



Republic of the Philippines
CEBU NORMAL UNIVERSITY
Osmeña Blvd., Cebu City, 6000, Philippines

College of Computing, Artificial Intelligence and Sciences

Telephone No.: (+63 32) 254 1452 loc. 144

Email: ccaais@cnu.edu.ph

Website: www.cnu.edu.ph



Course Syllabus in ENVIBIO 2A & 2B Terrestrial Ecology (Lecture & Laboratory)

1st Sem, AY 2024-2025

Revision Date: 28 August 2024

Program : Bachelor of Science in Biology

CMO No. : 49 Series of 2018

BOR Res. No. : 11 Series of 2018

Course Credit: 9 units (6 units Lab, 3 units Lec)

Pre-requisite/s: BIO 5 – General Ecology

Submission Date: 28 August 2024

I. Vision : By 2027, CNU a Globally Recognized Institution as Agile and Technologically-Proofed SMART Campus (GREAT SMART CAMPUS)

II. Mission : Developing graduates equipped with world-class competences and imbued with positive values for them to be future-proof ready and become great leaders, professionals and stewards in their chosen vocation and of the society amidst destructive, volatile, uncertain, complex, ambiguous and divergent (DVICAD) conditions.

Core Values:

Commitment to Excellence

Social Sensitivity

Honesty and Integrity

Flexibility and Adaptability

Inclusiveness

Knowledge Generation-Driven

III. Quality Policy: Cebu Normal University commits to deliver excellence in instruction, research, and extension services for global competitiveness, to meet increasing levels of customer demand, statutory, regulatory, and international standards through continuous quality improvement, transparency, and good governance.

Towards this end, university goals and aspirations are aligned to the institution's strategic directions, university charter, government strategies for global preservation and poverty alleviation. Quality management principles of customer focus, effective and efficient leadership in all levels, people management, process approach evidence-based decision making and relationship management are observed.



Certification Date: 24 January 2024
Recertification due date: 24 January 2027
For verification of the certificate please
access www.gcl-intl.com (Certification
check and type the registration number)



SDF-CDE-014-001-00



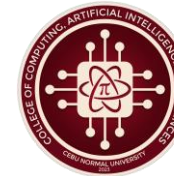
Republic of the Philippines
CEBU NORMAL UNIVERSITY
Osmeña Blvd., Cebu City, 6000, Philippines

College of Computing, Artificial Intelligence and Sciences

Telephone No.: (+63 32) 254 1452 loc. 144

Email: ccaais@cnu.edu.ph

Website: www.cnu.edu.ph



To ensure compliance with the commitment, relevant and responsive virtual and /or physical monitoring, review, and upgrading of service delivery are implemented.

IV. Exit Institutional Outcomes: Graduates of Cebu Normal University are design thinkers, facilitators of learning, mission-driven workers, and protectors of nature.

V. Program Outcomes:

- BSB01.** Demonstrate an in-depth understanding of the basic principles governing the science of life.
- BSB02.** Utilize techniques/procedures relevant to biological research work in laboratory or field settings.
- BSB03.** Carry out statistical computations and use of appropriate technologies in the analysis of biological data through the use of statistical tools.
- BSB04.** Critically assess current views and theories in various areas of the biological sciences.
- BSB05.** Articulate the latest developments in biology and appreciate the limitations and implications of science in everyday life.
- BSB06.** Effectively communicate ideas, problems and solutions to other scientist, decision makers and the public both in English and in the vernacular.
- BSB07.** Work effectively and independently in multi-disciplinary and multi-cultural teams.
- BSB08.** Demonstrate professional, social and ethical responsibilities in all aspects and areas of practice in biology and environmental science.
- BSB09.** Preserve and promote Filipino historical and cultural heritage by conducting conservation projects.
- BSB10.** Participate in the generation of new knowledge or in research and development projects aligned to local and national development agenda particularly for food security, poverty alleviation and environmental protection.

VI. Course Description:

In this 5-unit lecture and laboratory course, students shall apply ecological concepts to investigate, discuss, and further understand the structure, interactions, and processes that shape and govern major terrestrial ecosystems. The course will cover various components of these ecosystems, from the organisms to the ecosystem as a whole, and more. These will be tackled through lectures, class discussions, as well as laboratory and field activities.



Certification Date: 24 January 2024
Recertification due date: 24 January 2027
For verification of the certificate please
access www.gcl-intl.com (Certification
check and type the registration number)



SDF-CDE-014-001-00



Republic of the Philippines
CEBU NORMAL UNIVERSITY
Osmeña Blvd., Cebu City, 6000, Philippines

College of Computing, Artificial Intelligence and Sciences

Telephone No.: (+63 32) 254 1452 loc. 144

Email: ccaais@cnu.edu.ph

Website: www.cnu.edu.ph



VII. Course Outcomes:

Course Outcomes	Program Outcomes Aligned to:
C1 Describe major ecosystems and explain adaptations of organisms to the variation in abiotic factors found in major ecosystem types.	BSB01. Demonstrate an in-depth understanding of the basic principles governing the science of life;
C2 Employ various ecological and biological techniques, both in laboratory and field settings;	BSB02. Utilize techniques/procedures relevant to biological research work in laboratory or field settings;
C3 Apply fundamental quantitative skills, including models and statistical analyses in field-based and laboratory-based exercises;	BSB03. Carry out statistical computations and use of appropriate technologies in the analysis of biological data through the use of statistical tools;
C4 Synthesize information from original, peer-reviewed journals in the context of established ecological knowledge;	BSB04. Critically assess current views and theories in various areas of the biological sciences;
C5 Propose a conservation plan that promotes preservation of key biodiversity sites and protected areas.	BSB10. Participate in the generation of new knowledge of in research and development projects aligned to local and national development agenda particularly for food security, poverty alleviation and environmental protection.



Certification Date: 24 January 2024
Recertification due date: 24 January 2027
For verification of the certificate please access www.gcl-intl.com (Certification check and type the registration number)





VIII. Course Design Matrix:

Intended Learning Outcomes (ILOs)	Course Content	Assessment Tasks (ATs)	Teaching and Learning Activities (TLAs)	Suggested References	Timetable (in hours)	Remarks (completed, in progress, or other personalized feedback)
1. Explain the CNU Vision, Mission and Core Values 2. Get to know the class (students, instructor, syllabus, outcomes, evaluation) 3. Familiarize and follow classroom policies	<u>Class Policies</u> 1. CNU Vision, Mission, and Core Values 2. Class Overview and Outcomes 3. Quality Policy 4. Get to know / Groupings	-	-	CNU Student Manual Course Syllabus	Lab: 3 hrs Lec: 1.5 hrs	
1. Define terrestrial ecology and review basic principles of ecology;	<u>LAB 1</u> Overview of Terrestrial Ecology	<u>LAB 1</u> Quiz, Writing Exercise	<u>LAB 1</u> Activity 1; Discussion	Lecture slides; Textbooks (see “Other References” section);	Lab: 2.5 hrs Lec: 1.5 hrs	





3. Relate terrestrial ecology and its application in our everyday lives; 4. Formulate specific and realistic questions and hypotheses related to terrestrial ecology; 5. Understand basic principles of scientific writing and create outlines to aid writing	Basics of Ecological Research: Research Questions and Hypotheses, Principles of Sampling, Experimental Design Elements of a Good Scientific Paper <u>LEC 1</u> Introduction to Terrestrial Ecology	<u>LEC 1</u> Short assessment quiz	<u>LEC 1</u> Lecture, Class Discussion	Journal article (Case analysis for discussion in class)		
1. Know the difference between climate and weather, and how climate is driven by the Earth's energy budget derived mainly from the Sun;	<u>LAB 2</u> Ecological Statistics <u>LEC 2</u> Life on Land: Terrestrial Biomes – Earth's Climate System	<u>LAB 2</u> R Codes; Exercise Sheet <u>LEC 2</u> Short assessment quiz	<u>LAB 2</u> Activity 2; Discussion; Programming; Post-Lab <u>LEC 2</u>	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 6 hrs Lec: 3 hrs	





2. Explain the structure and circulation of the atmosphere and hydrosphere, and how these contribute to climate and their effects to ecosystems; 3. Refresh on basic statistical concepts and tests, and understand the basics of data management and ecological statistics			Lecture, Class Discussion, Quiz			
1. Explain the purpose of soils, soil air, and soil water in terrestrial ecosystems; 2. Determine and elaborate the soil types	<u>LAB 3</u> Vegetation Sampling <u>LEC 3</u> Life on Land: Terrestrial	<u>LAB 3</u> Exercise Sheet / Lab Report <u>LEC 3</u>	<u>LAB 3</u> Activity 3; Discussion; Post-Lab <u>LEC 3</u>	Lecture slides; Textbooks (see “Other References” section);	Lab: 3 hrs Lec: 1.5 hrs	





and texture types based on physical properties and the processes that form each 3. Discuss common vegetation sampling methods used in ecological research 4. Appreciate the importance and diversity of vegetation in ecology	Biomes – Soils and Sediment	Short assessment quiz	Lecture, Class Discussion, Quiz	Journal article (Case analysis for discussion in class)		
1. Know the definition of biomes and what shapes them, particularly in the terrestrial setting; 2. Apply the previous lessons to describe and understand the structure	<u>LAB 4</u> Terrestrial Invertebrate Sampling and Taxonomic Identification <u>LEC 4</u> Life on Land: Terrestrial	<u>LAB 4</u> Exercise Sheet / Lab Report <u>LEC 4</u> Short assessment quiz	<u>LAB 4</u> Activity 4; Discussion; Sampling; Taxonomic identification; Post-Lab <u>LEC 4</u>	Lecture slides; Textbooks (see “Other References” section); Student presentation	Lab: 3 hrs Lec: 1.5 hrs	





of the various terrestrial biomes	Biomes – Flora and Fauna		Lecture, Student presentation, Quiz			
3. Demonstrate common sampling techniques used for several types of insects and arthropods						
4. Observe the morphological and order-level diversity in terrestrial arthropods, and identify them using dichotomous keys of these traits						
5. Relate environmental conditions to patterns in species diversity in insects						





1. Review several concepts of evolution that are essential in understanding its role in ecosystems; and 2. Understand how ecology and evolution affect each other and use this interaction in deducing the role of evolution in organisms' adaptations 3. Demonstrate proper way to sample volant mammals 4. Analyze distribution data to infer relationship with environment	<u>LAB 5</u> Bat Sampling <u>LEC 5</u> Organisms in Terrestrial Ecology: Adaptations and Evolution	<u>LAB 5</u> Exercise Sheet / Lab Report <u>LEC 5</u> Short assessment quiz	<u>LAB 5</u> Activity 5; Discussion; Sampling (if possible); Taxonomic identification; Post-Lab <u>LEC 5</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 1.5 hrs	
--	---	--	---	---	--------------------------------	--





Long Exam 1 (Lecture) – Week 9 (19 Sep)

1. Explain various species interactions and how they affect terrestrial ecosystems;	<u>LAB 6</u> Bird Sampling	<u>LAB 6</u> Exercise Sheet / Lab Report	<u>LAB 6</u> Activity 6; Discussion; Bird Census (if possible); Post-Lab	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 3 hrs	
2. Define and compare community structures and the interwoven species interactions in terrestrial ecosystems;	<u>LEC 6</u> Species Interactions and Communities	<u>LEC 6</u> Short assessment quiz	<u>LEC 6</u> Lecture, Class Discussion, Quiz			
3. Demonstrate the point count method						
4. Determine the different feeding guilds						
5. Estimate population using appropriate tests						





1. Explain various agents of change - disturbance and stress -in terrestrial ecosystems; 2. Explain succession stages and models in terrestrial ecosystems 3. Demonstrate the transect method 4. Understand the importance of the species accumulation curve	<u>LAB 7</u> Herpetofaunal Sampling <u>LEC 7</u> Succession	<u>LAB 7</u> Exercise Sheet / Lab Report <u>LEC 7</u> Short assessment quiz	<u>LAB 7</u> Activity 7; Discussion; Sampling (if possible); Taxonomic identification; Post-Lab <u>LEC 7</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 1.5 hrs	
1. Discuss what an ecosystem is, and what is studied in ecosystem ecology;	<u>LAB 8</u> Abiotic Environment	<u>LAB 8</u> Exercise Sheet / Lab Report	<u>LAB 8</u> Activity 8; Discussion; Sampling (if possible); Post-Lab	Lecture slides; Textbooks (see “Other References” section);	Lab: 3 hrs Lec: 1.5 hrs	





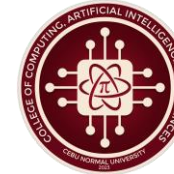
2. Understand the fundamental concepts of the components that govern ecosystems: structure, function, and changes, both natural and anthropogenic 3. Demonstrate the use of at least one basic terrestrial sampling method 4. Discuss common abiotic sampling methods used in ecology	<u>LEC 8</u> Ecosystem Concept	<u>LEC 8</u> Short assessment quiz	<u>LEC 8</u> Lecture, Class Discussion, Quiz	Journal article (Case analysis for discussion in class)		
1. Describe budgets and controls over the hydrologic cycle;	<u>LAB 9</u> Field Safety Lecture & Field Preparation	<u>LAB 9</u> Quiz	<u>LAB 9</u> Discussion; Post-Lab	Lecture slides; Textbooks (see “Other References” section);	Lab: 3 hrs Lec: 3 hrs	





2. Explain how water is gained, stored, and lost along water potential gradients from the atmosphere, to the soil, to ecosystem flora	<u>LEC 9</u> Functions in Terrestrial Systems: Water Balance	<u>LEC 9</u> Short assessment quiz	<u>LEC 9</u> Lecture, Class Discussion, Quiz	Journal article (Case analysis for discussion in class)		
3. Trace water flow and budgets in specific terrestrial biomes.						
4. Understand best practices to ensure safety during field work						
5. Understand the importance of proper preparation and organization prior to any field activity						
Midterms (Lecture) – Week 9 (10 Oct)						





1. Determine energy sources, sinks, and productivity in terrestrial ecosystems; 2. Describe how photosynthesis contributes to the carbon inputs of terrestrial ecosystems; 3. Familiarize on the GPP and NPP concept as a measure of carbon production in ecosystems; 4. Explain trophic levels, trophic systems, and trophic cascades in terrestrial ecosystems	<u>LAB 10</u> Field Preparation Critiquing of SP Proposal (online) <u>LEC 10</u> Functions in Terrestrial Ecosystems: Energy Flow and Trophic Dynamics	<u>LAB 10</u> SP Proposal <u>LEC 10</u> Short assessment quiz	<u>LAB 10</u> Feedback discussion; Field preparation <u>LEC 10</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 4.5 hrs	
---	--	--	---	---	--------------------------------	--





and how they affect energy transfer.						
1. Explain the function of nutrients in terrestrial ecosystems; 2. Elaborate the nitrogen cycle in terrestrial ecosystems, from its sources to transfers to sinks, and the role and fate of various forms of nitrogenous compounds; 3. Describe the other element cycles in terrestrial ecosystems; and 4. Trace nutrient cycles in specific terrestrial	<u>LAB 11</u> Field Preparation Writing Break for SP <u>LEC 11</u> Functions in Terrestrial Systems: Nutrient Cycling	<u>LAB 11</u> SP Proposal <u>LEC 11</u> Short assessment quiz	<u>LAB 11</u> Writing; Field preparation <u>LEC 11</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 3 hrs	





biomes and trophic levels.						
Fieldwork – Week 10 (17-20 Oct)						
1. Recall species and biodiversity concept, their role in ecosystems, and measures of biodiversity; 2. Explain functional types/groups, determine the importance and roles of different functional types 3. Discuss the integrated effects of functional diversity in ecosystems; 4. Discuss the functional types and diversity in	<u>LAB 12</u> Writing Break <u>LEC 12</u> Functions in Terrestrial Systems: Species Effects on Ecosystem Processes	<u>LAB 12</u> Data and Manuscript Progress <u>LEC 12</u> Short assessment quiz	<u>LAB 12</u> Writing, Data processing and analysis <u>LEC 12</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 3 hrs	





specific terrestrial ecosystems/biomes						
1. Understand the threats that terrestrial ecosystems face, and the approaches done for their conservation 2. Understand the interconnectivity of ecosystems and how the effects of threats can cross different ecosystems in an area	<u>LAB 13</u> Specimen Processing <u>LEC 13</u> Landscape Ecology and Conservation in Terrestrial Ecosystems	<u>LAB 13</u> Data and Manuscript Progress <u>LEC 13</u> Short assessment quiz	<u>LAB 13</u> Writing, Data processing and analysis <u>LEC 13</u> Lecture, Class Discussion, Quiz	Lecture slides; Textbooks (see “Other References” section); Journal article (Case analysis for discussion in class)	Lab: 3 hrs Lec: 4.5 hrs	
Long Exam 3 (Lecture) – 21 Nov						
1. Discuss global environmental issues that affect terrestrial	<u>LAB 14</u> Writing Breaks, SP Analyses and Writing	<u>LAB 14</u> Data and Manuscript Progress	<u>LAB 14</u> Writing, Data processing and analysis	Lecture slides; Textbooks (see “Other References” section);	Lab: 30 hrs Lec: 3 hrs	





ecosystems and potential solutions to resolve them	<u>LEC 14</u> Philippine Terrestrial Ecosystems	<u>LEC 14</u> Short assessment quiz; Student presentation	<u>LEC 14</u> Lecture, Student presentations, Quiz	Student presentations		
Submission of Exercise Sheets / Lab Reports for - Insects (Acty 4), Bats (Acty 5), Birds (Acty 6), Herps (Acty 7), and Habitat Assessment (Acty 8) & Post-Fieldwork Discussion – 11 Nov (Week 14)						
SP Defense – 25 Nov (Week 16)						
Final Exam (Lecture) & SP Manuscript Deadline – 9-13 Dec (Week 18)						

Note: *include the materials and links in the ATs and OBTL columns

Flexibility Provision. The course design may include additional topics, activities, and enrichment measures deemed necessary based on the students’ needs.

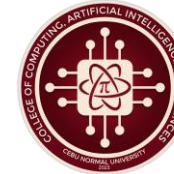
IX. Other References:

Bowman WD, Hacker SD, Cain ML. 2017. *Ecology* (4th Edition). USA: Sinauer Associates.

Chapin FS III, Matson PA, Vitousek PM. 2011. *Principles of Terrestrial Ecosystem Ecology* (2nd edition). USA: Springer Science+Business Media, LLC.

Agren GI, Andersson FO. 2012. *Terrestrial Ecosystem Ecology: Principles and Applications*. UK: Cambridge University Press.





X. Course Requirements:

- Lecture:
 - Minor: Quizzes
 - Major: Student Reports, Critic paper and Homework
- Laboratory:
 - Minor: Quizzes
 - Major: Fieldwork, Special Project (SP) Proposal, Defense, and Final Manuscript

XI. Grading Scheme:

- | | |
|-------------------------------|------------|
| Lecture | |
| ○ Quizzes | 20% |
| ○ Presentation | 15% |
| ○ Critic Paper and Homework | 15% |
| ○ Attendance | 10% |
| ○ <u>Midterm / Final Exam</u> | <u>40%</u> |
| ○ TOTAL | 100% |
- | | |
|---|------------|
| Laboratory: | |
| ○ Laboratory Reports / Exercises | 20% |
| ○ Quizzes | 15% |
| ○ Class Participation / Group Peer Evaluation | 15% |
| ○ Attendance | 10% |
| ○ <u>Midterm / Final Exam</u> | <u>40%</u> |
| ○ TOTAL | 100% |

Final Grade: (Midterm Grade 50% + Final Term Grade 50%) Final Grade: (Midterm Grade 50% + Final Term Grade 50%)

Using the Transmutation Table, the % equivalent of the score obtained in the Midterm Examination will be determined using the 60% criterion. 40% of this grade equivalent will be added to the 60% CS. The 2 percentages (60%+40%) put together will account for the Midterm grade (MT). The same process is done in the Final Term (FT) grade. Final Grade rating for the whole semester is computed with a 50% weight for MT and FT or getting the average of MT and FT.





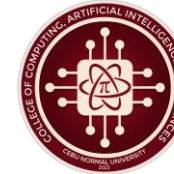
Republic of the Philippines
CEBU NORMAL UNIVERSITY
Osmeña Blvd., Cebu City, 6000, Philippines

College of Computing, Artificial Intelligence and Sciences

Telephone No.: (+63 32) 254 1452 loc. 144

Email: ccaais@cnu.edu.ph

Website: www.cnu.edu.ph



Designed by:

RUSSEL CHRISTINE B. CORCINO, MSc.

Signature over Printed Name of the Faculty

Consultation Time: WTh, 9:00 am – 12:00 pm

Date of Submission:

Utilized by:

RUSSEL CHRISTINE B. CORCINO, MSc.

Signature over Printed Name of the Faculty

Consultation Time: WTh, 9:00 am – 12:00 pm

Reviewed and Recommended by:

Signature over Name of the Program Chair

Approved:

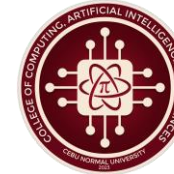
College Dean



Certification Date: 24 January 2024
Recertification due date: 24 January 2027
For verification of the certificate please
access www.gcl-intl.com (Certification
check and type the registration number)



SDF-CDE-014-001-00

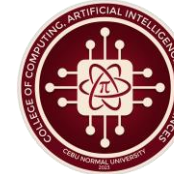


APPENDICES

- Rubrics for Laboratory Reports: [Source: Alabama A&M University]**

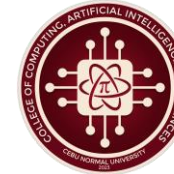
Category	Excellent (A) 95%	Good (B) 85%	Fair (C) 75%	Poor (D) 65%	Fail (F) 0%
Title (5%)	Clearly describes the content of the current lab exercise. Uses descriptive words that are associated with the lab.	Describes the content but the usage of descriptive words is not appropriate	The content is not clearly described. Fair use of descriptive words	No title. Poor description or poor use of descriptive words.	No submission/No effort exhibited
Introduction& Objectives (15%)	Clear background information based on a thorough literature search. Uses proper “in text” citations. Includes a rationale for the study along with a hypothesis.	Contains background information but is not complete. The hypothesis is partially stated.	Background information is not complete and lacks proper “in text” citations. The hypothesis is not clearly stated.	Very little or no background information. No “in text” citations. Unrelated or plagiarized introduction.	No submission/No effort exhibited
Materials and Methods (20%)	Contains a complete list of the experimental procedures. Steps taken during the lab are easy to follow in a paragraph form.	One or more relevant pieces of information are missing. The section is not very well organized	Misses several components of the experimental procedures. There is a lack of organization and there is not proper	Procedural steps are incorrect, illogical, unrelated or plagiarized.	No submission/No effort exhibited





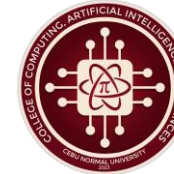
	The section is organized in a way that the reader understands the logical flow of the lab. Proper use of third person and past tense.	Use of first person or improper use of verb tense appears in part of the text.	use of grammar standards.		
Data Analysis& Discussion (25%)	Key results are presented in an orderly and logical sequence using both text and illustrative materials (Tables and Figures). All the relevant information obtained in the experiment is included. All calculations are provided in a logical manner using proper units	One or more key results are missing. Figures and tables are present but contain minor errors.	Misses several key results. Figures lack proper identification in the Y and X axis. Tables have missing titles. The text doesn't follow the sequence of the tables and/or figures.	Major results are not included. Figures and tables are poorly constructed or not present. There is evidence of plagiarism.	No submission/No effort exhibited
Conclusion (20%)	Proper interpretation of results. Summarizes data used to draw conclusion Discusses applications or real life situations	Interpretation of results is presented. However, there is a disconnection between the discussion and the testable	Misses the interpretation of key results. There is little connection between	Very poor interpretation of the results. No connection between discussion and introduction. Evidence of plagiarism	No submission/No effort exhibited





	Addresses hypothesis and cites sources of errors Connects the conclusion with the introduction by way of the stated hypothesis and literature cited.	hypothesis identified in the introduction.	the discussion and the introduction.		
Literature Cited (5%)	Provides a complete list of the “in text” references provide in the test of the paper. Uses the correct stile (i.e. APA, MLA) for citations	Most but not all “in text” references are provided. Some inconsistency on the stile used is evident.	Misses several references or doesn’t adhere to the correct stile	Most references are not included and/or the stile used is incorrect.	No submission/No effort exhibited
Report format and quality (10%)	Lab report submitted as directed, and on time. Directions were followed, questions were answered correctly.	Minor errors in format or procedures were encountered	Directions were not explicitly followed.	Directions were not followed.	No submission/No effort exhibited





• **Rubrics for Special Project (SP) [Source: Alabama A&M University]**

Category	Excellent (A) (95%)	Good (B) (85%)	Fair (C) (75%)	Poor (D) (65%)	Fail (F) 0%
Title (5%)	Clearly describes the content of the paper. Uses descriptive words that are associated with the experiment.	Describes the content but the usage of descriptive words is not appropriate	The content is not clearly described. Fair use of descriptive words	No title. Poor description or poor use of descriptive words.	No submission/No effort exhibited
Abstract (10%)	Clear summary of the paper, including the following components: identifies the objective(s) of the project, includes a brief description of experimental methods, major findings and a brief conclusion(s)	The summary is clear but misses one or two components such as the methods used or major results from the experiment.	Misses several components and the summary doesn't reflect the entire paper.	Misses several major components. Unrelated or plagiarized components.	No submission/No effort exhibited
Introduction (15%)	Clear background information based on a thorough literature search. Uses proper "in text" citations. Includes a	Contains background information but is not complete. The hypothesis is partially stated.	Background information is not complete and lacks proper "in text" citations. The	Very little or no background information. No "in text" citations. Unrelated or plagiarized introduction.	No submission/No effort exhibited





	rationale for the study along with a hypothesis.		hypothesis is not clearly stated.		
Materials and Methods (15%)	Contains a complete list of the experimental procedures including: the organism(s) studied; the experimental design used, variables measured, number of samples collected, and statistical procedures. The section is organized in a way that the reader understands the logical flow of the experiment. Proper use of third person and past tense.	One or more relevant pieces of information are missing. The section is not very well organized Use of first person or improper use of verb tense appears in part of the text.	Misses several components of the experimental procedures. There is a lack of organization and there is not proper use of grammar standards.	Procedural steps are incorrect, illogical, unrelated or plagiarized.	No submission/No effort exhibited
Results (20%)	Key results are presented in an orderly and logical sequence using both text and illustrative materials	One or more key results are missing. Figures and tables are present but contain minor errors.	Misses several key results. Figures lack proper identification in the Y and X axis.	Major results are not included. Figures and tables are poorly constructed or	No submission/No effort exhibited





	(Tables and Figures). All the relevant information obtained in the experiment is included		Tables have missing titles. The text doesn't follow the sequence of the tables and/or figures.	not present. There is evidence of plagiarism.	
Discussion (Note: Results and discussion may be combined in one section) (25%)	Proper interpretation of results. Connects the discussion with the introduction by way of the stated hypothesis and literature cited. Reflects on the next step(s) to be performed in light of the results of the current investigation	Interpretation of results is presented. However, there is a disconnection between the discussion and the testable hypothesis identified in the introduction.	Misses the interpretation of key results. There is little connection between the discussion and the introduction. There is no clear indication on the future steps of the investigation.	Very poor interpretation of the results. No connection between discussion and introduction. Evidence of plagiarism	No submission/No effort exhibited
Literature Cited (10%)	Provides a complete list of the "in text" references provide in the test of the paper. Uses the correct stile (i.e. APA, MLA) for citations	Most but not all "in text" references are provided. Some inconsistency on the stile used is evident.	Misses several references or doesn't adhere to the correct stile	Most references are not included and/or the stile used is incorrect.	No submission/No effort exhibited





PROOF OF DISSEMINATION

The undersigned attest that the course syllabus content was well-disseminated to the class by the professor handling the course.

Degree Program: _____

Names	Year and Section/Bloc	Signature



Certification Date: 24 January 2024
Recertification due date: 24 January 2027
For verification of the certificate please
access www.gcl-intl.com (Certification
check and type the registration number)

