# HW0218 Communication Across the Sciences

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| Study year | : | CCEB Year 3 (CHEM, CHES, CHFS, CBC-ITG); SBS Year 2 (BS, BSB, BSPY); CCDS (formerly SCSE Year 2 (DSAI); SPMS Year 3 (MATH, MACS, MAEO, PHY, PHME, PHMS); SSM Year 2; SSS Year 2 (ECDS) |
| Academic units | : | 2 AUs |
| Pre-requisite | : | CC0001 Inquiry and Communication in an Interdisciplinary World, or<br>HW0128 Scientific Communication I, or<br>HW0111 Communication: A Journey of Inquiry through Writing and Speech |
| Tutorial hours | : | 24 (weekly tutorials of 2 hours) |

## CONTENT

The aim of the course is to enhance the abilities of science students to recognize and employ effective skills and strategies for written and oral communication in both academic and public settings. On the one hand, the emphasis of this course is on basic micro skills in scientific communication such as searching academic databases, critically reading scientific texts, citing from sources, composing scientific arguments, and making effective presentations. On the other hand, it introduces you to the conventions of scientific texts such as annotated bibliographies and proposals that require a combination of informative, evaluative, and persuasive writing skills. In addition, you will have an opportunity to share your ideas with your peers through group discussions, in-class presentations on current scientific topics and poster presentations of your proposals. Using a pre-determined set of evaluation criteria, you will give feedback to your peers on the course assignments, under the supervision of your tutors. The course will culminate with poster presentation sessions where you will present your proposals to your peers to simulate an authentic poster presentation at a conference/seminar. Through this course, it is hoped that you will become better communicators when conveying your scientific ideas in writing and speech to your peers and an educated audience.

## LEARNING OUTCOMES

Upon successful completion of the course, students should be able to:

1. Evaluate scientific texts;
2. Cite texts appropriately;
3. Write scientific texts such as annotated bibliographies and proposals; and
4. Present posters of your proposals to your peers.

## COURSE SCHEDULE

| Week | Tutorial topics | Reading/Activities |
|---|---|---|
| 1 | No tutorial | - |
| 2 | Writing for a specialist and general reader | Unit 1<br>1. Recognize major differences in expectations between specialist and general readers; |

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| Week | Tutorial topics | Reading/Activities |
|---|---|---|
| | | 2. Recognize key differences in language when writing for specialist and general readers;<br>3. Recognize important differences between speech and writing; and<br>4. Identify and apply in your writing an appropriate style of communication for different readers. |
| 3 | Reading scientific texts critically | Unit 2<br>1. Annotate a text effectively;<br>2. Apply appropriate strategies for identifying key ideas and arguments in a text;<br>3. Evaluate and respond to key ideas and arguments in a text; and<br>4. Examine the rhetorical context of a text. |
| 4 | Searching databases and writing from sources | Unit 3<br>1. Find and evaluate sources of information;<br>2. Avoid plagiarism in your writing;<br>3. Paraphrase, summarize and quote information appropriately in your academic texts;<br>4. Learn basic conventions of referencing in in-text citations and end-of-text references; and<br>5. Identify and analyze parts of an annotated bibliography. |
| 5 | Writing annotated bibliographies (Assignment 1) | Unit 3 and Assignment 1<br>1. Read the assignment article and summarize the main arguments proposed by the writer(s);<br>2. Evaluate some of the strengths and/or weaknesses of the article;<br>3. Conclude by indicating how the article has influenced your thinking on the topic;<br>4. Cite the article appropriately by providing the full bibliographic citation; and<br>5. Use appropriate language and style to summarize, evaluate and reflect on the article. |

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| Week | Tutorial topics | Reading/Activities |
|---|---|---|
| 6 | Peer review of Assignment 1 - Annotated bibliography | Unit 3 and Peer Review of Assignment 1<br>1. Provide feedback to your peer on the content and organization of the assignment;<br>2. Provide feedback to your peer on the language and style of the assignment; and<br>3. Provide overall comments on how your peer can improve the assignment. |
| 7 | Composing scientific arguments | Unit 4<br>1. Recognize the four key dimensions of effective scientific arguments, namely logos, ethos, pathos and kairos;<br>2. Empower yourself with the metalanguage used to identify parts of an argument;<br>3. Employ grounds/data and warrants effectively to support your claim and anticipate rebuttals;<br>4. Identify some common logical fallacies; and<br>5. Take a stand on a controversial scientific topic and present your arguments to the class. |
| 8 | Writing scientific proposals (Assignment 2) | Unit 5 and Assignment 2<br>1. Analyse the rhetorical structure and linguistic features of scientific proposals;<br>2. Brainstorm for your own proposal topic in the broad field of science;<br>3. Write a scientific proposal to convince readers that your topic is worth investigating; and<br>4. Use appropriate language and style to inform and persuade readers. |
| 9 | Peer review of Assignment 2 – Scientific proposal | Unit 5 and Peer Review of Assignment 2<br>1. Review your classmates' proposals using a set of evaluation criteria;<br>2. Comment on the rhetorical structure of the proposal;<br>3. Indicate whether the proposal idea has been conveyed convincingly in terms of language and style; and<br>4. Provide overall comments on how your peers can improve the proposal. |
| 10 | Presenting your proposals using posters (Assignment 3) | Unit 6 and Assignment 3<br>1. Determine the rhetorical context of the poster presentation; |

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| Week | Tutorial topics | Reading/Activities |
|---|---|---|
| | | 2. Create a poster using appropriate design principles, infographics, and engaging language;<br>3. Learn to pitch your presentation and responses appropriately at your audience; and<br>4. Practice effective strategies to engage your audience. |
| 11 | In-class poster presentations<br>(Assignment 3 – Poster presentation) | Unit 6<br>1. Present your proposal clearly and persuasively to your peers and tutor using a poster;<br>2. Learn to respond engagingly and succinctly to questions/comments from the audience;<br>3. Critique each other's poster presentations using the peer evaluation form; and<br>4. Vote for the best poster presentation in your class. |
| 12 | In-class poster presentations<br>(Assignment 3 – Poster presentation) | Unit 6<br>1. Present your proposal clearly and persuasively to your peers and tutor using a poster;<br>2. Learn to respond engagingly and succinctly to questions/comments from the audience;<br>3. Critique each other's poster presentations using the peer evaluation form; and<br>4. Vote for the best poster presentation in your class. |
| 13 | Feedback on assignments and course review | Units 1 to 6<br>1. Respond to your tutors' questions and feedback on your assignments; and<br>2. Review the course content and be prepared to ask questions and/or comment on the course content. |

## STUDENT ASSESSMENT

Students will be assessed by 100% continuous assessment. The assignments are designed to achieve the intended learning outcomes of the course.

| Assessment | Weighting |
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| **(A1) Annotated bibliography**<br>Students should demonstrate that they can write an annotated bibliography of a research article in the field of science by summarizing and evaluating it effectively. | **25%** |

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| Assessment | Weighting |
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| **(A2) Scientific proposal**<br>Students should demonstrate that they can write a persuasive proposal on a broad scientific topic of interest. | **35%** |
| **(A3) Poster presentation**<br>Students should demonstrate that they can deliver a persuasive poster presentation of their proposal to their peers. | **25%** |
| **Class participation**<br>Students should demonstrate that they can contribute meaningfully to class discussions and presentations. | **15%** |

## TEXTBOOKS/REFERENCES

Course book: *HW0218 Communication across the sciences: Student's course guide*. Singapore: NTU Language and Communication Centre.

Reference book: Penrose, A. M., & Katz, S. B. (2010). *Writing in the sciences: Exploring conventions of scientific discourse* (3rd ed.). New York: Longman.