

# **Department of Animal Sciences**

School of Basic and Applied Sciences

Central University of Punjab, Bathinda



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

## **Amendment**

**(recommended through 4<sup>th</sup> BoS & 3<sup>rd</sup> School Board)**

**(Note: New codes shall be applicable to the previous Academic Session: 2017 – 18,  
Which was originally recommended through 3<sup>rd</sup> BoS)**

**Program: M.Sc. in Life Sciences (Specialization: Animal Sciences)**  
**(Academic Session: 2017 - 18)**

**Semester – I**

Course Code	Course Title	L (hr)	T (hr)	P (hr)	Cr
	<b>Foundation Course*</b>				
<b>LAS.506</b>	Introduction to Animal Sciences	2	-	-	2
	<b>Core Courses*</b>				
<b>LAS.508</b>	Biochemistry	2	1	-	3
<b>LAS.509</b>	Ecology, Evolution and Diversity	2	1	-	3
<b>LAS.511</b>	Cell Biology	2	1	-	3
<b>LAS.512</b>	Essentials of Genetics	2	1	-	3
<b>LAS.520</b>	Lab Course (Practical) - I	-	-	12	6
	<b>Elective Courses (Opt any one)</b>				
<b>LAS.513</b>	Techniques in Life Sciences	2	-	-	2
<b>LAS.514</b>	Animal Cell Culture and Applications	2	-	-	
	<b>Inter-Disciplinary (ID) Course</b>				
<b>LAS.515</b>	Fundamentals of Cell Biology (IDC)	2	-	-	2
	<b>Seminar</b>				
<b>LAS.597</b>	Seminar – I	1			1
	<b>Total Credits / Marks</b>				<b>25</b>

**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: Seminar-I (Annexure - A)  
F: Practicals: (Annexure - B)

## Semester – II

Course Code	Course Title	L (hr)	T (hr)	P (hr)	Cr
<b>Core Courses*</b>					
<b>LAS.521</b>	Animal Physiology	<b>3</b>	<b>1</b>	<b>-</b>	<b>4</b>
<b>LAS.522</b>	Immunology	<b>2</b>	<b>1</b>	<b>-</b>	<b>3</b>
<b>LAS.523</b>	Molecular Biology	<b>2</b>	<b>1</b>	<b>-</b>	<b>3</b>
<b>LAS.524</b>	Nutrition and Metabolism	<b>2</b>	<b>1</b>	<b>-</b>	<b>3</b>
<b>LAS.540</b>	Lab Course (Practical) – II	<b>-</b>	<b>-</b>	<b>12</b>	<b>6</b>
<b>Elective Courses (Opt any one)</b>					
<b>LAS.525</b>	Nanobiology	<b>2</b>	<b>-</b>	<b>-</b>	<b>2</b>
<b>LAS.526</b>	Behavioural Neurogenetics	<b>2</b>	<b>-</b>	<b>-</b>	
<b>Inter-Disciplinary (ID) Course</b>					
<b>LAS.528</b>	Basics in Neuroscience (IDC)	<b>2</b>	<b>-</b>	<b>-</b>	<b>2</b>
<b>Seminar</b>					
<b>LAS.597</b>	Seminar – II	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>
<b>Total Credits</b>					<b>24</b>

**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: Seminar (Annexure - A)
- F: Practicals: (Annexure - B)

### Semester – III

Course Code	Course Title	L (hr)	T (hr)	P (hr)	Cr
<b>Core Courses*</b>					
<b>LAS.503</b>	Biostatistics and Research Applications	<b>2</b>	<b>1</b>	-	<b>3</b>
<b>LAS.551</b>	Developmental Biology	<b>2</b>	<b>1</b>	-	<b>3</b>
<b>LAS.552</b>	Cancer Biology	<b>2</b>	<b>1</b>	-	<b>3</b>
<b>LAS.570</b>	Lab Course (Practical) – III	-	-	<b>12</b>	<b>6</b>
<b>Elective Courses (Opt any one)</b>					
<b>LAS.553</b>	Vascular Biology	<b>2</b>	-	-	<b>2</b>
<b>LAS.554</b>	Neurobiology and Degeneration	<b>2</b>	-	-	
<b>Research*</b>					
<b>LAS.599</b>	Research Project (Part – I)	-	-	<b>8</b>	<b>4</b>
<b>Total Credits</b>					<b>21</b>

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### 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: Seminar (Annexure - A)
- F: Practical: (Annexure - B)

### Semester – IV

Course Code	Course Title	L (hr)	T (hr)	P (hr)	Cr
	<b>Elective Course (Opt any one)</b>				
<b>LAS.571</b>	Genetic Engineering	2	-	-	2
<b>LAS.572</b>	Endocrinology	2	-	-	
	<b>Research*</b>				
<b>LAS.599</b>	Research Project (Part – II)	-	-	36	18
	<b>Total Credits</b>				<b>20</b>

**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: **Research Project**: Satisfactory (S) / Unsatisfactory (US) as per the current practice by CUPB

**Total No. of Credits and Marks:**

<b>Semester</b>	<b>No. of Credits</b>
Semester I	25
Semester II	24
Semester III	21
Semester IV	20
<b>Total no</b>	<b>90</b>

## Annexure – A

### Examination Pattern

#### Credit Seminars: I & II

**Seminar:** [50 Marks]

- |   |                 |
|---|-----------------|
| <i>a. Report submission -</i>                               | <i>10 Marks</i> |
| <i>b. Contents -</i>  | <i>10 Marks</i> |
| <i>c. Presentation skills -</i>                             | <i>10 Marks</i> |
| <i>d. Innovation -</i>                                      | <i>10 Marks</i> |
| <i>e. Question &amp; Answers -</i><br>(Interaction session) | <i>10 Marks</i> |

## Annexure – B

### Examination Pattern

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

**i. Day to day performance – 60 Marks**

- |                                  |                 |
|----------------------------------|-----------------|
| <i>a. Attendance –</i>           | <i>10 Marks</i> |
| <i>b. Continuous assesment -</i> | <i>30 Marks</i> |
| <i>c. Lab Record -</i>           | <i>10 Marks</i> |
| <i>d. Over all performance -</i> | <i>10 Marks</i> |

**ii. End-semester exam – 40 Marks**

- |                            |                 |
|----------------------------|-----------------|
| <i>a. Major Question -</i> | <i>20 Marks</i> |
| <i>b. Minor Question -</i> | <i>10 Marks</i> |
| <i>c. Viva-voce -</i>      | <i>10 Marks</i> |

**Modified on: 29 - 1 - 2018**