



UNIVERSITY OF CALICUT

Abstract

General and Academic - Faculty of Science - Syllabus of BSc Zoology Programme under CBCSS UG Regulations 2019 with effect from 2019 Admission onwards - Implemented- Orders Issued

G & A - IV - J

U.O.No. 9202/2019/Admn

Dated, Calicut University.P.O, 12.07.2019

*Read:-*1) U.O No. 4368/2019/Admn dated 23.03.2019

2) Item No.1 in the minutes of the meeting of the Board of Studies in Zoology UG held on 25.06.2019

3) Item No. I.12 in the minutes of the meeting of Faculty of Science held on 27.06.2019

ORDER

The Regulations for Choice Based Credit and Semester System for Under Graduate (UG) Curriculum-2019 (CBCSS UG Regulations 2019) for all UG Programmes under CBCSS-Regular and SDE/Private Registration w.e.f. 2019 admission has been implemented vide paper read first above.

The meeting of Board of Studies in Zoology UG held on 25.06.2019 has approved the Scheme and Syllabus of BSc Zoology Programme in tune with the new CBCSS UG Regulations with effect from 2019 Admission onwards, vide paper read second above.

The Faculty of Science at its meeting held on 27.06.2019 has approved the minutes of the meeting of the Board of Studies Zoology UG held on 25.06.2019, vide paper read third above.

Under these circumstances, considering the urgency, the Vice Chancellor has accorded sanction to implement the Scheme and Syllabus of BSc Zoology Programme in accordance with the new CBCSS UG Regulations 2019, in the University with effect from 2019 Admission onwards, subject to ratification by the Academic Council.

The Scheme and Syllabus of BSc Zoology Programme in accordance with CBCSS UG Regulations 2019 is therefore implemented in the University with effect from 2019 Admission onwards.

Orders are issued accordingly. (Syllabus appended).

Biju George K

Assistant Registrar

To

The Principals of all Affiliated Colleges

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Section Officer

UNIVERSITY OF CALICUT



B.Sc. ZOOLOGY PROGRAMME

[CBCSS UG 2019]

SYLLABUS

Core Courses

Open Courses

Complementary Courses

&

Model Question Papers

EFFECTIVE FROM 2019 ADMISSION

Members of Board of Studies in Zoology (UG)

(U.O.No.10961/2016/Admn. dated, Calicut University, P.O., 07.09.2016)

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**INTRODUCTION,
GUIDELINES
AND
GENERAL INFORMATION**

B.Sc. ZOOLOGY PROGRAMME

INTRODUCTION

The Higher Education Programme in Kerala has been witnessing a drastic change from 2009 admission onwards with the introduction of Semesterisation and Grading at the undergraduate level. As a continuation of this trend, UGC has recognized the importance of Outcome Based Education (OBE) to be incorporated in the Choice Based Credit and Semester System (CBCSS) for UG curriculum. A course in General Higher Education Programme in India needs to be designed and conducted to facilitate the students to meet the identified Course Outcomes (COs). The course outcomes address a subset of Programme Outcomes (POs) identified by the university or the autonomous institutions that offer the programme. Also, the course outcomes address the Programme Specific Outcomes (PSOs) identified by the Branch/Department. Keeping in view of the implementation of OBE-CBCSS of UGC, Kerala State Higher Education Council conducted three days workshop during 12 -14 February 2019 with the title “*Redesigning of Courses for Outcome Based Education (OBE)*” for the Board of Studies in UG Programme under Faculty of Science at Tagore Nikethan, University of Calicut.

Vide U.O No. GA I/J2/3601/08 (Vol. II) dated 19.06.2009, regulations for CBCSS for UG curriculum was implemented from 2009 admission onwards under the University of Calicut, as per the directions of Kerala State Higher Education Council. The regulations of CBCSS for UG curriculum was also modified [U.O. No. 3797/2013/CU dated 07.09.2013] and implemented from 2014 admission onwards under the University of Calicut, as per the recommendations of Hridayakumari Committee appointed by the Govt. of Kerala. The Academic Council in its special meeting held on 28.02.2019 has approved the CBCSS UG regulations 2019 [U.O No. 4368/2019/Admn dated, 23.03.2019] and has, therefore, been accorded to implement the regulations for Choice Based Credit and Semester System for Under Graduate curriculum-2019 (CBCSS UG Regulations 2019) for all UG Programme under CBCSS regular and SDE/Private registration in the university of calicut, w.e.f. 2019 admission.

Board of Studies in Zoology (U.G.) of University of Calicut [constituted as per U.O.No.10961/2016/Admn. Dated 07.09.2016] reviewed and meticulously analyzed the existing and continuing syllabi of B.Sc. Zoology Programme. BoS received many requests and suggestions regarding the course structure, content and credit distribution that are to be incorporated in to the existing syllabus. BoS also discussed the details of the syllabus of B.Sc. Zoology programme in the context of outcome based education and the regulations of CBCSS UG curriculum 2019. Accordingly, BoS has framed the curriculum, course structure, course content, instructional hours, scheme of instruction, scheme of evaluation, credits, mark distribution, duration of examination and model question papers of B.Sc. Zoology Programme [CBCSS UG] with the present requirements of the teaching and learning process.

In addition, the semester-end examinations (total 6 semesters) 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, Open and Complementary courses. The distribution of marks is 80% for external evaluation and 20% for internal assessment.

The syllabus for the six semesters of B.Sc. Degree Programme with Zoology as Core course of study which contain provision for both theory and practical components in all six semesters and complementary courses also contain both theory and practical components in four semesters.

Some changes are also made in the combination of core course content in the fifth and sixth semesters in order to complete the teaching process in time especially in the tight schedule of the semesters. Further, some pertinent topics are suggested for *seminar/ assignment* for theory courses with a view to enrich the UG Programme.

The practical courses offered are designed in such a way that they support the theory topics and also impart the basic skills and techniques required of them. In addition to the items for practical, a *Project work* forms an integral part of the curriculum during the sixth semester. *Field study/study tour* to the research institution/museum and places of biological/zoological importance/ecological interest is a compulsory element of the curriculum. Requirement to visit places of importance of elective subject area is also a compulsory element. Attempts have also been made to update the syllabus, considering the needs of the time and conforming to the work load prescribed by the university.

Accordingly, the BoS meeting held on 12.04.2019 at Calicut University took the decision **to implement the revised syllabus w.e.f. 2019 B.Sc. Zoology admission.**

AIMS AND OBJECTIVES

The Board of Studies in Zoology (UG) recognizes that curriculum, course content and assessment of scholastic achievement play complementary roles in shaping education. The revised Outcome Based Education- Choice Based Credit and Semester System for Under Graduate (UG) Curriculum for B.Sc. Zoology Programme envisages undergraduate education as a combination of general and specialized education with outcome based, simultaneously introducing the concepts of breadth and depth in learning. Besides recalling information, the learning process is aimed to acquire the ability for problem solving, and critical and creative thinking in students. The present attempt is to prepare the students for lifelong learning by drawing attention to the vast world of knowledge of animals and introducing them to the methodology of systematic academic enquiry. The crew of the syllabus ensures firm footing in fundamental aspects of Zoology and wide exposure to modern branches of Zoology to the students.

The expected outcome of the syllabus:

- To know the scope and importance of Zoology.
- To develop scientific temper among students.

- To inculcate interest in nature and living forms and their conservation.
- To make the students eco-friendly by creating a sense of environmental awareness in them.
- To give better exposure to the diversity of life forms.
- To give awareness about natural resources and their importance in sustainable development.
- To study different ecological sites for animals in their natural habitats by field study.
- To provide opportunities for the application of the acquired knowledge in day- to - day life.
- To develop skills in doing experiments, familiarizing equipments and biological specimens.
- To undertake scientific projects which help to develop research aptitude in students.
- To expose students to various fields in biological sciences and to develop interest in related disciplines.
- To attain interdisciplinary approach to understand the application of the subject in daily life.
- To familiarize the emerging areas of Zoology and their applications in various spheres of biological sciences and to appraise the students of its relevance in future studies.

AN OVERVIEW

Definitions and Structure

Title shall be called “Regulations for Choice Based Credit and Semester System for Under Graduate Curriculum 2019” (CBCSS UG 2019). **Programme** means the entire course of study and examinations lead to the award of a degree. **Duration of programme** means period of time required for the conduct of undergraduate programme i.e. six semesters distributed in a period of 3 years. The odd semesters (1, 3 and 5) shall be from June to October and the even semesters (2, 4 and 6) shall be from November to March. **Academic week** is a unit of five working days in which distribution of work is organised from Monday to Friday with five contact hours of one hour duration on each day. A sequence of 18 such academic weeks constitutes a semester. **Semester** constitute minimum of 18 weeks (16 instructional weeks and 2 weeks for examination).

Course means a segment of subject matter to be covered in a semester. The graduate programme includes five types of courses, *viz.*, common, core, complementary, open, audit /ability enhancement and improvement courses. **Common course** means a course that comes under the category of courses for English and additional language, a selection of both is compulsory for all students undergoing undergraduate programme. Every undergraduate student shall undergo 10 common courses [6 English courses and 4 additional language courses] for completing the programme. **Core courses** are major (core) courses in a subject related to a particular degree programme. Core courses are offered by the parent department. There are 17 core courses including a project work and field study.

Complementary course means a course which is generally related to the core subject. It covers two disciplines in B.Sc. degree programme that are distributed in the first four semesters. There shall be one **Open course** in the 5th semester. This is a course outside the field of specialisation of the student, which can be opted by his/her choice. **Audit course/Ability Enhancement course** is a course which is mandatory. There shall be one Audit course each in the first four semesters. These courses are not meant for class room study. The credits of audited courses are not counted for SGPA or CGPA. [**Improvement course** is a course registered by a student for improving his/her performance.]

Course code of each course shall have a unique alphanumeric code number, which includes abbreviation of the subject in three letters, the semester number (1 to 6) in which the course is offered, the code of the course (A to E) and serial number of the course (01,02.). (A: Common course, B: Core course, B (E): Core Elective course, C: Complementary course and D: Open course, E: Audit course) For example: ZOL5B06 represents a core course of serial number 06 offered in 5th semester in B.Sc. Zoology programme.

Each course shall have certain credits. **Credit** is a unit of academic input measured in terms of weekly contact hours/course content assigned to a course. **Extra Credit** is the mandatory additional credit awarded to a student over and above the minimum credits required in a programme, for participating in co-curricular activities and social activities outside the regular class hours, like NCC, NSS and Swatch Bharath. Those students who could not join in any of the above activities have to undergo Calicut University Social Service Programme (CUSSP). Extra credits are not counted for SGPA or CGPA.

Grade in a course is a letter symbol (O, A+, A, B+, B, C, P, F, I and Ab). Grade shall mean the prescribed alphabetical grade awarded to a student based on his/her performance in various examinations. Each letter grade is assigned a '**Grade point** (G) which is an integer indicating the numerical equivalent of the broad level of performance of a student in a course. **Grade Point** means point given to a letter grade on 10 point scale. **Strike off the roll:** A student who is continuously absent for 14 days without sufficient reason and proper intimation to the Principal of the college shall be removed from the roll.

Department means any teaching department in a college offering a course of study approved by the university as per the Statutes and Act of the University. **Department Co-ordinator** is a teacher nominated by a Dept. Council to co-ordinate all the works related to CBCSS UG undertaken in that department including continuous evaluation. **Department Council** means the body of all teachers of a department in a college. **Parent Department** means the Department which offers a particular degree programme. **Course teacher:** A teacher nominated by the Head of the Department shall be in charge of a particular course.

College Co-ordinator is a teacher nominated by the college council to co-ordinate the effective running of the process of CBCSS including internal evaluation undertaken by various departments within the college. She/he shall be the convener for the college level monitoring committee. **College level monitoring committee:** A monitoring Committee is to be constituted for CBCSS UG at the

college level with Principal as Chairperson, college co-ordinator as convener and department co-ordinators as members. The elected college union chairperson shall be a member of this committee. **Faculty Adviser** means a teacher from the parent department nominated by the Department Council, who will advise the student in the academic matters and in the choice of open courses.

Project work & Field study: Every student of a UG programme shall have to work on a project under the supervision of a faculty member. A field study/study tour for 5 days is compulsory during the tenure of the B.Sc. Zoology programme.

Grace Marks: Grace marks may be awarded to a student for meritorious achievements in co-curricular activities (in Sports/Arts/NSS/NCC/Student Entrepreneurship) carried out besides the regular hours. Such a benefit is applicable and limited to a maximum of 8 courses in an academic year spreading over two semesters. In addition, maximum of 6 marks per semester can be awarded to the students of UG Programme, for participating in the College Fitness Education Programme (COFE).

Attendance: A student shall be permitted to appear for the semester examination, only if he/she secures not less than 75% attendance in each semester. Attendance shall be maintained by the Department concerned.

A student is required to acquire a minimum of **140** credits for passing the degree programme, of which 120 credits are to be acquired from class room study and shall only be counted for SGPA and CGPA.

Common courses:	38 credits (22 for English courses + 16 for Additional languages).
Core courses:	55 credits (including 2 credits for project work & 1 for field study).
Open course:	3 credits
Complementary courses:	24 credits (12 credits each for Chemistry and Botany)
Audit courses:	16 credits (4 credits per course in first 4 semesters)
Extra credits:	4 credits (4 credits in first 4 semesters)

If more Extra credit activities are done by a student that may be mentioned in the Grade card. *The credits of audited courses or extra credits are not counted for SGPA or CGPA.* The successful completion of all the courses (common, core, complementary and open courses) prescribed for the degree programme with 'P' grade shall be the minimum requirement for the award of degree.

CALICUT UNIVERSITY SOCIAL SERVICE PROGRAMME (CUSSP)

In this programme, a student has to complete 12 days of social service. This has to be completed in the first four semesters; 3 days in each semester. For the regular programme the student has to work in a Panchayath or Local body or in a hospital/ poor home or old age home or in a Pain & palliative centre or any social work assigned by the College authorities. Students who engaged in College Union

activities and participate in sports and cultural activities in Zonal level have to undergo only 6 days of CUSSP during the entire programme. The whole documents regarding the student should be kept in the college and the Principal should give a certificate for the same. The list of students (successfully completed the programme) must be sent to the university before the commencement of the fifth semester examinations. A college level co-ordinator and a department level co-ordinator shall be appointed for the smooth conduct of the programme.

AUDIT COURSES/ABILITY ENHANCEMENT COURSES

These are courses which are mandatory for a programme but not counted for the calculation of SGPA or CGPA. There shall be one Audit course each in the first four semesters. These courses are not meant for class room study. The students can attain only pass (Grade P) for these courses. At the end of each semester, there shall be examination conducted by the college from a pool of questions (Question Bank) set by the University. The Question paper shall be of 100 marks of 3 hour duration. The students can also attain these credits through online courses like SWAYAM, MOOC etc (optional). The list of passed students must be sent to the University from the colleges at least before the fifth semester examination. The lists of courses in each semester with credits are given below.

Table 1. AUDIT COURSES

Sl.No.	Semesters	Courses	Credits	Marks	Duration of Exam
1	I	Environmental studies	4	100	3 hrs
2	II	Disaster Management	4	100	3 hrs
3	III	*Human Rights/Intellectual Property Rights/ Consumer Protection	4	100	3 hrs
4	IV	*Gender studies/Gerontology	4	100	3 hrs
		Total	16	400	

**College can opt any one of the courses.*

Table 2. CREDITS AND MARKS DISTRIBUTION OF B.Sc. ZOOLOGY PROGRAMME
[Course Structure]

Semesters	Common course: Credits		Core Course Zoology: Credits	Open Course: Credits	Complementary course: Credits		Total Credits	Audit course: Credits	Extra Credits
	English	Addl Language			Chemistry	Botany			
I	3+3	4	2	--	2	2	16	4	
II	4+4	4	2	--	2	2	18	4	
III	4	4	3	--	2	2	15	4	4
IV	4	4	3+4*	--	2+4*	2+4*	27	4	
V	--	--	4+4+4+4	3	--	--	19	--	
VI	--	--	3+3+3+3+ 2+4*+4*+ 2**+1**	--	--	--	25	--	
Total	22 Credits (550 Marks)	16 Credits (400 Marks)	55 Credits (1450 Marks)	3 Credits (75 Marks)	12 Credits (400 Marks)	12 Credits (400 Marks)	120 Credits (3275 Marks)	16 Credits (400 Marks)	4 Credits (100 Marks)
	38 Credits (950 Marks)		82 Credits (2325 Marks)				120 Credits (3275 Marks)	#16 Credits (400 Marks)	#4 Credits (100 Marks)

Grand Total: 3775 Marks; 140 Credits (Minimum)

**Practical (12 Credits) **Project work – 2 credits; **Field study – 1 credit.*

Credits acquired from class room study and counted for SGPA and CGPA: 120

Total 140 credits [120+16+4] are required for completing UG programme.

#Credits of audit course (16) and extra credits (4) are mandatory and not counted for SGPA or CGPA calculation.

Table 3. COURSE-WISE MARK DISTRIBUTION OF B.Sc. ZOOLOGY PROGRAMME

Courses			No. of Courses	Marks per Course	Total Marks	Grand Total Marks
Common Courses	English	Theory	6	75 x 2 = 150 100 x 4 = 400	550	550
	Additional Language	Theory	4	100	400	400
Core Courses	Zoology	Theory	13	75 x 9 = 675 100 x 4 = 400	1075	1450
		Practical	3	100	300	
		Project work and Field study	1	60+15 = 75	75	
Open course	Zoology/Other streams	Theory	1	75	75	75
Complementary courses	Chemistry	Theory	4	75 x 4 = 300	300	400
		Practical	1	100	100	
	Botany	Theory	4	75 x 4 = 300	300	400
		Practical	1	100	100	
Total Marks						3275
Audit courses		Theory	4	400	400	400
Extra credits			4		100	100
Total Marks						500

Grand Total: 3775 Marks (3275+500); 140 Credits (Minimum)

Table 4. SEMESTER WISE DISTRIBUTION OF CREDITS AND MARKS

B.Sc. Zoology Programme
Total Credits: 140; Total Marks: 3775

Semester	Course	Credits	Marks
I	Common course: English	3	75
	Common course: English	3	75
	Common course: Additional Language	4	100
	Core Course I: Animal Diversity: Non-chordata Part-I	2	75
	Complementary course: Chemistry	2	75
	Complementary course: Botany	2	75
	Audit Course: Environmental studies	4	100
	Total	20	575
II	Common course: English	4	100
	Common course: English	4	100
	Common course: Additional Language	4	100
	Core Course II: Animal Diversity: Non-chordata Part-II	2	75
	Complementary course: Chemistry	2	75
	Complementary course: Botany	2	75
	Audit Course: Disaster Management	4	100
	Total	22	625
III	Common course: English	4	100
	Common course: Additional Language	4	100
	Core Course III: Animal Diversity: Chordata Part-I	3	75
	Complementary course: Chemistry	2	75
	Complementary course: Botany	2	75
	Audit Course: Human Rights/Intellectual Property Rights/ Consumer Protection	4	100
	Total	19	525
IV	Common course: English	4	100
	Common course: Additional Language	4	100
	Core course IV: Animal Diversity: Chordata Part-II	3	75
	Core course V: Zoology Core Practical – I [Practical I*A +I*B+ I*C+ I*D]	4	100
	Complementary course: Chemistry	2	75
	Complementary course: Chemistry Practical	4	100
	Complementary course: Botany	2	75
	Complementary course: Botany Practical	4	100
	Audit Course: Gender studies/Gerontology	4	100
	Extra credits (Maximum)	4	100
	Total	35	925

Semesters	Course	Credits	Marks
V	Core Course VI: Cell Biology and Genetics	4	100
	Core Course VII: Biotechnology, Microbiology and Immunology	4	100
	Core Course VIII: Biochemistry and Molecular Biology	4	100
	Core Course IX: Methodology in Science, Biostatistics and Bioinformatics	4	100
	Open course: Any other streams	3	75
	Total	19	475
VI	Core Course X: Physiology and Endocrinology	3	75
	Core Course XI: Reproductive and Developmental Biology	3	75
	Core Course XII: Environmental and Conservation Biology	3	75
	Core Course XIII: Ethology, Evolution and Zoogeography	3	75
	Core Course XIV: Elective course (Any one below) [01] Human Genetics [02] Aquaculture, Animal Husbandry & Poultry science [03] Applied Entomology	2	75
	Core Course XV: Zoology Core Practical- II [Practical II*A + II*B]	4	100
	Core Course XVI: Zoology Core Practical- III [Practical III*A+ III*B]	4	100
	Core Course XVII: Project Work and Field study	2+1	75
	Total	25	650
	Grand Total	140	3775

Table 5
B.Sc. ZOOLOGY (CORE) PROGRAMME
STRUCTURE OF CORE, OPEN AND ELECTIVE COURSES

Course code, Title, Instructional hours, Credits, Marks and Examination duration in various semesters

Total Credits: 58
(w.e.f. 2019 Admission)

Semester	Core/Open/ Elective courses	Code	Course Title	Instructional hours/week	Instructional hrs in a semester	Credits	External Marks	Internal marks	Total marks	Duration of Exam (hrs)
I	Theory I	ZOL1B01T	Animal Diversity : Nonchordata Part-I	2	36	2	60	15	75	2
	Practical I*A	--	Practical related to ZOL1B01T	2	36	*	--	--	--	
II	Theory II	ZOL2B02T	Animal Diversity : Nonchordata Part-II	2	36	2	60	15	75	2
	Practical I*B	--	Practical related to ZOL2B02T	2	36	*	--	--	--	
III	Theory III	ZOL3B03T	Animal Diversity: Chordata Part-I	3	54	3	60	15	75	2
	Practical I*C	--	Practical related to ZOL3B03T	2	36	*	--	--	--	
IV	Theory IV	ZOL4B04T	Animal Diversity: Chordata Part-II	3	54	3	60	15	75	2
	Practical I*D	--	Practical related to ZOL4B04T	2	36	*	--	--	--	
	Practical-I {I*A +I*B+ I*C+ I*D}	ZOL4B05P	Zoology Core Practical I (Practical related to ZOL1B01T,02T,03T and 04T)	8	144	4	80	20	100	4
V	Theory V	ZOL5B06T	Cell Biology and Genetics	3	54	4	80	20	100	2.5
	Theory VI	ZOL5B07T	Biotechnology, Microbiology and Immunology	4	72	4	80	20	100	2.5
	Practical II*A	--	Practical related to ZOL5B06T & 07T	4	72	**	--	--	--	
	Theory VII	ZOL5B08T	Biochemistry and Molecular Biology	4	72	4	80	20	100	2.5
	Theory VIII	ZOL5B09T	Methodology in Science, Biostatistics and Bioinformatics	3	54	4	80	20	100	2.5
	Practical II*B	--	Practical related to ZOL5B08T, & 09T	4	72	**	--	--	--	
	#Open Course +++ (for other streams)	ZOL5D01T ZOL5D02T ZOL5D03T	• Reproductive Health and Sex Education • Nutrition, Health & Hygiene • Applied Zoology (Any one) #	3	54	3	60	15	75	2
VI	Theory IX	ZOL6B10T	Physiology and Endocrinology	3	54	3	60	15	75	2
	Theory X	ZOL6B11T	Reproductive and Developmental Biology	3	54	3	60	15	75	2
	Practical III*A	--	Practical related to ZOL6B10T & 11T	4	72	**	--	--	--	
	Theory XI	ZOL6B12T	Environmental and Conservation Biology	3	54	3	60	15	75	2
	Theory XII	ZOL6B13T	Ethology, Evolution and Zoogeography	3	54	3	60	15	75	2

Semester	Core/Open/ Elective courses	Code	Course Title	Instructional hours/week	Instructional hrs in a semester	Credits	External Marks	Internal marks	Total marks	Duration of Exam (hrs)
	Theory XIII Elective Course##	ZOL6B14(E)01T ZOL6B14(E)02T ZOL6B14(E)03T	<ul style="list-style-type: none"> • Human Genetics • Aquaculture, Animal Husbandry & Poultry science • Applied Entomology (Any one) ##	3	54	2	60	15	75	2
	Practical III*B	--	Practical related to theory core course ZOL6B12T, 13T & ZOL6B14 (E)01T/ (E)02T/ (E)03T	4	72	**	--	--	--	
			Project work / Field study	2	32	***	--	--	--	
	Practical II (II*A +II*B)	ZOL6B15P	Zoology Core Practical II (Practical related to ZOL5B06T, 07T, 08T, 09T)	8	144	4**	80	20	100	4
	Practical III (III*A +III*B)	ZOL6B16P	Zoology Core Practical III (Practical related to ZOL6B10T, 11T, 12T, 13T & 14T (E)01/(E)02/(E)03)	8	144	4**	80	20	100	4
		ZOL6B17PF	Project work & Field study	--	--	2+1 ***	60	15	75	
			Total			58	1220	305	1525	

Core courses 1450 + Open course 75 = 1525 Marks

Scheme of evaluation: External 80 % +Internal 20 %

* Practical examination for 1st, 2nd, 3rd and 4th semesters will be held at the end of IV semester.

** Practical examination for 5th and 6th semesters will be held at the end of VI semester.

*** **Project work – 2 credits; Field study – 1 credit.** External evaluation of Project work and Field study report will be conducted at the end semester VI after Practical III (External: 80% Marks + Internal: 20 % marks; **Total: 75 Marks**). (It includes a Viva-voce based on report of Project work and field study).

Project: External 48 marks + Internal 12 marks = **60** marks

Field study report: External 12 marks +Internal 3 marks = **15** marks

Open course of any one course (ZOL5D01T/ ZOL5D02T/ ZOL5D03T) opted by the dept. is for other streams.

Open course Theory: 80% marks for external and 20% marks for internal evaluation.

+++ See Appendix of Open course

Elective course of any one course (ZOL6B14(E)01/ ZOL6B14(E)02/ ZOL6B14(E)03) opted by the dept. is for Core course.

Table 6**+++Appendix****B.Sc. ZOOLOGY OPEN COURSE**
*[For students of other streams]***STRUCTURE OF OPEN COURSE****Course code, Title, Instructional hours, Credits, Marks and Duration of Examination****Total Credits: 3 (External 80% and Internal 20%)**
(w.e.f. 2019Admission)

Semester	Open Course	Code	Course content	Instructional hrs / week	Instructional hrs in a semester	Credits	External Marks	Internal marks	Total marks	Duration of Exam (hrs)
V	Theory [Any one]	ZOL5D01T	<i>Open Course 01 : Reproductive Health and Sex Education</i>	3	54	3	60	15	75	2
		ZOL5D02T	<i>Open Course 02 : Nutrition, Health and Hygiene</i>							
		ZOL5D03T	<i>Open Course 03 : Applied Zoology</i>							
	TOTAL				3	54	3	60	15	75

Open course of any one course (ZOL5D01T/ ZOL5D02T/ ZOL5D03T) opted by the dept. is for students of other streams.

There shall be one open course in core subjects in the fifth semester. The open course shall be open to all the students in the institution except the students in the parent department. The students can opt that course from any other department in the institution. Each department can decide the open course from a pool of three courses offered by the University. For open courses there shall be a minimum of 10 and maximum of 75 students per batch. Total credits allotted for open course is 3 and the hours allotted is 3. If there is only one programme in a college, they can choose either language courses or physical education as open course.

OUTCOMES AND OUTCOME BASED EDUCATION (OBE)

Outcomes are what the students are expected to be able to do at the end of a unit of learning. The unit of learning is three year formal programme.

An Outcome:

- Should unambiguously state what the student should be able to do/perform.
- What the students do or perform are observable and assessable?
- Students should be able to understand what it means (comprehensible).
- Should be able to provide guidance to students in planning their learning.

Outcome Based Education (OBE) was introduced by William Spady in early 1990s for American school system and eventually adapted by higher education systems. This is an approach to education in which decisions about the curriculum and instructions are driven by the exit learning outcomes that the students should display at the end of a programme or a course. OBE establish the conditions and opportunities within the system that enable and encourage all students to achieve those essential outcomes. A system based on outcomes gives top priority for learning, accomplishments and results.

Advantages of OBE

- *Relevance:* Outcome based education promotes fitness for practice and education for capability.
- *Discourse:* The process of identification of the outcomes within an institution promotes discussion of fundamental questions.
- *Clarity:* An explicit statement of what the educational process aims to achieve clarifies the curriculum for both students and teachers, and provides a focus for teaching and learning.
- *Provision of a Framework:* OBE provides a robust framework for integration of the curriculum.
- *Accountability:* By providing an explicit statement of what the curriculum is setting out to achieve, OBE emphasizes accountability.
- *Self Directed Learning:* If students are clear about what they are trying to achieve, they can take more responsibility for their own learning. OBE thus promotes a student-centered approach to learning and teaching.
- *Flexibility:* OBE does not specify educational strategies or teaching methods.
- *Guide for Assessment:* The outcomes provide the framework for student examinations.
- *Facilitates Curriculum Evaluation:* The outcomes provide benchmarks against which the curriculum can be judged.

Three levels of Outcomes:

- Programme Outcomes (POs)
- Programme Specific Outcomes (PSOs)
- Course Outcomes (COs)

Programme Outcomes (POs) indicate the generic knowledge, skills and attitudes that every student graduating from a UG programme should attain. While every course of the programme can address only a subset of POs, all the core courses together should be able to address all the POs.

1. Programme Outcomes (POs) for General Undergraduate Programme:

- PO1. **Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- PO2. **Problem Solving:** Understand and solve the problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired from humanities/ sciences/mathematics/social sciences.
- PO3. **Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
- PO4. **Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- PO5. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
- PO6. **Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes.

2. Programme Specific Outcomes (PSOs):

PSOs are specific to a programme and are to be attained at the time of graduation from the programme. They are to be identified by a committee with representation from all stakeholders.

B.Sc. Zoology Programme

PSOs	Program Specific Outcomes
PSO1	Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and process of organic evolution.
PSO2	Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities.
PSO3	Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology and develop technical skills in biotechnology, bioinformatics and biostatistics.
PSO4	Perform laboratory procedures as per standard protocols in the areas of animal diversity, systematics, cell biology, genetics, biochemistry, molecular biology, microbiology, physiology, immunology, developmental biology, environmental biology, ethology, evolution and science methodology.

* PSOs related to elective courses are excluded since they are college specific.

3. Course Outcomes (COs):

Course outcomes are statements that describe significant and essential learning that the learners have achieved and can reliably demonstrate at the end of the course. Course outcomes are what the student should be able to do at the end of the course.

CORE COURSE: SCHEME OF INSTRUCTION

For B.Sc. Zoology Programme, Zoology is the core course. It is to be taught during all the six semesters. Course code, title, instructional hours, distribution of credits and marks, and other details of B.Sc. Zoology Programme are shown in Tables 2 to 5. The syllabus includes theory as well as practical components (see Table 5).

A. Theory

The total number of theory core courses is 13. One core course each is to be studied during the first four semesters (2 credits each for theory courses in 1st & 2nd semesters, 3 credits each in 3rd & 4th semesters) with 2 hrs of examination. Four courses each with 4 credits and 2.5 hrs of examination in 5th semester and 5 courses [4 with 3 credits each and one with 2 credits] with 2 hrs examination in 6th semesters of the programme. Towards achieving vocationalisation, 3 core courses are prescribed under Elective course for 6th semester. An institution can choose any one of the following.

Elective courses: 01. Human Genetics (Code: e.g., ZOL6B14(E)01T)
02. Aquaculture, Animal Husbandry and Poultry science
03. Applied Entomology

For developing learning, understanding and presentation skills of students, some pertinent topics are suggested for Seminar/Assignments. Questions from topics allotted for assignments/seminar are for internal assessment only.

B. Practical

Practical courses corresponding to each theory course will be conducted during the corresponding semesters. A combined practical examination relating to the first four core courses 01, 02, 03 and 04 will be held at the end of the fourth semester and that will be designated as Practical I (Code: ZOL4B05P) with 4 credits. Practical related to core courses 06 to 09 of the 5th semester form Practical II [4 credits; Code: ZOL6B15P] and 10 to 14 of 6th semester form Practical III [4 credits; Code: ZOL6B16P]. Practical examinations II and III will be conducted at end of the sixth semester.

Record: Any candidate, who turns up for a practical examination, must submit a certified bonafide record/report of work done by him/her duly attested by the teacher-in-charge and the Head of the Department at the time of practical examinations. Record should contain hand-drawn specimens with classification and notes/ mountings/dissections/sketches/experiments and results with scientific accuracy. All practical examinations are of 4 hours duration.

C. Project and Field study (ZOL6B17PF):

1. Project work

Students are assigned to undertake a project work during 6th semester on problems pertaining to biological science. Scientific study on the topic selected is required to be carried out under the supervision and guidance of faculty members. A group consisting of not more than 12 students can undertake one research project. Each student has to actively participate in the project work. The problem/topic chosen by an earlier batch of students for their project work shall not be repeated by a latter batch. A certificate to this effect has to be attached by the Head of the department.

A well documented project report duly attested by the Supervising teacher and the Head of department must be submitted by each candidate for evaluation separately on the day of 3rd practical examination in the sixth semester. The project must contain the following components.

1. Introduction with citations of relevant literature
2. Objectives of the study
3. Methodology
4. Results
5. Discussion
6. References

2. Field Study

A field study/study tour for 5 days is compulsory during the tenure of the B.Sc. Zoology programme, preferably in the V or VI semester. A total of at least 4 days should be kept apart for visiting research institution/museum, and places of biological interest and ecological importance. One day trip should be associated with Elective course chosen. A detailed tour report certified by the Teacher-in-charge of the study tour and also by the Head of the Department, specifying the places and institutions visited, date and time of visit, details of observations made must be submitted by each student in "**hand written**" mode for evaluation during the day of 3rd practical examination in the sixth semester. The field study/study tour report is compulsory for each student appearing for practical examination.

EXAMINATIONS

There shall be university examinations at the end of each semester. **A student shall be permitted to appear for the semester examination, only if he/she secures not less than 75% attendance in each semester.** Practical examinations shall be conducted by the university at the end of fourth and sixth semesters. External evaluation of Project work and field study report shall be conducted on a separate day after the completion of core course practical examination in the sixth semester.

EVALUATION AND GRADING

Mark system is followed instead of direct grading for each question. The evaluation scheme for each course shall contain two parts: viz., Internal evaluation (20% marks) and External evaluation (80% marks). The marks secured for internal assessment only need to be sent to university by the college concerned. After internal and external evaluation, marks are entered in the answer scripts. All other calculations, including grading will be done by the university using the software. For each course in the semester, letter grade and grade point are introduced in 10 point Indirect Grading System. Each course is evaluated by assigning marks with a letter grade (O, A+, A, B+, B, C, P, F, I, Ab) to that course by the method of indirect grading.

Table 7. TEN POINT INDIRECT GRADING SYSTEM

Percentage of Marks (Both Internal & External put together)	Grade	Interpretation	Grade Point Average (G)	Range of Grade points	Class
95 and above	O	Outstanding	10	9.5 - 10	First Class with Distinction
85 to below 95	A+	Excellent	9	8.5 - 9.49	
75 to below 85	A	Very good	8	7.5 - 8.49	
65 to below 75	B+	Good	7	6.5 - 7.49	First Class
55 to below 65	B	Satisfactory	6	5.5 - 6.49	
45 to below 55	C	Average	5	4.5 - 5.49	Second Class
35 to below 45	P	Pass	4	3.5 - 4.49	Third Class
Below 35	F	Failure	0	0	Fail
Incomplete	I	Incomplete	0	0	Fail
Absent	Ab	Absent	0	0	Fail

CORE COURSE: SCHEME OF EVALUATION

B.Sc. Zoology Programme comprises 13 theory courses (one each in first 4 semesters, four in 5th and five in 6th semesters), 3 practical courses, and 1 course of project work & field study. The scheme of evaluation for core course theories, practicals, project work & field study contain two parts: viz., internal evaluation (20% marks) and external evaluation (80%marks).

A. THEORY [CORE COURSE]: EVALUATION SCHEME

The evaluation scheme for each course contains two parts; viz. internal evaluation and external evaluation.

I. INTERNAL EVALUATION

The internal evaluation will be a continuous process. It will be done by the faculty members of the department of Zoology of the institution where the candidate is pursuing the study. The internal assessment shall be based on a transparent system involving student's performance in class tests, class room participation based on attendance in theory courses, assignments and seminars in respect of theory courses. For the test paper marks, at least one test paper should be conducted. If more test papers are conducted, the marks of the best one should be

taken. To ensure transparency of the evaluation process, the internal assessment marks awarded to the students in each course in a semester shall be notified on the notice board at least one week before the commencement of external evaluation. There shall not be any chance for improvement for internal marks. The course teacher(s) shall maintain the academic record of each student registered for the course, which shall be forwarded to the university by the college Principal after obtaining the signature of both course teacher and Head of the department.

For 2/3 credit courses the external examination is for 60 marks and 2 hours of duration. Such courses have an internal component of 15 marks (60 external + 15 internal = 75 marks). 4/5 credit courses have an external examination of 80 marks and 2.5 hours duration. The internal mark for such courses is 20 (external 80+ internal 20 = 100 marks). The distribution of internal marks shall be as follows:

Table 8. Criteria for Internal Evaluation of Theory courses

Sl. No.	Criteria	Maximum internal marks 15 (2/3 credit courses - Type 1)	Maximum internal marks 20 (4/5 credit courses - Type 2)
1	Test paper (1) (40%)	6	8
2	Assignment (20%)	3	4
3	Seminar (20%)	3	4
4	Attendance (20%)	3	4
<i>Total Marks</i>		15	20

Table 8.1. Pattern of Test paper for Type 1 [2/3 credit courses]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
1 Hour	Short answer	6	6	2	10
	Paragraph	3	3	5	10
	Essay	2	1	10	10
Total marks					30

Table 8.2. Pattern of Test paper for Type 2 [4/5 credit courses]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
1.15 Hour	Short answer	6	6	2	10
	Paragraph	5	5	5	20
	Essay	2	1	10	10
Total marks					40

Table 8.a. Split up of internal marks for Test Paper [40%]

Sl. No.	Range of Marks in test paper	Out of 6 [Maximum internal marks 15]	Out of 8 [Maximum internal marks 20]
1	85 to 100%	6	8
2	65 to below 85%	5	6
3	55 to below 65%	4	4
4	45 to below 55%	3	3
5	35 to below 45%	2	2
6	Below 35%	1	1

Table 8.b. Criteria for Internal Evaluation of Assignment [20%]

Sl. No.	Criteria	Out of 3 [Maximum internal marks 3]	Out of 4 [Maximum internal marks 4]
1	Submission in time	1	1
2	Content	2	3
3	Total Marks	3	4

Table 8.c. Criteria for Internal Evaluation of Seminar [20%]

Sl. No.	Criteria	Out of 3 [Maximum internal marks 3]	Out of 4 [Maximum internal marks 4]
1	Excellent	3	4
2	Good	2	3
3	Average	1	1
4	*Total Marks	3	4

**Based on clarity, communication skills, use of AV aids and answer to questions.*

Table 8.d. Split up of internal marks for Classroom Participation (CRP) (Attendance) [20%]

Sl. No.	Range of CRP (Attendance)	Out of 3 [Maximum internal marks 15]	Out of 4 [Maximum internal marks 20]
1	85 and above	3	4
2	75 to below 85%	2	2
3	50 to below 75%	1	1
4	below 50%	0	0

II. EXTERNAL EVALUATION

Theory examinations will be conducted at the end of each semester. External evaluation carries 80% of marks. All question papers shall be set by the University. The external question papers may be of uniform pattern with 80/60 marks. The courses with 2/3 credits will have an external examination of 2 hours duration with 60 marks and courses with 4/5 credits will have an external examination of 2.5 hours duration with 80 marks. The external examination in theory courses is to be conducted by the university with question papers set by external experts.

Scheme of Examination (2/3 credit course)

The external question papers are of 60 marks and duration of external examination is 2 hrs. The pattern of question paper for external examination is as given below. The students can answer all the questions in Sections A & B. But there shall be ceiling (maximum marks that can be scored) in each section.

Table 9. Pattern of Question Paper for Theory - Type 1 [60 Marks]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
2 Hours	Section A: Short answer	12	12	2	20
	Section B: Paragraph	7	7	5	30
	Section C: Essay	2	1	10	10
Total Marks					60

Scheme of Examination (4/5 credit course):

The external question papers are of 80 marks and duration of each external examination is 2.5 hours. The pattern of question papers for external examination is as given below. The students can answer all the questions in Sections A & B. But there shall be ceiling (maximum marks that can be scored) in each section.

Table 10. Pattern of Question Paper for Theory - Type 2 [80 Marks]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
2.5 Hours	Section A: Short answer	15	15	2	25
	Section B: Paragraph	8	8	5	35
	Section C: Essay	4	2	10	20
Total Marks					80

B. PRACTICAL [CORE COURSE]: EVALUATION SCHEME

Practical corresponding to each core course will be conducted during the corresponding semesters. Internal evaluation of core course Practical I will be conducted at 4th semester and Practical II & III at 6th semester. Internal evaluation carries 20% of the total marks in each practical.

I. INTERNAL EVALUATION**Table 11. Criteria of Internal Evaluation for Practical I, II and III [20 marks for each practical]**

Sl. No.	Criteria	Marks
1	Attendance	4
2	Lab involvement, Performance & punctuality	4
3	Class test (1 No.)	8
4	Record	4
Total Marks		20

Table 11a. Attendance

Sl. No.	Attendance (%)	Marks
1	85 and above	4
2	75 to below 85%	2
3	50 to below 75%	1
4	below 50%	0

Table 11.b. Lab involvement, Performance & Punctuality

Sl. No.	Criteria	Marks
1	Excellent	4
2	Very Good	3
3	Good	2
4	Average	1
5	Below Average	0

Table 11.c. Class Test [1]

Sl. No.	Criteria	Marks
1	85 to 100%	8
2	65 to below 85%	6
3	55 to below 65%	4
4	45 to below 55%	3
5	35 to below 45%	2
6	Below 35%	1

Table 11.d. Record

Sl. No.	Criteria	Marks
1	Punctuality in submission	1
2	Contents	2
3	Scientific accuracy and neatness	1
	Total Marks	4

III. EXTERNAL EVALUATION

Practical corresponding to each core theory course will be conducted during the corresponding semesters. External evaluation will be done by a team consisting of **one internal examiner and one external examiner.**

A combined University practical examination related to the first four core theory courses (Practical I*A, I*B, I*C and I*D) will be conducted at the end of fourth semester and that will be designated as Practical I (ZOL4B05P). Practical related to V semester core theory courses (Practical II*A and II*B) form Practical II (ZOL6B15P) and Practical related to VI semester core theory courses, (Practical III*A, and III*B) form Practical III (ZOL6B16P). Practical II and III examinations will be conducted at the end of 6th semester. Credits for Practical I, II & III are 4 each. **All external practical examinations are of 4 hours duration.**

Any candidate, who turns up for a practical examination, must submit a certified and bonafide record/ report of work done by him/ her duly attested by the Teacher- in -charge and the Head of the Department at the time of practical examinations.

For external evaluation of the record of Practical - I, *One* mark may be given to the local biodiversity report done by the students on Nonchordate group of animals during I or II semester and also *one* mark for local biodiversity report on Chordate groups during III or IV semester (1+1+14= Total 16 marks).

All practical examinations will have a viva voce, during which the examiner may ask questions based on the principles/methodology/concepts of the experiments performed during the practical examinations (3 marks).

Table 12. Scheme of question paper for Practical I

Question Nos.	Nature of questions	Total no. of questions	Marks for each question	Marks	Duration
I : Q 1-6	Spotters: Identification and classification (up to order in the case of chordates and up to class in the case of non-chordates); habits/habitat/sketches/ descriptions/ peculiarities/reasons/ significance etc.	6	3	18	4 hours
II: Q 7	Minor : Mountings/dissections/ display/ Sketches	1	9	9	
III: Q 8	Minor : Mountings/ dissections/ display/sketches	1	12	12	
IV: Q 9	Major : Mountings/dissections	1	22	22	
	Viva-voce			3#	
V:Record	-	-	-	16*	
Total Marks				80	

* For external evaluation of the Practical Record I, *One* mark may be given to the local biodiversity report done by the students on Nonchordate group of animals during I or II semester and also *one* mark for local biodiversity report on Chordate groups during III or IV semester (1+1+14= Total 16 marks).

viva- voce: Examiner may ask questions based on the principles/methodology/ concepts of the experiments performed during the practical examinations.

Table 13. Scheme of question paper for Practical II and III

Question Nos.	Nature of questions	Total no. of questions	Marks for each question	Marks	Duration
I : Q 1-6	Spotters from various core courses: slides/specimens/apparatus/experimental set up etc.; Identification, sketches/descriptions/ reasons importance/ significance etc.	6	3	18	4 hours
II: Q 7	Minor expt. : from various sections - results/explanation/ graphs/sketches etc.	1	9	9	
III: Q 8	Minor expt. : from various sections - results/explanation/ graphs/ sketches etc.	1	12	12	
IV: Q 10	Major expt.: from various sections- results/ explanation/ sketches etc.	1	22	22	
	Viva-voce			3#	
V:Record	-	-	-	16	
Total Marks				80	

Viva voce – Examiner may ask questions based on the principles/methodology/concepts of the experiments performed during the practical examinations

C. PROJECT WORK & FIELD STUDY [2+1 = 3 CREDITS]: EVALUATION SCHEME

a. Project work (2 credits)

A well documented project report duly attested by the Supervising teacher and the Head of department must be submitted by each candidate for evaluation, separately on the day of 3rd practical examination during semester VI. Report of the project work has an internal and external evaluation.

Pass conditions

- Submission of the project report and presence of the student for viva are compulsory for internal evaluation. No marks shall be awarded to a candidate if she/ he fail to submit the Project Report for external evaluation.
- The student should get a minimum P Grade in aggregate of external and internal.
- There shall be no improvement chance for the marks obtained in the project report.
- In the extent of student failing to obtain a minimum of Pass Grade, the project work may be re-done and a new internal mark may be submitted by the parent department. External examination may be conducted along with the subsequent batch.

b. Field Study (1 credit)

A detailed report of field study /study tour certified by the Teacher -in- charge and also by the Head of the Department specifying the places and institutions visited, date and time of visit, details of observations made etc. must be submitted by each student in "**hand written**" mode for evaluation during the day of 3rd practical examination in VI semester. The field study/study tour report is compulsory for each student appearing for practical examination. Evaluation of the field study also has both internal and external components.

Evaluation of the project report and field study report will be conducted after Practical III examination in the VI semester on a separate day. Each student shall appear for a **viva- voce** on the *project work and field study* before a team of **two external examiners**. The questions will be based on project report and field study. Marks shall be given according to their performance.

Table: 14. Evaluation of Project and Field study

Sl. No.	Components	External Marks	Internal Marks	Total Marks
1	Project	48	12	60
2	Field study/ study tour	12	3	15
Total Marks		60	15	75

I. INTERNAL EVALUATION (12+3=15 Marks)

The supervising teachers will assess the project report and field study report and award internal marks.

Table 15: Criteria for Internal evaluation of Project [12 Marks; 20%]

Sl. No.	Components	Marks
1	Originality	2
2	Methodology	2
3	Scheme/Organisation of Report	4
4	Viva-voce	4
Total Marks		12

Table 16: Criteria for Internal evaluation of Field study/Study tour report [3 Marks; 20%]

Sl. No.	Components	Marks
1	Content of field study report	2
2	Viva-voce related to field study	1
Total Marks		3

II. EXTERNAL EVALUATION (48+12 = 60)

Table 17: Project work & Field study: External Examination Scheme

	Project work			Project Total Marks (48)	Field study			Field study Total Marks (12)	Grand Total (60)
Relevance of the topic, statement of objectives	Presentati on, quality of analysis/ use of statistical tools, references	Finding s and recomm endatio ns	Viva-voce		Field study related to elective course	Visit to places of general biological and ecological interest	Viva-voce related to field study		
10 Marks	10 Marks	14 Marks	14 Marks		2 Marks	8 Marks	2 Marks		

UNIVERSITY OF CALICUT

DEGREE PROGRAMME

ZOOLOGY OPEN COURSE

In the fifth semester, three open courses are prescribed in Zoology for undergraduate programme for students from other streams. Department of the Institution can choose **any one** of the following open course for students from other streams. The open course is to be taught in 3 hrs per week with a total of 54 instructional hours in the 5th semester and with 3 credits (Table 6).

Table 18: Open courses in Zoology for undergraduate programme (For students from other streams)

	Open courses	Code	Course content
Theory (Any one)	01	ZOL5D01T	Reproductive Health and Sex Education
	02	ZOL5D02T	Nutrition, Health and Hygiene
	03	ZOL5D03T	Applied Zoology

OPEN COURSE: SCHEME OF EVALUATION

The evaluation scheme of the open course also has internal (20%) and external (80%) components.

I. INTERNAL EVALUATION [15 marks]

Table 19. Criteria for Internal Evaluation of Open course [15 marks]

Sl. No.	Criteria	Marks
1	Test paper (1)	6
2	Assignment	3
3	Seminar	3
4	Attendance (Classroom Participation)	3
Total Marks		15

Table 19.1. Pattern of Test paper [30 Marks]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
1 Hour	Short answer	6	6	2	10
	Paragraph	3	3	5	10
	Essay	2	1	10	10
Total marks					30

Table 19.a. Split up of internal marks for Test Paper [40%]

Sl. No.	Range of Marks in test paper	Out of 6 [Maximum internal marks 15]
1	85 to 100%	6
2	65 to below 85%	5
3	55 to below 65%	4
4	45 to below 55%	3
5	35 to below 45%	2
6	Below 35%	1

Table 19.b. Criteria for Internal Evaluation of Assignment [20%]

Sl. No.	Criteria	Out of 3 [Maximum internal marks 3]
1	Submission in time	1
2	Content	2
3	Total Marks	3

Table 19.c. Criteria for Internal Evaluation of Seminar [20%]

Sl. No.	Criteria	Out of 3 [Maximum internal marks 3]
1	Excellent	3
2	Good	2
3	Average	1
4	*Total Marks	3

**Based on way of presentation, content, answer to questions etc.*

Table 19.d. Split up of internal marks for Classroom Participation (CRP) (Attendance) [20%]

Sl. No.	Range of CRP (Attendance)	Out of 3 [Maximum internal marks 15]
1	85 and above	3
2	75 to below 85%	2
3	50 to below 75%	1
4	below 50%	0

II. EXTERNAL EVALUATION (60 Marks)

Table 20. Pattern of Question Paper for Open Course [Theory]

Duration	Pattern	Total number of questions	Number of questions can be answered	Marks for each question	Ceiling of Marks
2 Hours	Section A: Short answer	12	12	2	20
	Section B: Paragraph	7	7	5	30
	Section C: Essay	2	1	10	10
Total Marks					60

INTERNAL ASSESSMENT: PRECAUTIONS

The process of Internal Assessment must be transparent. There should not be any chance for favoritism, victimization and discrimination. 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 (at least 2 years) future reference and shall be made available for verification by the university. The responsibility of evaluating the internal assessment is vested on the teacher(s), who teach the course.

2. Tabulated statement of internal evaluation must be put up on the department notice board prior to its despatch to the university.
3. A grievance redressal committee may be constituted at the department level to supervise re-tests, seminars, evaluation of assignments etc. Every student has the right to appeal against any injustice in the internal assessment/evaluation. In order to address the grievance of students a three-level Grievance Redressal mechanism is envisaged. A student can approach the upper level only if grievance is not addressed at the lower level. This can be raised at three levels.
 1. He/she may appeal against the injustice to the concerned teacher.
 2. If not satisfied, he/she may plead to the Head of the Department, who will then discuss the case with the 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 senior members of the college council [nominated by the Principal]; Head of the Department of Zoology and the Principal (Chairman) himself / herself. The decision taken by the committee shall be final and binding.

The Attendance and Progress Certificate in respect of all candidates, who appear for the university examination, shall be sent to the university not later than the closing date of the corresponding year.