DE LA SALLE UNIVERSITY
**College of Science**

 Department of Biology

**LBYBIO8** – General Zoology Laboratory

*Prerequisite : NONE Prerequisite to: LBYBIOE, LBYBIO3, LBYBIO7,*

 *LBYBIOJ*

**Instructor : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contact details : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **Consultation Hours: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Schedule and Room : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Course Description** |

Laboratory activities emphasizing the study of structures and functions of the organ systems of vertebrates. Laboratory exercises utilize the frog as representative animal but use mammalian specimen whenever possible.

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| **Learning Outcomes** |

On completion of this course, the student is expected to present the following learning outcomes in line with the Expected Lasallian Graduate Attributes (ELGA).

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| **ELGA** | **Learning Outcome** |
| Critical and Creative ThinkerEffective CommunicatorLifelong LearnerService-Driven Citizen | On completion of the course, the student is expected to identify and describe animal structures and their relationship to their functions in the animal body by demonstrating laboratory skills in handling basic equipment and techniques accompanied by accurate observations and participation in all laboratory exercises. |

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| **Final Course Output** |

As evidence of attaining the above learning outcomes, the student is required to do and submit the following during the indicated dates of the term.

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| **Learning Outcome** | **Required Output** | **Due Date** |
| On completion of the course, the student is expected to identify and describe animal structures and their relationship to their functions in the animal body by demonstrating laboratory skills in handling basic equipment and techniques accompanied by accurate observations and participation in all laboratory exercises. | **Laboratory Exercises*** To be submitted every laboratory meeting
* Group presentation – each group delivers a powerpoint presentation of the output for their assigned exercise.
 | Weeks 1-12 |
| **Portfolio*** At the end of the course, each student is required to submit a personal portfolio that reveals his/her assessment of LBYBIO8 as a course incorporated in the laboratory activity worksheets. It also manifests the maturity of the student and the degree of learning that has occurred over a period of three months, or one term.
 | Week 13 |

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| **Rubric for Assessment** |

**A. Group Presentation of Assigned Topics**

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| **Criteria** | **Experts****(3.5-4.0)** | **Team Players****(2.5-3.4)** | **Laid-Back****(1.5-2.4)** | **Spacemen****(1.0-1.4)** |
| **Set Objectives****(30%)** | Objectives were set from the start of the presentation, and were reviewed at the end if it were achieved.Moreover, the group highlighted the significance of the reports of the course. | Objectives were set from the start of the presentation, and were reviewed at the end if it were achieved. | Objectives were set from the start of the presentation, but were not reviewed at the end if it were achieved. | No objectives were set from the start of the presentation. |
| **Content of Presentation****(30%)** | New information was learned from the presentation, and was easy to understand. Moreover, the presentation was concise. | New information was learned from the presentation and was easy to understand. | New information was learned from the presentation but was hard to understand. | No new information was learned from the presentation. |
| **Overall Performance** **(20%)** | The presenters did not read from the slides and made sure everyone in class understood the information they were sharing. Moreover, they were very enthusiastic and knowledgeable of their report. | The presenters did not read from the slides and made sure everyone in class understood the information they were sharing. | The presenters did not read from the slides but made no attempt to assess if everyone in class understood the information they were sharing. | The presenters read from the slides and made no attempt to assess if everyone in class understood the information they were sharing. |
| **Multimedia****(20%)** | The report was creatively and uniquely presented, with the aid of the computer.Moreover, it kept everyone attentive. | The report was creatively and uniquely presented with the aid of the computer. | The report was ordinary and very standard, but was aided by the computer. | The report was dull and boring. |

**B. Portfolio**

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| **Criteria** | **Experts(3.5-4.0)** | **Team Players****(2.5-3.4)** | **Laid Back****(1.5-2.4)** | **Spacemen****(1.0-1.4)** |
| **Organization****(40%)** | Information is very organized with well-constructed paragraphs, use of subheadings, and information is factual and correct. | Information is organized with well-constructed paragraphs and information is factual and correct. | Information is organized but paragraphs are not well-constructed. Information is factual. | Information appears not only disorganized but inaccurate. |

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| **Quality of Presentation** **(40%)** | Information clearly relates to the main topic. It includes several supporting details and/or examples. | Information clearly relates to the main topic. It includes 1-2 supporting details and/or examples. | Information has little to do with the main topic. No details or examples are given. | Information has nothing to do with the main topic. |
| **Mechanics****(20%)** | No grammatical, spelling or punctuation errors. | Almost no grammatical, spelling, or punctuation errors. | A few grammatical, spelling, or punctuation errors. | Many grammatical, spelling, or punctuation errors. |

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| **Additional Requirements** |

* Active individual participation in ALL laboratory activities.
* Submission of individual output or laboratory exercises.
* Participation in and submission of group activities/output.
* Pass all written assessments (quizzes and long exams). NO MAKE-UP exam shall be given on any missed exam except for excused absences stipulated under the provision of the student handbook. NO MAKE-UP quizzes shall be given.
	+ Five (5) long examinations (Practical/Written)
	+ Quizzes
	+ Laboratory Reports

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| **Grading System** |

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| Five (5) Practical/Written Exams, quizzes 90%Laboratory Reports/other outputs/performance 10%**Total : 100%****Passing Grade : 60%** | **Scale:** 92-100% 4.0 86-91% 3.5 80-85% 3.0 75-79% 2.5 70-74% 2.0 65-69% 1.5 60-64% 1.0 <60% 0.0 |

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| **Learning Plan** |

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| **Learning Outcome** | **Laboratory Activities** | **Week** | **Learning Activities** |
| On the completion of the course, the student is expected to identify and describe animal structures and their relationship to their functions in the animal body to demonstrating laboratory skills in handling basic equipment and techniques accompanied by accurate observations and participations in all laboratory exercises. | **Basic Concept**1. The Microscope | 1 | Pre- and Post-Lab discussionExamination of fresh and prepared specimens/slidesGuided ActivityTechnical Report (Journal Format)- Membrane TransportGroup Presentation |
| 2. Animal Cell Structure | 1 |
| 3. Membrane Transport | 2 |
| 4. Cell Division-Mitosis | 3 |
| 5. Types of Tissues | 3-4 |
| 6. Early Embryonic Development | 4 |
| **FIRST LONG EXAM** | 5 |  |
| **Toad/Frog Organ Systems**7. Toad External Anatomy8. Skeletal System | 5-6 | Pre-and Post-lab discussionExamination of fresh and prepared specimens/slidesGuided ActivityGroup Presentation |
| 9. The Muscular System | 6-7 |
| **SECOND LONG EXAM** | 7 |  |

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|  | 10. The Digestive System | 8 | Pre-and Post-lab discussionExamination of fresh and prepared specimens/slidesGuided ActivityGroup Presentation |
| 11. The Respiratory System | 8 |
| 12. The Urogenital System | 9 |
| 13. The Nervous System | 9 |
| 14. The Circulatory System | 10 |
| **THIRD LONG EXAM** | 10 |  |
| **Survey of the Animal Kingdom**15. The Animal-Like Protozoans16. Phylum Porifera17. Phylum Cnidaria | 11 | Pre-and Post-lab discussionExamination of fresh and prepared specimens/slidesGuided ActivityGroup Presentation |
| 18. Phylum Plathyhelminthes | 11 |
| 19. Phylum Nematoda | 12 |
| **FOURTH LONG EXAM** | 12 |  |
| 20. Phylum Annelida21. Phylum Mollusca22. Phylum Arthropoda23. Phylum Echinodermata | 13 | Pre-and Post-lab discussionExamination of fresh and prepared specimens/slidesGuided ActivityGroup Presentation |
| **FIFTH LONG EXAM** | 13 |  |

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| **References** |

**Text/Materials :** E-copies of the laboratory exercises provided to the students.

Hickman, C.P., L.S. Roberts, S.L. Keen, D.J. Eisenhour, A. Larson and H. I’Anson. (2011).

 *Integrated Principles of Zoology.* 15th edition. McGraw Hill Co., Inc.

Miller, S.A. and J.P. Harley. (2013). *Zoology*. 9th edition. McGraw Hill International Edition.

Campbell, N.A. J.B. Reece, L.A. Urray, M.L. Cain, S.A. Wasserman, P.V. Minorsky and R.B. Jackson.

 (2010). *Biology* . 9th edition. Pearson International Edition. Benjamin Cummings Publishing.

Campbell, N.A. et al. (2008). *Biology.* 8th edition. Pearson International Edition. Pearson/Benjamin

 Cummings.

Freeman, S. (2011). *Biological Science*. 4th edition. International Edition. Benjamin Cummings Publishing.

Hickman, C.P., L.B. Kats and S. Keen, (2007). *Laboratory Studies in Integrated Principles of Zoology*.

 14th edition. McGraw Hills, Co., Inc.

Maders, S. (2011). *Concepts of Biology*. 2nd edition. McGraw Hill. International Edition

Raven, P.H., G.B. Johnson, J. Losos and S. Singer. (2008). *Biology*. 8th edition. McGraw Hill Co., Inc.

Reece, J.B. et al. (2012). *Campbell Biology: Concepts and Connections*. 7th edition. Pearson Education

 South Asia PTE.LTD. (Phil. Edition)

Solomon, E., L. Berg, D. Martin (2008). B*iology*. 8th edition. International Student Edition.

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| **Online Resources** |

Pearson Education (2012). Campbell Biology Gateway Retrieved September 14, 2012 from <http://www.pearsonhighered.com/campbell/>

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| **Class Policies** |

* Honesty and integrity are integral components of the academic process.
* Proper decorum is to be observed among peers in all activities.
* Absence and tardiness are strongly discouraged.
* Attentiveness and active participation are critical to successful learning.
* The use of mobile phones and other electronic devices is not allowed during class hours, unless necessary upon the teacher's approval.
* The policies on academic dishonesty, attendance and behavior stipulated in your Student Handbook are honored in this course.
* Any kind of plagiarism is strongly prohibited.

Approved by:

**DR. MARY JANE CRUZ-FLORES**

Chair, Biology Department