《Science Research and Enquiry》Syllabus

Course Number: NANA2087
Course Name: Science Research and Enquiry
Course Category: Selective Course
Credits/Contact Hours: 4 Credits: 72 hours
Evaluation Method: Research Paper + Critical Paper + Final Examination
Semester: 2nd semester
Prerequisites: NANA1046, NANA1048, NANA1054
Follow-Up: NANA2085
Lecturer: Sarah Dorsey, Alexander Brandt
Syllabus Author: Sarah Dorsey
Syllabus Reviewer: Alexander Brandt
Text Book: None

(1) Specific Goals for the Course

This course introduces students to the nature of scientific research. Initially, students will consider what research is and why it is important. Based on observation and enquiry, students will learn the academic skills required to conduct their own scientific investigation. The course will outline the steps involved in collecting, analysing, and discussing data. There will be a focus on the reading skills used to extract specific information from scientific and technical texts written in English, and this will be juxtaposed against less robust, non-academic literature in mainstream media. These skills will be supported by learning functional grammar and vocabulary specific to the accepted IMRAD publishing norms. Throughout this process students will be challenged to critically analyse both the literature, as well as the methods of their own scientific enquiry. Finally, their writing skills will develop the lexis and tone that signals their membership to the international scientific community.

By the end of the course, students should be able to:

(i) Work in groups to produce scientific writing with equal contribution from each member. (Support Graduation Requirements Indicator 9-2).

(ii) Use accurate English vocabulary and grammar in discussing and evaluating current ideas in the scientific community. (Support Graduation Requirements Indicator 10-3)

(2) Topics for the Course

At the end of this course, students will be able to:

- Identify the practical and theoretical types of research conducted to satisfy scientific enquiry
- Collect, analyze, and present data using the IMRAD conventions.
- Interpret the structure and tone of scientific literature.
- Find and extract information from various academic sources.
- Employ writing techniques that demonstrate a scientific interpretation of a topic.

(3) Assessments for the Course

- **Course Score = Research Paper (RP, 30%) + Critical Paper (CP, 40%) + Final Examination (FE, 30%)**

- **Achievement of Course Goal = (RP Mean Score*RP Weight*0.3 + CP Mean Score*CP Weight*0.4 + FE Mean Score*FE Weight*0.3) / (100*RP Weight*0.3 + 100*CP Weight*0.4 + 100*FE Weight*0.3)**

Course Goal	RP Weight	CP Weight	FE Weight
(i) Work in groups to produce scientific writing with equal contribution from each member. (Support Graduation Requirements Indicator 9-2).	0.3	0.7	0
(ii) Use accurate English vocabulary and grammar in discussing and evaluating current ideas in the scientific community. (Support Graduation Requirements Indicator 10-3)	0.7	0.3	1

Rubrics for the Course:

Course Goal	90-100 (Excellent)	75-89 (Good)	60-74 (Pass)	0-59 (Fail)
(i) Work in groups to produce scientific writing with equal contribution from each member. (Support Graduation Requirements Indicator 9-2).	Values, encourages, and acknowledges the work of other group members.	Respects differing points of view. Agree on group priorities, goals, and procedures.	Listens attentively to members of the group. Contributes some to end product of the group.	Acknowledges members of the group. Cooperates reluctantly or obstructs progress.
(ii) Use accurate English vocabulary and grammar in discussing and evaluating current ideas in the scientific community. (Support Graduation Requirements Indicator 10-3)	Demonstrates excellent understanding of vocabulary definitions and spelling, while managing to produce sound sentences. Shows excellent	Demonstrates great understanding of the vocabulary definitions and spelling, but are somewhat misplaced and not consistently structured in	Demonstrates basic understanding of vocabulary definitions, but fails to correctly link and/or spell them within sound sentences. Shows basic	Demonstrates insufficient understanding of the vocabulary definitions and sound application in sentences. Shows insufficient

	understanding and application of grammar concepts.	sound sentences. Shows great understanding of grammar concepts, but sentences lack full clarity and mastery of tenses.	understanding of grammar concepts, but fail to recognize and use proper tenses to form sound sentences.	understanding of past, present, and future tenses that conflict with unit goal expectations.