Department of Animal Sciences

School of Basic and Applied Sciences

Central University of Punjab, Bathinda

Program: M.Sc. Life Sciences (specialization in Animal Sciences)

Academic Session: 2018 – 19

Through 5th BoS

(After Curriculum Audit)

Program: M.Sc. in Life Sciences (Specialization: Animal Sciences)
(Academic Session: 2018 - 19)

Semester – I

Course Code	Course Title	Type	L (hr)	T (hr)	P (hr)	Cr
	Core Courses*					
LAS.507	Animal Classification and Diversity	**CC**	**3**	**-**	**-**	**3**
LAS.508	Biochemistry	**CC**	**3**	**-**	**-**	**3**
LAS.510	Ecology and Evolution	**CC**	**3**	**-**	**-**	**3**
LAS.511	Cell Biology	**CC**	**3**	**-**	**-**	**3**
LAS.520	Lab Course (Practical) – I	**CC**	**-**	**-**	**10**	**5**
	Discipline Elective Courses (Opt any one)					
LAS.513	Techniques in Life Sciences	**DE**	**2**	**-**	**-**	**2**
LAS.514	Animal Cell Culture and Applications	**DE**	**2**	**-**	**-**	
	Inter-Disciplinary (ID) Course					
LAS.515	Fundamentals of Cell Biology	**ID**	**2**	**-**	**-**	**2**
	Compulsory Foundation#					
CST.501	Computer Applications for Sciences	**CF**	**2**	**1**	**-**	**3**
	Total Credits / Marks					**24**

#**Note:** In case of technical difficulty to offer the compulsory foundation courses at the department/university level, the student may opt through MOOCs (online) from the SWAYAM portal.

L: Lectures; T: Tutorials; P: Practical; Cr: Credits; * Compulsory Courses

Examination Pattern

A: Continuous Assessment: [25 Marks]
- i. Surprise Test (minimum three) - Based on Objective Type Tests (10 Marks)
- ii. Term paper (10 Marks)
- iii. Assignment(s) (5 Marks)

B: Pre-Scheduled Mid Semester Test-1: Based on Subjective Type Test [25 Marks]

C: Pre-Scheduled Mid Semester Test-2: Based on Subjective Type Test [25Marks]

D: End-Term Exam (Final): Based on Objective Type Tests [25 Marks]

E: Practical: (Annexure - A)

Semester – II

Course Code	Course Title	Type	L (hr)	T (hr)	P (hr)	Cr
	Core Courses*					
LAS.521	Animal Physiology	**CC**	**4**	**-**	**-**	**4**
LAS.522	Immunology	**CC**	**3**	**-**	**-**	**3**
LAS.523	Molecular Biology	**CC**	**3**	**-**	**-**	**3**
LAS.527	Essentials of Genetics	**CC**	**3**	**-**	**-**	**3**
LAS.540	Lab Course (Practical) – II	**CC**	**-**	**-**	**10**	**5**
	Discipline Elective Courses (Opt any one)					
LAS.525	Nanobiology	**DE**	**2**	**1**	**-**	**3**
LAS.529	Genetic Engineering	**DE**	**2**	**1**	**-**	
	Inter-Disciplinary (ID) Course					
LAS.528	Basics in Neuroscience	**ID**	**2**	**-**	**-**	**2**
	Seminar					
LAS.542	Seminar – I	**SK**	**1**	**-**	**-**	**1**
	Total Credits					**24**

L: Lectures; T: Tutorials; P: Practical; Cr: Credits; * Compulsory Courses

Examination Pattern

A: Continuous Assessment: [25 Marks]
   i. Surprise Test (minimum three) - Based on Objective Type Tests (10 Marks)
   ii. Term paper (10 Marks)
   iii. Assignment(s) (5 Marks)

B: Pre-Scheduled Mid Semester Test-1: Based on Subjective Type Test [25 Marks]

C: Pre-Scheduled Mid Semester Test-2: Based on Subjective Type Test [25Marks]

D: End-Term Exam (Final): Based on Objective Type Tests [25 Marks]

E: Practicals: (Annexure - A)

F: Seminar (Annexure - B)

Semester – III

Course Code	Course Title	Type	L (hr)	T (hr)	P (hr)	Cr
	Core Courses*					
LAS.551	Developmental Biology	**CC**	**3**	**-**	**-**	**3**
LAS.552	Cancer Biology	**CC**	**2**	**-**	**-**	**2**
LAS.570	Lab Course (Practical) – III	**CC**	**-**	**-**	**8**	**4**
	Discipline Elective Courses (Opt any one)					
LAS.553	Vascular Biology	**DE**	**2**	**1**	**-**	**3**
LAS.554	Neurobiology and Degeneration	**DE**	**2**	**1**	**-**	
	Seminar					
LAS.543	Seminar – II	**SK**	**1**	**-**	**-**	**1**
	Compulsory Foundation#					
LAS.502	Research Methodology	**CF**	**2**	**1**	**-**	**3**
LAS.503	Basic Statistics for Sciences	**CF**	**2**	**-**	**-**	**2**
	Research*					
LAS.599	Project (Part – I)	**SK**	**-**	**-**	**12**	**6**
	Total Credits					**24**

#**Note:** In case of technical difficulty to offer the compulsory foundation courses at the department/university level, the student may opt through MOOCs (online) from the SWAYAM portal.

L: Lectures; T: Tutorials; P: Practical; Cr: Credits; * Compulsory Courses

Examination Pattern

A: Continuous Assessment: [25 Marks]
- i. Surprise Test (minimum three) - Based on Objective Type Tests (10 Marks)
- ii. Term paper (10 Marks)
- iii. Assignment(s) (5 Marks)

B: Pre-Scheduled Mid Semester Test-1: Based on Subjective Type Test [25 Marks]

C: Pre-Scheduled Mid Semester Test-2: Based on Subjective Type Test [25Marks]

D: End-Term Exam (Final): Based on Objective Type Tests [25 Marks]

E: Practical: (Annexure - A)

Semester – IV

Course Code	Course Title	Type	L (hr)	T (hr)	P (hr)	Cr
	Course Courses*					
LAS.572	Endocrinology	**CC**	**2**	**-**	**-**	**2**
LAS.573	Metabolism	**CC**	**2**	**-**	**-**	**2**
LAS.574	Animal Behavior	**CC**	**3**	**-**	**-**	**3**
	Discipline Enrichment Course*					
LAS.575	**Career Prospects in Life Sciences**	**DEC**	**3**	**1**	**-**	**4**
	Value Based Elective Foundation					
xxx.xxx	University Level Course	**VB**	**1**	**-**	**-**	**1**
xxx.xxx	University Level Course	**VB**	**1**	**-**	**-**	**1**
	Research*					
LAS.599	Project (Part – II)		**-**	**-**	**12**	**6**
	Total Credits					**19**

L: Lectures; T: Tutorial; P: Practical; Cr: Credits; * Compulsory courses

Examination Pattern

A: Continuous Assessment: [25 Marks]
- i. Surprise Test (minimum three) - Based on Objective Type Tests (10 Marks)
- ii. Term paper (10 Marks)
- iii. Assignment(s) (5 Marks)

B: Pre-Scheduled Mid Semester Test-1: Based on Subjective Type Test [25 Marks]

C: Pre-Scheduled Mid Semester Test-2: Based on Subjective Type Test [25Marks]

D: End-Term Exam (Final): Based on Objective Type Tests [25 Marks]

E: Discipline Enrichment Course: The final evaluation shall be carried out for 50 Marks based on objective type question paper to be set by the associated faculty members. An internal evaluation of objective type 25 Marks each for twice shall be conducted.

F: Project: The final result of the project will be on 5 – point scale and evaluated as Excellent, Very Good, Good, Average, and Unsatisfactory. Which will be mentioned on the mark sheet/transcript but not be counted towards overall Grade Point Average (GPA).

Total No. of Credits:

Semester	No. of Credits
Semester - I	24
Semester - II	24
Semester - III	24
Semester - IV	19
Total no. of credits	**91**

Mode of Transaction

The department faculty members would assist the learners (students) in construction of knowledge by creating experiences where students' old information can transact with new information to create meaningful knowledge. In this context the mode of transaction for the courses to be taught to the students under this M.Sc. program would be as follows:

i. **The classroom learning/practicals/project work would be based on:**

Lecture, Demonstration, Project Method, Seminars, Group discussions, Focused group discussions, Team teaching, Field visits, Brain storming, E- tutoring, Dialogue Mode, Mobile teaching, Collaborative learning, Experimentation, Panel discussion, Tutorials, Problem solving, Debates, Self-learning, and Case studies.

ii. **The following tools shall be used in teaching and practicals:**

PPT, WhatsApp, Videos, Blogs, Multimedia packages, TED Talks, e-content, and google drive.

Annexure – A

Examination Pattern

Practical: Lab course – I, II & III [100 Marks each]

i. Day to day performace – 60 Marks

a. Attendance – 10 Marks
b. Continuous assesment - 30 Marks
c. Lab Record - 10 Marks
d. Over all performance - 10 Marks

ii. End-semester exam – 40 Marks

a. Major Question - 20 Marks
b. Minor Question - 10 Marks
c. Viva-voce - 10 Marks

Annexure – B

Examination Pattern

Credit Seminar: I & II

Seminar: **[50 Marks]**

a. *Report submission -* *10 Marks*
b. *Contents -* *10 Marks*
c. *Presentation skills -* *10 Marks*
d. *Innovation -* *10 Marks*
e. *Question & Answers -* *10 Marks*
(Interaction session)

Modified as per the requiremnts of Curriculum Audit: 30 -5- 2018