DE LA SALLE UNIVERSITY   
**College of Science**

Biology Department

**CELLBIO –** Cell Biology

*Prerequisite: ZOOLONE/LBYBIO1,ZOOLFUN/LBYBIO8,BOTAONE/LBYBIOA, BOTAFUN/LBYBION and BIOCHEM*

**Instructor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contact Details: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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

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| **Course Description** |

Cell Biology is a 3-unit lecture course that discusses the relationship of structure and functions of the different components of the cell at the molecular level. It also takes up the complex interactions among cells and the different techniques used in the study of the cell.

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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 Thinker  Effective Communicator  Lifelong Learner  Service-Driven Citizen | At the end of the course, the student should be able to differentiate among the prokaryotes, eukaryotes and acellular infectious entities, identify and characterize the different chemical components of the cells, describe the structural organization and functions of the cellular constituents, relate structure to functions, understand the cellular processes, understand the different interactions among cells, and describe the working principle of the different techniques used in the study of the cell. |

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| **Rubric for Assessment** |

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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 report to their 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 were learned from the presentation, but was hard to understand. | No new information was learned from the presentation. |

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| **Overall Performance of the Group**  **(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, and 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. |

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| **Grading System** |

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| Quizzes and Long Exams (2) 60%  Finals (comprehensive) 30%  Journal Reporting 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** | **Lecture Topics** |
| At the end of the course, the student should be able to differentiate among the prokaryotes, eukaryotes and acellular infectious entities, identify and characterize the different chemical components of the cells, describe the structural organization and functions of the cellular constituents, relate structure to functions, understand the cellular processes, understand the different interactions among cells and describe the working principle of the different techniques used in the study of the cell. | 1. Introduction   Cell Theory, Evolution of the Cell, Prokaryotic and Eukaryotic, Three Domains of Life |
| 1. Biochemistry of the Cell: Biomolecules ( will be incorporated into the different topics) |
| 1. Cell Membranes- Structure and Function, Permeability, Transport Across Membranes |
| 1. Endomembrane System and Vesicular Traffic,   Intracellular Compartmentalization, Vesicular Traffic |
| **FIRST LONG EXAM** |
| 1. Regulation of Cell Cycle and Cancer |
| 1. Cell Signaling and Cancer   Signal transduction, chemical signal mechanisms; cell signaling involved in regulating cell growth, division, apoptosis |
| **SECOND LONG EXAM** |
| 1. Extra Cellular Structures   Extra cellular matrix, cell adhesion, cell junctions |
| VIII. Journal Article Reporting |
| **FINAL EXAM** |
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| **References** |

**Text/Materials**:

Hardin, J.U., Bertoni, G., Kleinsmith, L. 2012. Becker’s World of the Cell. Benjamin Cummings Publishing Co., USA.

**Other References**

Karp, G. 2008. Cell and Molecular Biology: Concepts and Experiments. 5th edition. John Wiley and Sons, Inc.

Malacinski, G.M. 2006. Essentials of Molecular Biology. 4th edition. Jones and Bartlett Publishers.

Alberts, B., Bray, D., Lewis, J., Raff, M. Roberts, K. & Watson, JD. 2002. Molecular Biology of the Cell. 4th edition, Gardland Publishing, Inc., NY, London.

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| **Examples of Online Resources** |

[www.ncbi.nih.gov](http://www.ncbi.nih.gov).

[www.jcb.org](http://www.jcb.org)

[www.mit.edu:8001/esgbio](http://www.mit.edu:8001/esgbio)

[www.cellsalive.com](http://www.cellsalive.com)

Approved by:

**DR. MARY JANE C. FLORES**

Chair, Biology Department