etc. Taking into account all these factors students can be graded on the five-point scale as given in (b) above.

(d) Assignment

It is to be graded based on timely submission, content, etc. on the five-point scale as given in (b) above.

B. Practical: 25%; Weightage: 5

Criteria for internal assessment

Sl. No.	Parameter	% of Internal Assessment	Weightage
(a)	Attendance	5%	1
(b)	Punctuality, Performance, etc.	5%	1
(c)	Class test (2 Nos.)	5% for each test - Total : 10%	2
(d)	Record	5%	1
	Total	25%	5

- (a) Attendance:** Same as given for theory (a) above
- (b) Punctuality, performance in lab, etc.:** Grade the students in the five-point scale as given for theory (b) above.
- (c) Class test:** Two class tests must be conducted for a practical course during a semester, each with 5% of internal assessment.
- (d) Record** is to be assessed taking into account the following points:– timely presentation, neatness and contents and is to be graded on the five-point scale as given for theory (b) above.

Internal Assessment Grade – Theory: Weightage = 5

Criteria	Grade	Grade Point	Weightage	Weighted Grade Point
Attendance			1	
Class test			2	
Seminar			1	
Assignment			1	
Total			5	

Internal Assessment Grade – Practical: Weightage = 5

Criteria	Grade	Grade Point	Weightage	Weighted Grade Point
Attendance			1	
Punctuality, Performance, etc.			1	
Class test			2	
Record			1	
Total			5	

(c) Project, Study tour, Viva: Weightage: 5

Criteria for Internal Assessment

<u>Item</u>	<u>Weightage</u>
Project	3
Study tour	1
Viva Voce	1
Total	<u>5</u>

A student shall be assessed for the above three requirements according to the five point scale. Follow the criterion for theory (b) above.

Internal Assessment Grade: Project / Study tour / Viva-Voce

Crtieria	Grade	Grade Point	Weightage	Weighted Grade Point
Project			3	
Study tour			1	
Viva-Voce			1	
Total			5	

UNIVERSITY OF CALICUT
Tabulation Sheet for Internal Assessment Score
B. Sc. Zoology: Theory course No.....

Name of College :
 Name and Code No. of Course :
 Month, Year and Semester of Examination:

Sl. No.	Register No.	Name of Candidate	Weighted Grade Point for				Total Weighted Grade Points	Grade (Total weighted grade point / Sum of weightage)	Remarks	
			Attendance	Class Test		Seminar				Assignment
				1	2					
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Name and Signature of Teacher in Charge

Date:

Head of the Dept. of Zoology

Principal

UNIVERSITY OF CALICUT
Tabulation Sheet for Internal Assessment Score
B. Sc. Zoology: Practical course No.....

Name of College :
 Name and Code No. of Course :
 Month, Year and Semester of Examination :

Sl. No.	Reg. No.	Name of Candidate	Weighted Grade Points for				Total Weighted Grade Points	Grade (Total weighted Grade Points/ Total weightage)	Remarks	
			Attendance	Performance	Class Test					Record
					1	2				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Name and Signature of Teacher in Charge

Date:

Head of the Dept. of Zoology

Principal

II. End Semester External Examination (Conducted by the University)

A. Theory:

One core course each at the end of the first four semesters, three core course and Open Course I at the end of the fifth semester, and three core course and Open Course II (which is the elective course) at the end of sixth semester. Question papers for the conduct of theory examinations shall be set by paper setters appointed by the University, preferably from outside. Answer scripts shall be valued by External Examiners from within the University. The duration of examination is 3 hours per course. External examinations contribute 75% of the grade with a weightage of 25 for each course. Each course will be graded according to the five point scale. Table III illustrates the scheme of question paper along with weightage.

B. Practical:

Practicals related to core courses I to IV of the first four semester form core course Practical I. This Practical examination will be held at the end of the fourth semester. Core course Practical II (related to Core courses V & VIII) and Practical III (related to Core courses VI, VII, IX and XI (Elective) examinations will be held at the end of the sixth semester. The question papers for the conduct of practical examination shall be prepared by the Board of External Examiners appointed by the University. Practical examination is to be conducted by a team of two examiners – one external and one internal. The duration of the examination is 3 hours per course. For each practical course, students will be graded according to the five point scale. Weightage for practical is 25. Table IV illustrates the scheme of question paper along with weightage.

A batch may contain a maximum of 12 candidates per session of the exam.

C. Record

A few changes have been incorporated in the preparation of records. Hand-drawn sketches of whole animals (both macroscopic and microscopic) are not compulsory for the Core course Practical II (Nonchordata and Chordata). The record should contain the scientific name, phylum and class, (for vertebrates order also) of the specimens with notes on identifying features and zoological importance, if any. The students can keep photographs or photostat copies if available and even this is not a must. But diagrams of type animals which are dissected must be drawn to show morphology. Hand-drawn sketches of dissections, mountings and sections also must be given. However, a student should not be penalised for not drawing sketches of whole animals or keeping their photographs or photostat copies.

Records related to the practicals I, II and III shall be evaluated by the examiners on the respective days of practical examination according to the five point scale.