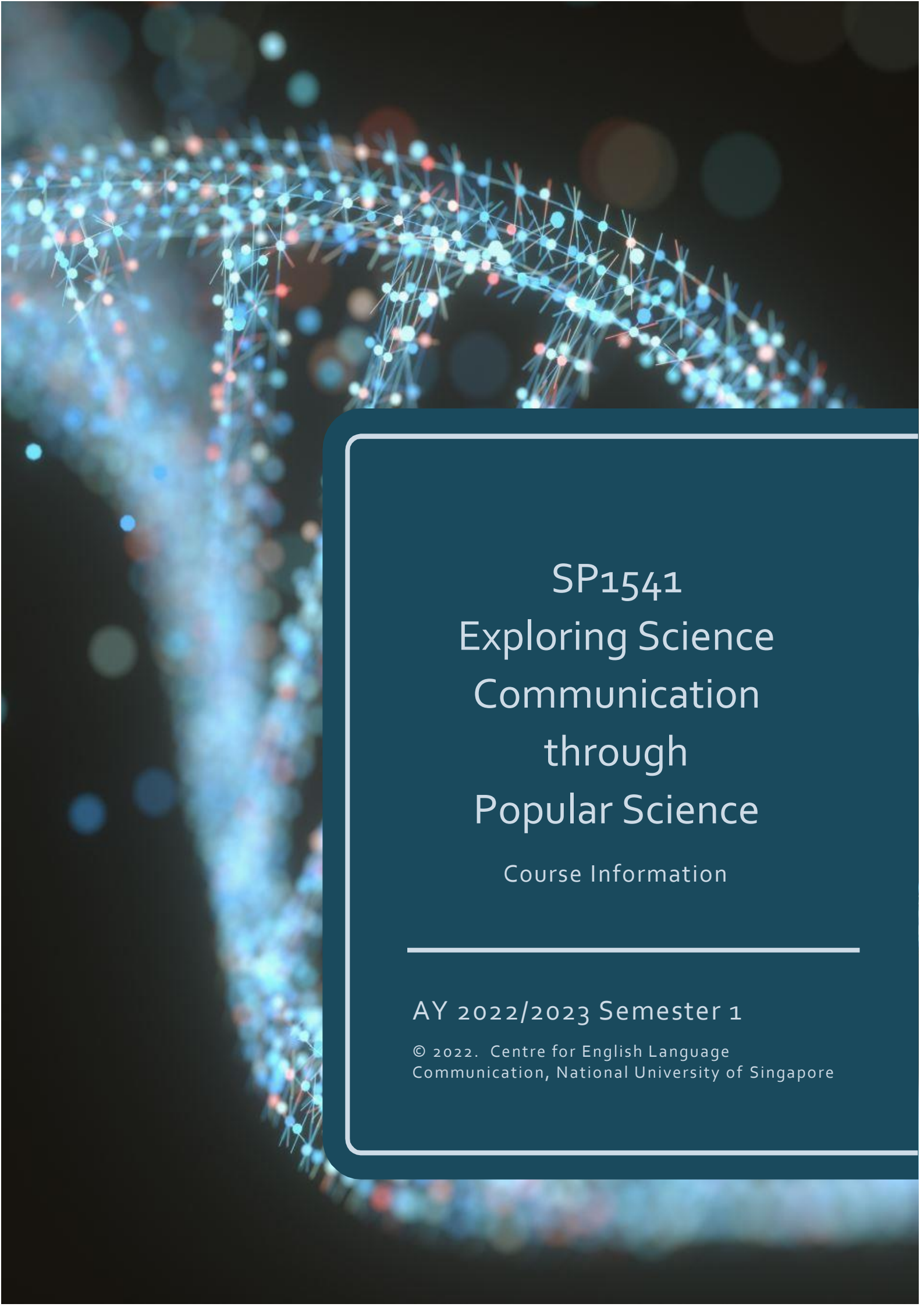

SP1541 Exploring Science Communication through Popular Science

Course Information

AY 2022/2023 Semester 1

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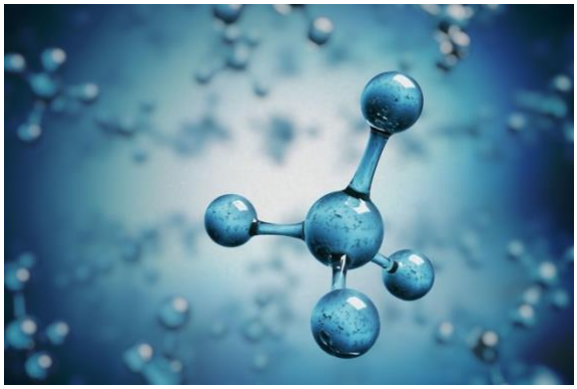
COURSE OVERVIEW

The spectrum of science communication ranges from communicating to highly technical audiences to the general public. While professional communication is used to share knowledge among scientists working in the same field, **degrees of popularization occur as soon as a scientist is communicating with non-specialists.** The range of registers and modes a scientist is expected to master is, therefore, varied. These modes include speaking to large audiences and writing not only for a scientific community, but also for a lay audience, the general public.

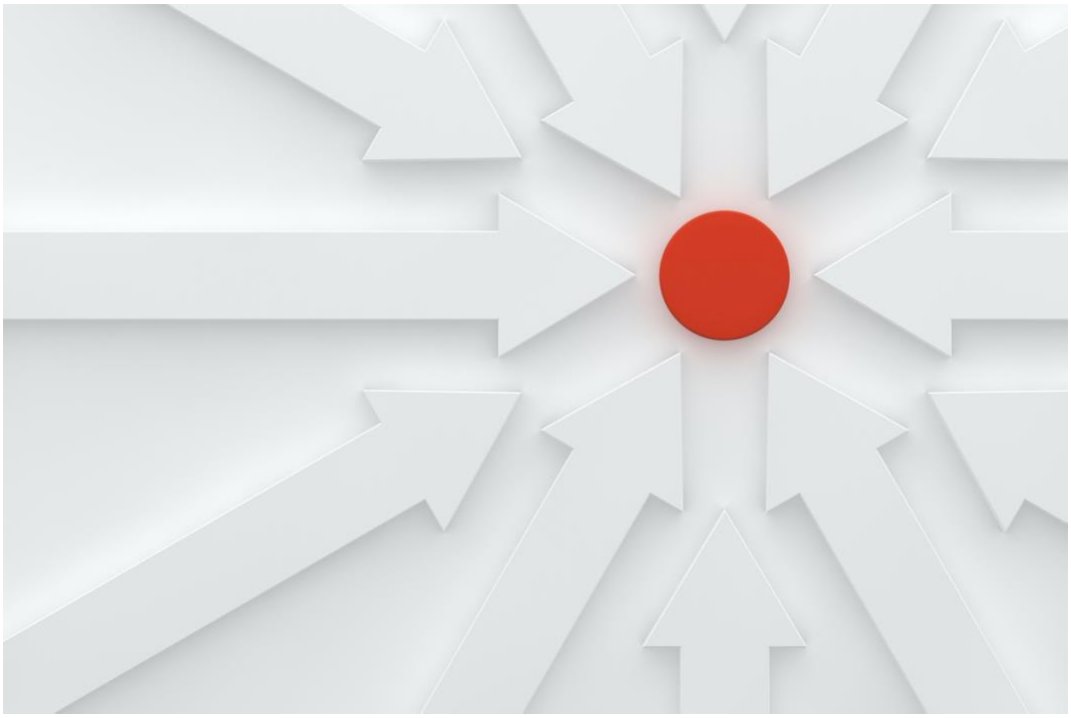
This module provides an opportunity for Science students to read popular science texts in five scientific disciplines and practice communicating to the public through discussions, presentations and writing of science news articles for a non-specialist audience. Most importantly, this module introduces other scientific disciplines other than your own and develop skills in re-contextualizing scientific concepts into popularized versions suitable for the public.

COURSE DESCRIPTION



The SP1541 module aims to equip students with **critical thinking, reading, and writing skills** that underlie effective communication of complex scientific content which is comprehensible and accessible to a non-specialist audience. The module focuses on **critical analysis and evaluation of science communication strategies** to develop and consolidate students' understanding of the differences between scientific academic texts such as research reports and popular science texts such as science news articles. Students will be exposed to popular science texts in various scientific disciplines, which will serve as the basis for group discussions, individual presentations, and the writing of science news articles targeted at an educated non-specialist audience.

COURSE OBJECTIVES



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

1. critically read, synthesise, and analyse features of popular science book chapters and articles;
2. communicate critical analysis and evaluation of the impact of science communication strategies on a non-specialist audience;
3. communication scientific concepts and ideas to non-specialists in the form of popular science news articles; and
4. present scientific concepts and ideas in a coherent and engaging manner to non-specialists.

LEARNING AND TEACHING MODE

This module is taught face-to-face over **12 weeks (Weeks 2** to 13). In addition to 4 tutorial hours per week, you are expected to spend **at least 3 hours for preparatory work**, and **3 hours for assignments and other forms of continuous assessment that contribute towards the final grade of the module.**

Microsoft Teams, a digital hub for teamwork in Office 365, will be used as an engagement tool in complement with Canvas. Students will be added to a class team and share their written responses using that platform.

Students are reminded to check their NUS email account regularly for updates from the course coordinator or their tutor as email is the primary source of communication. The tutor may communicate with students via MS Teams when necessary.

Although tutors may vary slightly in how they teach certain topics in the course based on their expertise, all tutors work towards accomplishing the same objectives for each tutorial and activity.

Adopting an **inquiry-based learning approach**, this module expects students to be actively involved in:

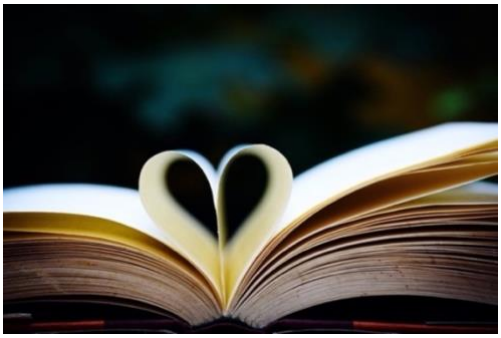
- **online learning:** study the materials (e.g. NUS Libraries online tutorials, book chapters, news articles and videos) and complete assigned tasks prior to class, and review post-lesson student notes after class; and
- **classroom learning:** exchange ideas, ask questions, and provide feedback during class, and collaborate with groupmates in completing discussion and reflective activities.

COURSE ATTENDANCE AND PARTICIPATION

Active participation and contribution to class discussions are essential to the *Interaction & Engagement* component.

Documentation to substantiate valid absences from class, such as a medical certificate or an official letter, should be presented to the tutor at the earliest opportunity. Otherwise, the tutor will assume absence without any valid reason.

CORE READING LIST



You should read the core texts provided and engage critically with each text by annotating it, writing comments, and providing responses to the tutorial questions.

Book chapters

Cobb, G. and Gehlbach, S. (2006). Statistics in the courtroom: United States vs. Kristen Gilbert. In R. Peck, G. Casella, G. Cobb, R. Hoerl, D. Nolan, R. Starbuck, and H. Stern (Eds.), *Statistics: A Guide to the Unknown* (4th ed., pp. 3–18). Thomson Brooks/Cole.

Dawkins, R. (2006). The replicators. In *The selfish gene* (30th anniversary ed., pp.12-20). Oxford University Press.

Du Sautoy, M. (2003). Who wants to be a millionaire? In *The music of the primes: Searching to solve the greatest mystery in mathematics* (pp. 1-18). HarperCollins.

Hawking, S. W. (2011). Our Picture of the Universe. In *A brief history of time: From the big bang to black holes* (pp.1-14). Bantam.

Le Couteur, P., & Burreson, J. (2003). Molecules of witchcraft. In *Napoleon's buttons: 17 molecules that changed history* (pp.223-245). Jeremy P. Tarcher/Putnam.

News Articles

Buchen, L. (2009, May 18). Cicadas primed for defense. *Wired*. http://www.wired.com/2009/05/primecicadas/

Butterworth, J. (2016, February 11). Gravitational waves: why it's impossible not to be thrilled by this discovery. *The Guardian.* https://www.theguardian.com/science/2016/feb/11/gravitational-waves-science-thrilled-by-discovery-ripples-in-space-time

Connor, S. (2013, November 7). The more we looked into the mystery of Crispr, the more interesting it seemed. *The Independent.* http://www.independent.co.uk/news/science/the-more-we-looked-into-the-mystery-of-crispr-the-more-interesting-it-seemed-8925328.html

Derouin, S. (2018, January 3). Satellites Predicts a Cholera Outbreak Weeks in Advance. *Scientific American*. https://www.scientificamerican.com/article/satellites-predict-a-cholera-outbreak-weeks-in-advance/

Nield, D. (2016, May 13). Your Hunger Hormones Can Affect the Way You Make Decisions. *ScienceAlert*. http://www.sciencealert.com/your-hungry-hormones-can-affect-the-way-you-make-decisions

ACADEMIC INTEGRITY

NUS students are expected and required to uphold academic integrity and always avoid plagiarism. Plagiarism is an academic offence that is taken very seriously by the University, as stated in the NUS Code of Student Conduct. To know more about plagiarism,

- watch the video "Avoiding Plagiarism & Academic Dishonesty at NUS" produced by NUS Libraries. https://www.youtube.com/watch?v=MFChbvsI3qw
- complete e-module SE1000 *Student Essentials* (LumiNUS > My Modules > Non-Academic Modules and click on the module title).

According to the NUS Plagiarism Policy, academic units will impose sanctions against students who plagiarise work at a 'minor', 'moderate', or 'serious' level.

Please visit the link to the latest NUS Plagiarism Policy:
https://myportal.nus.edu.sg/studentportal/student-discipline/all/docs/NUS-Plagiarism-Policy.pdf

You may also refer to the Student Portals for more information:
https://myportal.nus.edu.sg/studentportal/student-discipline/all/

All graded written assignments will be submitted electronically via Canvas to an **originality checking and plagiarism prevention system, *Turnitin*.** Students are required to **view the similarity report** which shows text matches with other sources and to identify where plagiarism may have occurred.

COURSE SCHEDULE

Week	Dates	Focus	Tutorial 1	Tutorial 2	Important dates
1	8 – 12 Aug		**No tutorials** • Course orientation • Drafting Pre-course News Article		
2	15 – 19 Aug	Building the context: Science communication	**Introduction to science communication** • Identifying the importance of science communication through popular science • Understanding the paradigms of science communication	**Critical reading and analysis: research articles** • Identifying selection criteria for research articles • Reflecting on the challenges of writing Pre-course News Article	Wed, 17 Aug, 23:59: **Submit Non-assessed Pre-course News Article**
3	22 – 26 Aug	Deconstruction of written science communication: Life Science	**Critical reading and analysis: Life Science book chapter** Dawkin (2006) – *The Selfish Gene* (Chapter 2) • Exploring ideas in popular science • Evaluating science communication strategies	**Critical reading and analysis: Life Science news article** Connor (2013) – *The more we looked into the mystery of Crispr, the more interesting it seemed* • Analysing communicative moves • Evaluating science communication strategies	
4	29 Aug – 2 Sep	Deconstruction of written science communication: Mathematics	**Critical reading and analysis: Mathematics book chapter** Du Sautoy (2003) – *The Music of the Primes* (Chapter 1) • Exploring ideas in popular science • Evaluating science communication strategies	**Critical reading and analysis: Mathematics news article** Buchen (2009) – *Cicadas primed for defense* • Analysing communicative moves • Evaluating science communication strategies	

Week	Dates	Focus	Tutorial 1	Tutorial 2	Important dates
5	5 – 9 Sep	Deconstruction of written science communication: Chemistry & Statistics	**Critical reading and analysis: Chemistry news article** Nield (2016) – *Your Hunger Hormones Can Affect the Way You Make Decisions* • Analysing communicative moves • Evaluating science communication strategies	**Critical reading and analysis: Statistics news article** Derouin (2018) – *Satellites Predicts a Cholera Outbreak Weeks in Advance* • Evaluating a news article using an assessment rubric	Sun, 11 Sep, 23:59: Submit Book Chapter Reflection
6	12 – 16 Sep	Joint construction of written & spoken science communication: Statistics	**Critical reading and analysis: Non-assessed peer review** • Conducting peer review (Revised Pre-course News Article)	**Constructing and presenting an infographic: Statistics book chapter** Cobb & Gehlbach (2006) – *Statistics: A Guide to the Unknown Part I* (p. 3-18) • Explaining statistical concepts to a non-specialist audience in a multimodal approach	Sun, 18 Sep, 23:59: Submit Revised Version of Pre-course News Article
READING WEEK (17 – 25 Sep)					
7	26 – 30 Sep	Deconstruction and joint construction of written science communication: Physics	**Critical reading and analysis: Physics book chapter** Hawking (2011) – *A Brief History of Time* (Chapter 1) • Exploring ideas in popular science • Evaluating science communication strategies	**Critical reading and analysis: Physics news article** Butterworth (2016) – *Gravitational waves: why it's impossible not to be thrilled by this discovery* • Identifying information gaps • Incorporating information from supplementary texts	Sun, 2 Oct, 23:59: Submit Science News Article (First Submission)

Week	Dates	Focus	Tutorial 1	Tutorial 2	Important dates
8	3 – 7 Oct	Deconstruction of spoken science communication: Life Science & Physics	**Critical analysis of Life Science talks: Accessibility and visual aids** • Analysing accessibility and visual aids in a research talk and a TED talk • Understanding effective use of visual aids using an assertion-evidence approach	**Critical analysis of Physics talks: Delivery and audience engagement** • Analysing delivery and audience engagement in TED talks • Evaluating a sample presentation	
9	10 – 14 Oct	Spoken science communication: Practice	**Mock presentation 1** • Delivering a popular science presentation (Pre-course News Article)	**Mock presentation 2** • Delivering a popular science presentation (Pre-course News Article)	
10	17 – 21 Oct	Written science communication: Feedback & reflection	**Individual conferencing 1** • Discussing revisions on Science News Article 1 (20 minutes per student)	**Individual conferencing 2*** • Discussing revisions on Science News Article 1 (20 minutes per student) *Make-up class for Friday 21 Oct classes (University holiday: NUS Well-being Day)	
11	24 – 28 Oct	Written science communication: Feedback & reflection	**Individual conferencing 3**** **Make-up class for Monday 24 Oct classes (Public holiday: Deepavali)	**Individual conferencing 4** • Discussing revisions on Science News Article 1 (20 minutes per student)	
12	31 Oct – 4 Nov	Spoken science communication: Assessment	**Critical reading and analysis: Assessed peer review** • Conducting peer review (Revised Science News Article)	**Assessed oral presentation 1** • Delivering a popular science presentation (Science News Article)	Wed, 2 Nov, 23:59: Submit Assessed Peer Review
13	7 – 11 Nov	Spoken science communication: Assessment	**Assessed oral presentation 2** • Delivering a popular science presentation (Revised Science News Article)	**Assessed oral presentation 3** • Delivering a popular science presentation (Revised Science News Article)	Sun, 13 Nov, 23:59: Submit Revised Science News Article & Reflective Commentary

PRE-COURSE WRITING TASK

TASK INSTRUCTIONS

Your pre-course writing task consists of: **Part 1 Pre-course News Article** and **Part 2 Self-reflection.**

During the first half of the semester, you will engage in peer review using the Pre-course News Article. You will then revise Part 1 Science News Article and complete Part 2 Post-review Reflection.

Part I: Science news article

One of the learning outcomes of this module is to disseminate scientific concepts and ideas to non-specialist readers in the form of a science news article.

To prepare yourself for the module, please write a science news article based on one of the five suggested research articles. This piece of writing will form the basis of your learning throughout the module. You will review and revise this article after you learn more about science communication strategies.

Select one of the following research articles as the source text for your news article. We recommend that you select the one from your own discipline.

Chemistry: Irajizad, P., Al-Bayati, A., Eslami, B., Shafquat, T., Nazari, M., Jafari, P., Kashyap, V., Masoudi, A., Arayaab, D. & Ghasemi, H. (2019). Stress-localized durable icephobic surfaces. *Materials Horizons*, 6, 758-766. https://pubs-rsc-org.libproxy1.nus.edu.sg/en/content/articlelanding/2019/MH/C8MH01291A - !divAbstract

Life Science: Cohen, J. E., Goldstone, A. B., Paulsen, M. J.,...Woo, Y. J. (2017). An Innovative Biologic System for Photon-Powered Myocardium in the Ischemic Heart. *Science Advances*, 3: e1603078. https://advances.sciencemag.org/content/3/6/e1603078

Mathematics: Saldana, J., Aguareles, M., Avinyo, A., Pellicer, M. & Ripoll, J. (2018). An Age-Structured Population Approach for the Mathematical Modeling of Urban Burglaries. *SIAM Journal on Applied Dynamical Systems*, *17*(4). https://epubs.siam.org/doi/pdf/10.1137/17M1142090

Statistics: Guan, L., Tian, X., Gombar, S., Zemek, A. J., Krishnan, G., Scott, R., Narasimhan, B., Tibshirani, R. J. & Pham, T. D. (2017). Big data modeling to predict platelet usage and minimize wastage in a tertiary care system. *Proceedings of the National Academy of Sciences*, 114(43), 11368-11373. https://www.pnas.org/content/114/43/11368

Physics: Mizuno, Y., Hayashi, N., Fukuda, H., Song, K. Y. & Nakamura, K. (2016). Ultrahigh-speed distributed Brillouin reflectometry. *Light: Science & Applications*, 5(12), e16184. https://www.nature.com/articles/lsa2016184.pdf

Please bear in mind these **3 points** when you write the science news article:

1) Context

Imagine that your science news article will appear in one of these places: the science section of a **daily newspaper** like *The Straits Times* (Singapore) and *The Guardian* (UK), or a **science news website** like *Science News*, *Science Daily*, and *LiveScience*.

2) Purpose

The purpose of your science news article is to **inform and engage the public of a new breakthrough/discovery/innovation/development in science**.

3) Audience

Your target audience are **educated, non-specialist readers.** They may have some basic science knowledge from their primary or secondary schools, but they may lack specialised knowledge to understand the new scientific development that you are reporting.

Since the target audience of your article is non-specialist readers, we recommend that you give the article to your non-scientist family or friends to read. It is important that you ask them these 4 questions after they have read your article. Their responses will be used during our first in-class tutorial session:

- If you saw the headline in a newspaper, would you feel interested in reading more? Why or why not?
- Circle any word, sentence or section that is unclear in the article.
- Can you tell why this discovery/innovation is significant?
- Did the article keep you interested all the way to the end? Why or why not?

Part II: Self-reflection

Please write a **100- to 150-word reflection** in which you reflect on the peer review experience and use the following three guidelines to help you write your reflection.

- **Describe the peer review experience** as a peer reviewer and/or feedback recipient;
- **Analyse and evaluate the peer review experience** in terms of feedback appreciation and uptake, and its impact on your awareness of science news writing; and
- **Describe your plans for future action** in terms of feedback quality and science communication awareness.

First Submission

Please use the submission template and submit **Part 1 Pre-course News Article** in no more than 800 words by **Wednesday, 17, August (11:59pm).** Name your file 'Name_Tut Group_Pre_course_writing_Submission1.docx'.

Second submission

Please use the submission template and **submit a revised version of Part 1 Pre-course News Article** in no more than 800 words and **Part 2 Self-reflection** by **Sunday, 16 September (11:59pm).** Name your file 'Name_Tut Group_Pre_course_writing_Submission2.docx'.

Tutors will provide constructive feedback on your revised version of the Pre-course News Article.

ASSESSMENT OVERVIEW

ASSESSMENT TASKS

SP1541 is a 100% continuous assessment module. The assessment tasks are as follows:

Mode	Assessment tasks	Submission/ assessment dates	Weighting	Intended learning outcomes to be assessed			
				1	2	3	4
Writing	Book Chapter Reflection	End of Week 5 Sun, 11 Sep, 23:59	5%	✓	✓		
	Science News Article: First Submission	End of Week 7 Sun, 2 Oct, 23:59	20%	✓	✓	✓	
	Peer Review of Science News Article	Week 12 Wed, 2 Nov, 23:59	5%	✓	✓		
	Science News Article: Second Submission	End of Week 13 Sun, 13 Nov, 23:59	30%	✓	✓	✓	
	Reflective Commentary	End of Week 13 Sun, 13 Nov, 23:59	10%		✓		
Speaking	Individual Oral Presentation	Week 12 Tutorial 2 & Week 13	25%				✓
Participation	Interaction and Engagement	Week 2-13	5%	✓	✓		
			100%				

All assignments are individually assessed. Each assignment has its own assessment criteria and students should familiarize themselves with the criteria before attempting the assignments.

PENALTY GUIDELINES FOR GRADED ASSIGNMENTS

The penalty policies for late submissions, and exceeding of word/time limits in graded assignments for CELC modules are as follows:

Written assignments

Late submissions	Penalty
• 15 minutes' grace due to technical issues. • If there is a problem with Canvas, students should take a screenshot of the error message.	Not applicable.
Up to 24 hours late.	10% of the maximum marks.
Beyond 24 hours late.	Not accepted or considered on a case-by-case basis for students with extenuating circumstances.

Exceeding of Word Limit	Penalty
Up to 10% above limit.	10% of the maximum marks.
Beyond 10% above limit.	Any text beyond 10% above limit will not be read. A penalty of 10% of the maximum marks will also be applied.

Oral Presentation

Exceeding of time limit	Penalty
Individual Oral Presentation	Stop at the time limit *1 minute's grace for online lessons due to possible lag in changing slides

GRADING AND PROVIDING FEEDBACK

Students' performance is assessed according to **criteria and standards** clearly stated in the assessment rubrics and explicitly communicated to students before assessment takes place. The **criterion-referenced rubrics** help students understand the requirements and expectations of each assessment task. The establishment of transparent criteria and standards not only contributes to improved validity and reliability of each assessment, but also enables formative feedback from teachers with respect to each criterion to enhance students' learning and future performance.

To assure **fairness and validity of grading**, all teachers involved in the assessment of students' performance have agreed on the criteria and standards and developed shared understanding of the grading scheme through rater training. To ensure grading consistency across classes, measures such as criterion-referenced grading, double-blind marking, and moderation through the application of a statistical model, Many-facet Rasch Model (MFRM), are implemented prior to the release of component results to students. The MFRM analysis allows comparison of rater severity and leniency and marks are systematically adjusted for rater effect.

ASSESSMENT: TASK INSTRUCTIONS

1. BOOK CHAPTER REFLECTION

You should produce a 200- to 250-word book chapter reflection on **either of the following book chapters**:

- Chemistry: *Napoleon's Buttons* (Chapter 12; p.223-245)
- Statistics: *Statistics: A Guide to the Unknown Part I* (p. 3-18)

Your reflection should address the following prompt:

- Identify **two strategies** used by the author which inform and/or engage educated non-specialist readers. These strategies should be the concepts introduced in the module.
- Provide one example from the text to explain clearly how each strategy is used.
- Explain why you think the strategies used were effective/ineffective in engaging educated non-specialist readers.

If the example(s) consist(s) of longer stretches of text (more than a word or short phrase), please specify the example and state the location of your example(s) using page numbers.

Submission

Please use the submission template and indicate the book chapter you have selected as instructed. The deadline for submission is **Sunday, 11 September, 2022 (11:59pm)**.

Assessment rubric

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Identification of strategies **(30%)**	Strategies are **not identified.**	Strategies are **incorrectly identified** due to inappropriate examples used.	**One of the strategies** is correctly **identified** with an appropriate example used.	Strategies are **correctly identified** with **appropriate** example(s) used.	Strategies are **correctly identified** with **appropriate and specific** example(s) used.
Evaluation of the strategies' effectiveness **(40%)**	Explanation provided for the strategies' effectiveness (non-effectiveness) is **vague** due to the lack of any association between the strategy and the meaning communicated by the author.	Explanation provided for the strategies' effectiveness (non-effectiveness) is **inadequate and unclear** due to unclear association between the strategy and the meaning communicated by the author.	Explanation provided for the strategies' effectiveness (non-effectiveness) is **adequate,** but there is a superficial understanding of the strategies used due to **minor misunderstanding** of the meaning communicated by the author.	Explanation provided for the strategies' effectiveness (non-effectiveness) is **adequate** and shows **general understanding** of the meaning communicated by the author.	Explanation provided for the strategies' effectiveness (non-effectiveness) is **adequate and specific** and shows **clear understanding** of the meaning communicated by the author.
Language accuracy **(30%)**	The writing has **frequent and consistent errors** in grammar, sentence structure and vocabulary that make the text incomprehensible.	The writing has **many errors** in grammar, sentence structure and vocabulary that affect comprehensibility in many parts of the text.	The writing has **some errors** in grammar, sentence structure and vocabulary but they rarely affect comprehensibility.	The writing has **very few errors** in grammar, sentence structure and vocabulary that do not affect comprehensibility.	The writing is **free from error** in grammar, sentence structure and vocabulary.

2. Science News Article

Science communication ranges from the intra-specialist level (e.g., papers published in specialized scientific journals) to the popular level (e.g., science news in the newspapers). Not only does success of a scientific claim go beyond publications in scientific journals or conference presentations, but it also involves the claim being reported in the media. Though research articles are more rigorous in disseminating a scientific claim, they are generally not comprehensible without scientific knowledge.

The public's understanding of science and their opinions can greatly affect policy decisions and influence scientific development. Therefore, it is most important that a scientist **makes scientific information more accessible to the wider non-scientific community**.

The purpose of this science news article assessment is to **engage and inform non-specialist readers of a new development, innovation or breakthrough in science**. A non-specialist reader or a lay person audience in our context refers to non-scientists who are educated and interested in science. However, they may not have the necessary scientific background knowledge to understand research articles, which are commonly communicated between scientists or specialists.

Task requirements

You are required to write **ONE science news article with TWO submissions** to report novel scientific developments, recent discoveries, or innovations based on a scientific research article. Please follow these requirements when selecting the research article:

- The article must be a **research article** with a clear key finding and a methodology section (Do not use a review article).

- The research article must be **obtained from a peer-reviewed journal** and it must be **recent (2017 or later**). Refer to the FAQ Section for more information on how to choose a peer-reviewed research article.

- The research article **should not be any of the five research articles provided to you for the completion of the Pre-course News Article**. The Pre-course News Article that you wrote should not be submitted as one of the assessed science news articles. If the original or revised version of the Pre-course News Article is submitted, it will not be graded.

A **10% penalty of the maximum marks** will be imposed when choosing:

- a **review article** instead of a research article with a clear key finding and a methodology section;
- a main research article **not from a peer-reviewed journal**;
- a main research article **published 2017 or before**; and
- a main research article **not from the students' own major disciplines** or **the same category** of their major disciplines**.**

Instructions for Science News Article (Submission 1)

Write a popular science news article based on **one research article** to engage and inform non-specialists of a recent scientific development. It should be **between 600 and 800 words.**

The research article must be from the students' own major disciplines or from the same category of their major disciplines. The disciplines are grouped according to the following categories:

Category A:	Life Sciences, Computational Biology
Category B:	Chemistry, Food Science and Technology, Pharmaceutical Science
Category C:	Physics, Mathematics, Statistics*, Quantitative Finance, Data Science

*Please note that a research article from the discipline of Psychology which uses statistical analysis as the main method is not considered as a research article from the discipline of Statistics.

The deadline is **Sunday 2 October 2022 (11:59pm).**

Instructions for Science News Article (Submission 2)

Revise the first submission of your science news article by integrating at least two supplementary sources. Supplementary sources can be recent research articles, statistical reports, or news articles. The revised version should be between **800 and 1,000 words.**

You are expected to **provide more evidence on how the scientific development reported in your science news article can impact the scientific field and society** (e.g. practical applications and implications of the key finding). Your evaluation of the key finding supported by evidence from supplementary sources and logical explanation will help readers appreciate the significance of the key finding associated with the scientific field and beyond.

The deadline is **Sunday 13 November 2022 (11:59pm).**

Submission format

- Please use the **submission template** and submit your graded written assignment via *Turnitin* for the **similarity check.**
- The **word limit** does not include the Headline, Lead, Author Name, and Date. However, do bear in mind that the Headline and Lead should be brief and effective in capturing and engaging readers' attention.
- All sources used in your written assignments should be acknowledged and the **full APA references** should be provided at the end of the article. News articles found to be close imitations of or have resemblance to online news articles (e.g. the news story unfolds exactly in the same manner) will be considered as **plagiarism**.

Assessment Rubric

Criteria		Definitions
Clarity	**Context of the study** **(20%)**	The context of the study helps readers understand **why this study is needed** (what is the gap?) or **what has led the researchers to conduct the study**. This context includes, but is not limited to, **the general background (Move 3)**, and **the rationale of the study (Move 4).** • The explanations of the context are **appropriately tailored** to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice.* • All ideas are **presented coherently and logically** which leads to an understanding of the objective(s) of the study. • The writing is fluent; the author shows **good control of language use**.
	The reported study **(30%)**	The reported study refers to information about the study that **supports the key finding introduced in Move 1**. The reported study includes but is not limited to **the methods and the results (Move 6)**, and **the explanation of the results (Move 7)**. • The explanations of the reported study are **appropriately tailored** to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice.* • All ideas are **presented coherently and logically** which support the key finding introduced in Move 1. • The writing is fluent; the author shows **good control of language use**.
Colour	**Significance of the key finding** **(25%)**	• The implication of the key finding and/or how the key finding advances the field is **specific** and **clearly linked to the context of the study**.* • The author's evaluation of the finding **supported by sufficient evidence or logical explanation** clearly helps readers appreciate the significance of the finding. • The author's appraisal of the significance of the key finding demonstrates **balanced views with effective use of evaluative language** for the context of evaluation.
	Reader engagement **(25%)**	• The **writing style (tone and register)** is **appropriate** for the popular science news genre.* • **Appeals are used successfully** to entice readers to read the news article. • A range of **language features** such as use of questions, pronouns, unexpectedness, and asides is used to **show dialogic involvement and immediacy with readers** throughout the article.

Note: The quality definition indicated with an asterisk (*) in each criterion receive the highest priority.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Context of the study (20%)	The explanations of the context are **not** tailored to the assumed knowledge base of potential readers; there is **no attempt** to use explanatory strategies, suitable and sufficient information, and appropriate word choice.*	The explanations of the context are **rarely** tailored to the assumed knowledge base of potential readers; there are **only few attempts** to use explanatory strategies, suitable and sufficient information, and appropriate word choice. **Both key and supplementary concepts** may be unclear/too difficult to non-specialist readers.*	The explanations of the context are **somewhat** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. The **key concepts** may be unclear/too difficult to non-specialist readers.*	The explanations of the context are **generally** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. But **some supplementary concepts** may be unclear/too difficult to non-specialist readers.*	• The explanations of the context are **appropriately** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. **Both key and supplementary concepts** are clear to non-specialist readers.*
	Ideas are not coherently and logically presented. Links between ideas are **not** established. Cohesive devices are **not** used, and **that greatly hinders the understanding of the context.**	**Most ideas** are **not** coherently and logically presented. Links between ideas are **not** explicit; **readers may need to constantly stop to establish links between ideas**. Cohesive devices may be used inappropriately **that greatly hinders understanding of the context.**	**For the most part,** ideas are presented coherently and logically which leads to an understanding of the objective of the study. Links between ideas are **somewhat** explicit, **but readers may need to stop occasionally (more than once or twice) to establish links between ideas**. A **very limited** range of cohesive devices is used.	**For the most part,** ideas are presented coherently and logically which leads to an understanding of the objective of the study. Links between ideas are **generally** explicit, **but readers may need to stop once or twice to establish links between ideas**. A **limited** range of cohesive devices is used.	**All** ideas are presented coherently and logically which leads to an understanding of the objective of the study. Links between ideas are **always** explicit and achieved through a range of cohesive devices (e.g. determiners, conjunctions, synonyms, repetition, transitional words).
	The writing is **not** fluent; the author shows a **great lack of** control of language use with **many** grammar/syntax errors; errors present a discernible pattern indicating a lack of understanding of usage and several errors **greatly** hinder meaning.	The writing is **not** fluent; the author shows a **lack of** control of language use with **many** grammar/syntax errors; errors present a discernible pattern indicating a lack of understanding of usage and several errors hinder meaning.	The writing is **somewhat** fluent; the author shows **some** control of language use with **some** sporadic grammar/syntax errors; errors present **no discernible pattern indicating a lack of understanding of usage** and errors **do not greatly** hinder meaning.	The writing is **generally** fluent; the author shows a control of language use with a few grammar/syntax errors occurring only as 'slips' and errors **slightly** hinder meaning.	The writing is fluent; the author shows **very good** control of language use with **few or no** sporadic grammar/syntax errors occurring only as 'slips' and errors do not hinder meaning.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
The reported study (30%)	The explanations of the reported study are **not** tailored to the assumed knowledge base of potential readers; there is **no attempt** to use explanatory strategies, suitable and sufficient information, and appropriate word choice.*	The explanations of the reported study are **rarely** tailored to the assumed knowledge base of potential readers; there are **only few attempts** to use explanatory strategies, suitable and sufficient information, and appropriate word choice. **Both key and supplementary concepts** may be unclear/too difficult to non-specialist readers.*	The explanations of the reported study are **somewhat** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. The **key concepts** may be unclear/too difficult to non-specialist readers.*	The explanations of the reported study are **generally** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. But **some supplementary concepts** may be unclear/too difficult to non-specialist readers.*	The explanations of the reported study are **appropriately** tailored to the assumed knowledge base of potential readers through use of explanatory strategies, suitable and sufficient information, and appropriate word choice. **Both key and supplementary concepts** are clear to non-specialist readers.*
	Ideas are not coherently and logically presented. Links between ideas are **not** established. Cohesive devices are **not** used and **that greatly hinders the understanding** of the reported study**.**	**Most ideas** are **not** coherently and logically presented. Links between ideas are **not** explicit; **readers may need to constantly stop to establish links between ideas**. Cohesive devices may be used inappropriately **that greatly hinders understanding** of the reported study**.**	**For the most part,** ideas are presented coherently and logically which supports the key finding introduced in Move 1. Links between ideas are **somewhat** explicit, **but readers may need to stop occasionally (more than once or twice) to establish links between ideas**. A **very limited** range of cohesive devices is used.	**For the most part,** ideas are presented coherently and logically which supports the key finding introduced in Move 1. Links between ideas are **generally** explicit, **but readers may need to stop once or twice to establish links between ideas**. A **limited** range of cohesive devices is used.	**All** ideas are presented coherently and logically which supports the key finding introduced in Move 1. Links between ideas are **always** explicit and achieved through a range of cohesive devices (e.g. determiners, conjunctions, synonyms, repetition, transitional words).
	The writing is **not** fluent; the author shows a **great lack of** control of language use with **many** grammar/syntax errors; errors present a discernible pattern indicating a lack of understanding of usage and several errors **greatly** hinder meaning.	The writing is **not** fluent; the author shows a **lack of** control of language use with **many** grammar/syntax errors; errors present a discernible pattern indicating a lack of understanding of usage and several errors hinder meaning.	The writing is **somewhat** fluent; the author shows **some** control of language use with **some** sporadic grammar/syntax errors; errors present **no discernible pattern indicating a lack of understanding of usage** and errors **do not greatly** hinder meaning.	The writing is **generally** fluent; the author shows a control of language use with a few grammar/syntax errors occurring only as 'slips' and errors **slightly** hinder meaning.	The writing is fluent; the author shows **very good** control of language use with **few or no** sporadic grammar/syntax errors occurring only as 'slips' and errors do not hinder meaning.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Significance of the key finding (25%) **Specific** = Specific to the reported study/key finding, not a sweeping statement	The implication of the key finding and/or how the reported study advances the field is **not explained** to readers.*	The implication of the key finding and/or how the reported study advances the field is **vague**, and **does not link** to the context of the study; **it remains unclear** how this study is 'significant' to the field and society.*	The implication of the key finding and/or how the reported study advances the field is **generic,** but it **somewhat links** to the context of the study. **Readers may question** how this study is 'significant' to the field and society.*	The implication of the key finding and/or how the reported study advances the field is **specific** and **generally links** to the context of the study. Readers **generally understand** why this study is 'significant' to the field and society.*	The implication of the key finding and/or how the reported study advances the field is **highly specific** and **clearly** links to the context of the study. **Readers clearly understand** why this study is 'significant' to **the field and multiple stakeholders**. *
Balanced views = not over promising or too good to be true	The author **does not evaluate the key finding.**	The author evaluates the key finding **inappropriately.**	The author **attempts** to evaluate the finding, **but the evaluation remains superficial.**	The author evaluates the finding **appropriately** by providing **some evidence and/or explanation.**	The author evaluates the finding **effectively** by providing **sufficient evidence and logical explanation.**
	The significance of the key finding is **not appraised.**	The significance of the key finding is **inappropriately appraised** and **evaluative language was unused** most of the time.	The significance of the key finding is **somewhat appraised with imbalanced views and inappropriate use of evaluative language** due to minor misunderstanding of the context of evaluation**.**	The significance of the finding is **generally appraised with balanced views** and **some appropriate use of evaluative language** for the context of evaluation.	The significance of the finding is **appropriately appraised with balanced views** and **effective use of evaluative language** for the context of evaluation.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Reader engagement **(25%)**	The writing style/tone/register (including citation) is **not appropriate** to the popular science news genre. *	The writing style/tone/register (including citation) is **mostly inappropriate** to the popular science news genre with **most parts** employing an academic style of writing.*	The writing style/tone/register (including citation) is **somewhat appropriate** to the popular science news genre with **some parts** employing an academic style of writing. *	The writing style/tone/register (including citation) is **mostly appropriate** to the popular science news genre with **only a few parts** employing an academic style of writing.*	The writing style/tone/register (including citation) is **always appropriate** to the popular science news genre. *
	The author **does not use** appeals to entice the readers to read the article.	The author rarely employs appeals and **is not successful** in enticing readers to read the article.	The author **rarely** employs appeals and/or may **not always** be successful in enticing readers to read the article.	The author employs appeals, but may **not always be successful** in enticing readers to read the article.	The author **successfully** employs appeals to entice readers to read the article.
	The author **does not** show any dialogic involvement and immediacy with readers.	The author **rarely** shows dialogic involvement and immediacy with readers; use of language features such as use of questions, pronouns, unexpectedness, and asides **is limited.**	The author **somewhat** shows dialogic involvement and immediacy with readers **in some parts** through some language features such as use of questions, pronouns, unexpectedness, and asides.	**For the most part,** the author **generally** shows dialogic involvement, and immediacy with readers through **a range of** language features such as use of questions, pronouns, unexpectedness, and asides.	The author **consistently** shows dialogic involvement and immediacy with readers through **a wide range of** language features such as use of questions, pronouns, unexpectedness, and asides.

Frequently Asked Questions

About Research Articles

1. How soon should I start looking for a research article?

You should start this process as soon as possible. Many students realise that looking for an appropriate article can take a fair amount of time. This is because you want to make sure of several things:

- The suitability of the topic for a non-specialist audience
  - Will the audience be interested in the topic?
  - Can I write about it in the form of a science news article that would be interesting and engaging for the non-expert audience?
- Your knowledge of the topic
  - Do I know enough about the topic to explain its concepts, methods, results, and conclusions in a way that is meaningful for the non-expert audience?
- Access to the paper
  - Can I get a copy of the paper through NUS Libraries or online? (You should not pay for papers as NUS Libraries has an expansive collection of journals and you can find some papers online for free)
- Quality of the paper
  - Is it peer-reviewed?
  - Is the journal the paper comes from a reputable source?

Watch the NUS Libraries' online tutorial videos for SP1541to learn about how to:

- identify appropriate database(s) based on your chosen topic;
- search research papers and news articles using databases; and
- evaluate retrieved works using the ART evaluation criteria.

If you have any tutorial-related questions, please contact our librarians, Ms. Mak Jie Ying (slbmjy@nus.edu.sg) or Ms. Stephanie Ng (slbngs@nus.edu.sg). You can also request for a personalized consultation with them by contacting Science Library at sclib@nus.edu.sg. They would be more than happy to help.

2. Where can I find a research article?

Follow the steps given in the NUS Libraries' online tutorial videos (Tutorials 4a Effective Use of Database – Find More and Tutorial 4b Effective Use of Database – Web of Science).

3. Does 2017 and beyond refer to the year of publication or the year the study was conducted?

It refers to the year of publication regardless of the year the study was conducted.

About Peer Reviewed Journals

1. What is a peer reviewed journal?

A peer reviewed journal includes articles that have been examined by people with credentials in the field of study before they are published. The peer-review status of a journal is an indication of its standards and signifies overall quality of the research presented and the completeness of cited references.

Look at the journal information ('About this journal' or 'Notes for Authors') to check if a journal is peer reviewed.

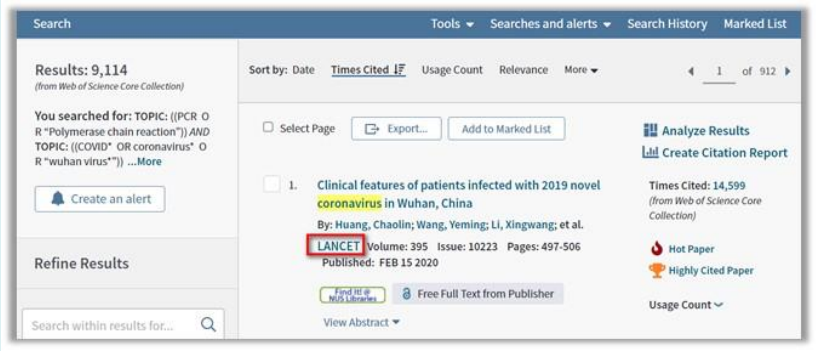
2. How can I find a peer-reviewed research article using FindMore?

Refer to the NUS Libraries' online tutorial video (Tutorial 4a) for a demonstration.

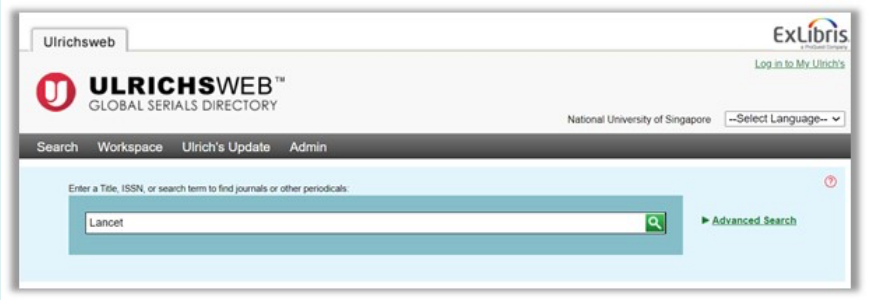
3. How can I find a peer-reviewed article using Web of Science?

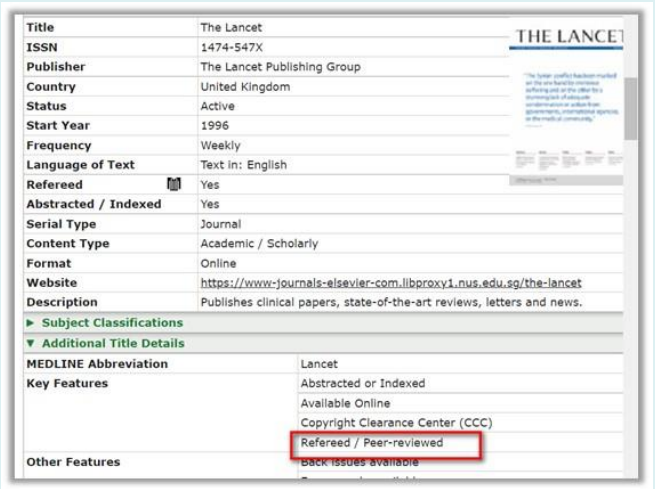
You can perform a search using Web of Science as demonstrated in the online tutorial video on Web of Science (Tutorial 4b).

Web of Science is a curated collection of over 21,000 peer-reviewed scholarly journals. While most of the journals in Web of Science Core Collection are peer reviewed, Clarivate Analytics does not provide a list of journals that have peer review status. You will need to verify the peer review status after identifying an article. For example, you can check the journal information by clicking on the journal title 'Lancet'.



Alternatively, you can use UlrichsWeb database to check if a journal is peer-reviewed.





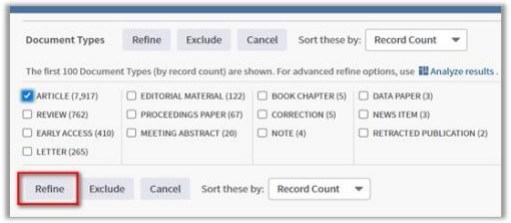
About Review Articles

1. What is the difference between a research article and a review article?

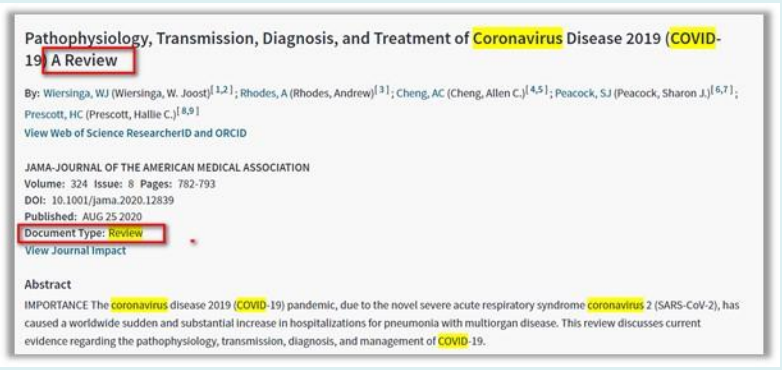
While a research article reports the methods and results of an original study conducted by the authors, a review article gives an overview of a specific topic through examination of the existing literature, identifies patterns among published research studies, and suggests new research directions. You may refer to the following link for some examples:
https://www.concordia.ca/library/guides/exercise-science/review-vs-research.html

2. How can I tell if an article is not a review paper?

As shown in the NUS Libraries' online tutorial video on Web of Science, you can refine by the document type 'Article' to retrieve research articles.



If it is a Scientific review paper, Web of Science will indicate the document type "Review". Some of them include "A Review" in title of the paper.



About Writing Science News Articles

1. I noticed that the sample news articles contain many direct quotes from the researchers who conducted the research. Do I need to do this for the news article assignments?

   You are not required to interview scientists or researchers about their discoveries. However, if you find a quote from an interview, a science talk (e.g., TED video) or another popularised article and would like to include them, you can do so. Please include the source of that information in the reference section.

2. What is the APA citation style? Do I need to use the APA citation style for in-text citations? Are the references in the APA citation style included in the word count?

   You can learn about the APA citation style from the NUS Libraries' online tutorial video (Tutorial 7 Citation Systems and Styles). You do not need to use the APA citation style for in-text citations when writing your science news article. References are **not included** in the word count.

3. If I have already included the journal reference at the end of the news article, do I still have to include Move 5?

   Yes. Move 5 provides information about the researchers, their institutions, or the journal that the research article was published. It adds not only credibility, but also the 'story' (who does what) to your news article.

4. Do I need to include images to engage readers?

   Images are not required in the news article to avoid copyright infringement.

3. Reflective Commentary

You should write a **300- to 350-word reflective commentary** accompanying the revised version of science news article that explains the salient choices made in terms of the application of science communication strategies. Please use the following prompt when writing the reflective commentary:

- Identify **two of the salient choices you made in your science news article in terms of science communication strategies** to inform and/or engage educated non-specialist readers. These strategies should be the concepts introduced in the module.
- Describe the goals that you are trying to achieve. Provide one example to explain how the use of a strategy helps achieves a particular goal.
- Evaluate the effectiveness of those strategies in achieving your goals.

If the example(s) consist(s) of longer stretches of text (more than a word or short phrase), please specify the example and state the location of your example(s) using section numbers.

Submission

Please place your reflective commentary at the end of your news article after your reference list. The deadline is **Sunday, 13 November 2022 (11:59pm).**

Assessment rubric

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Identification of salient choices **(20%)**	The writer only describes what choices they made **without making any connection to science communication strategies** introduced in the module.	The writer describes what choices they made, but **both strategies** are **incorrectly identified.**	Salient choices are identified, but **only one of the strategies** is correctly identified.	Salient choices are identified and strategies are **correctly identified with appropriate examples** used.	Salient choices are identified and strategies are **correctly identified with appropriate and specific examples used**.
Evaluation of strategies' effectiveness **(50%)**	Explanation provided for the strategies' effectiveness is **vague** due to the lack of any association between the strategies and intended goals.	Explanation provided for the strategies' effectiveness is **inadequate and/or inappropriate** due to unclear association between the strategies and intended goals.	Explanation provided for the strategies' effectiveness is **rather generic** and shows only **superficial understanding** of the association between the strategies and intended goals.	Explanation provided for the strategies' effectiveness is **adequate** and shows **general understanding** of the association between the strategies and intended goals.	Explanation provided for the strategies' effectiveness is **adequate and specific** and shows **clear understanding** of the association between the strategies and intended goals indicated by the **clear analysis on how a choice(s) may be challenged.**
Language accuracy **(30%)**	The writing has **frequent and consistent errors** in grammar, sentence structure and vocabulary that make the text incomprehensible.	The writing has **many errors** in grammar, sentence structure and vocabulary that affect comprehensibility in many parts of the text.	The writing has **some errors** in grammar, sentence structure and vocabulary, but they rarely affect comprehensibility.	The writing has **very few errors** in grammar, sentence structure and vocabulary that do not affect comprehensibility.	The writing is **free from error** in grammar, vocabulary and sentence structure and demonstrate effective use of language.

4. Individual Oral Presentation

You are expected to **engage and inform an educated, non-specialist audience of a new development/ breakthrough in science** in a spoken mode of communication with the use of visual aids.

Task requirements

You have **8 to 10 minutes** to deliver your presentation based on the **main research article you selected for your Science News Article**. You will participate in a **3-minute question-and-answer (Q & A) session** during which you will respond to your classmates' questions.

The assessed oral presentations are scheduled in the second tutorial of Week 12 and the two tutorials of Week 13. The order of presentations will follow the order of the individual conferencing sessions. Your tutor will announce the order in Week 10.

As a presenter	As a participant
Your presentation will be assessed according to four assessment criteria (See Assessment Rubric).	You will attend all the three assessed oral presentation sessions and demonstrate your ability to ask relevant, meaningful questions and provide constructive feedback.

To ensure fairness in assessment, assessed oral presentations will be recorded, and randomly selected for double-blind marking. Marks will be moderated and adjusted for rater severity and leniency using the MFRM.

Assessment rubric

Assessment Criteria		Definitions
Clarity	Accessibility (30%)	• **Explanations of the scientific concepts and processes** are **appropriate** for oral communication.* • **Visual aids** (both graphic and language-based) are used tactically to explain the scientific concepts and processes. • The presenter uses **clear choice of language** that is highly appropriate for the audience. • **Explanations** are **scaffolded** to achieve a logical development of successively more complicated ideas.
	Organization of ideas (20%)	• The presentation has a **coherent structure** and flows conceptually from the context of the study to the reported study and the conclusion (key finding). The presenter demonstrates a **good balance between various parts of the presentation**.* • **Clear connections** are made between various parts of the presentation. • The presenter **does not present irrelevant or superfluous concepts**.
Colour	Significance of the key finding (20%)	• The **implication of the key finding to the field and society** is **explicitly stated at the beginning** of the presentation and **adequately explained during the presentation**. The presenter augments the presentation with **examples of real-life application or implication for the field and multiple stakeholders.*** • The **rationale of the study** is clearly stated (the background to the problem is clearly stated along with present solutions and their limitations). • The **significance of the key finding** is **appropriately appraised**.
	Delivery and audience engagement (30%)	• The presenter demonstrates the ability to communicate in a **spontaneous, unrehearsed manner**. * • **Vocal elements of delivery** (e.g. pace, pitch, pronunciation and volume) are used effectively to enhance communication of the overall message. • **Non-verbal elements of delivery** (e.g. eye contact, gesture, posture and facial expression) are used strategically to demonstrate the presenter's confidence and passion for the topic. • The presenter **refers to the visuals consistently, and directs the audience's focus strategically**.

Note: The quality definition indicated with an asterisk (*) in each criterion receive the highest priority.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Accessibility (20%)	Explanations of scientific concepts and processes are **ambiguous and confusing for the audience.***	Explanations of scientific concepts and processes are **highly technical due to limited use of explanatory strategies;** this **hinders the audience's understanding** of scientific concept(s) central to the study and the key finding of the study**.***	Explanations of scientific concepts and processes are **slightly technical with some appropriate use of explanatory strategies;** this **somewhat hinders the audience's understanding** of scientific concept(s) central to the study and the key finding of the study**.***	Explanations of scientific concepts and processes are **generally clear** with a range of **appropriate explanatory strategies** to develop the audience's understanding of scientific concept(s) central to the study and the key finding of the study.*	Explanations of scientific concepts and processes are **clear** with a **wide range of appropriate strategies** to develop the audience's understanding of scientific concept(s) central to the study and the key finding of the study; **explanations are scaffolded to achieve a logical development of successively more complicated ideas***.
	Visuals **distract** audience from the presentation, and may even **cause confusion**.	**Language-based** visuals are mainly used; they are **ineffective** in explaining scientific concepts and processes, and **contribute little to the audience's understanding of the content.**	The use of graphic and language-based visuals is **somewhat effective** in explaining scientific concepts and processes, and generally helps the audience understand the content **despite a few significant lapses**.	The use of graphic and language-based visuals is **mostly effective** in explaining scientific concepts and processes, and **enhances the audience's understanding of the content most of the time**.	The use of graphic and language-based visuals is **effective** in explaining scientific concepts and processes, and **enhances the audience's understanding consistently**; **clear, powerful visuals create strong impressions to the audience.**
	Language chosen is **inappropriate** for the audience.	Language chosen is **inconsistent** for the audience; vacillating between technical language and everyday language causes confusion; jargon and technical terms are not defined/explained.	Language chosen is often used at the appropriate level of understanding with **some use of overly technical language**; some jargon and technical terms are not defined/explained.	Language is used at the appropriate level of understanding for the audience **most of the time**; most of jargon and technical terms are defined/explained.	Language is used at the appropriate level of understanding for the audience **consistently;** jargon and technical terms are clearly defined/explained.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Organization of Ideas (20%)	There is **an illogical flow of information.***	An explicit structure of the presentation is established without being **followed consistently**; the **flow is frequently interrupted** by asides and misplaced examples.*	An explicit structure of the presentation is established, but the **flow is occasionally interrupted** by **asides** and **misplaced examples.***	An explicit structure of the presentation is **established**; the flow is **mostly logical** from simple to the more complex ideas, from familiar to unfamiliar concepts.*	An explicit structure of the presented is **clearly established**; the flow is **logical** from simple to the more complex ideas, from familiar to unfamiliar concepts.*
	I**nformation is presented like a checklist without any link between sections**; signposting is not used.	The connections between various parts of the presentation are **unclear**; signposting is **inappropriately used or overused and may impede understanding**.	The connections between various parts of the presentation are **generally clear with a few lapses;** signposting is **used inappropriately or overused at times**, but **do not impede understanding**.	The connections between various parts of the presentation are **mostly clear**; signposting is **appropriately used** to ensure that connections are made explicit.	The connections between various parts of the presentations are **clear**; signposting is **appropriately used and varied** to make connections explicit.
	The presenter presents **irrelevant concepts** which **clearly distract or confuse the audience**.	The presenter presents **superfluous concepts** which **distract or confuse the audience at times**.	The presenter presents **a few superfluous concepts** that are not essential to the understanding of the study, but they **do not distract or confuse the audience.**	The presenter presents **relevant concepts.**	The presenter presents **relevant concepts** and demonstrates a **good balance** between various parts of the presentation (i.e., introduction, explanation of scientific concepts, rationale of the study, explanation of the key finding and appraisal of significance of the key finding).

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Significance of the key finding (20%) **Balanced views** = not over promising or too good to be true	The implication of the key finding to the field and society is **not stated**.*	The implication of the key finding to the field and society is **somewhat stated at the beginning of the talk and remains unclear throughout the presentation**. *	The implication of the key finding to the field and society is **explicitly stated at the beginning of the presentation and somewhat explained during the presentation.***	The implication of the key finding to the field and society is **explicitly stated** at the beginning of the presentation and **generally explained during the presentation**.*	The implication of the key finding to the field and society is **explicitly stated** at the beginning of the presentation and **adequately explained during the presentation;** the presenter augments the presentation with **examples of real-life application or implication for the field and multiple stakeholders**.
	The rationale of the study is **not stated.**	The rationale of the study is **stated; it remains unclear** why the researchers needed to conduct this study.	The rationale of the study is **explicitly stated and somewhat elaborated on**; the audience **may not understand the need** to conduct the study.	The rationale of the study is **explicitly stated and generally elaborated on** to **highlight the need** to conduct the study.	The rationale of the study is **explicitly stated and clearly elaborated on** to **highlight the need** to conduct the study and how the **new finding** will **address** the **gap** in the literature.
	The significance of the key finding is **not appraised.**	The significance of the key finding is **inappropriately appraised; the audience fails to** appreciate the significance of the finding.	The significance of the key finding is **somewhat appraised with imbalanced views; the audience may question the significance of the finding.**	The significance of the key finding is **generally appraised with balanced views supported by some evidence and/or explanation** to help the audience to appreciate the significance of the finding.	The significance of the key finding is **appropriately appraised with balanced views supported by sufficient evidence and/or logical explanation** to help the audience to appreciate the significance of the finding effectively.

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Delivery and audience engagement **(40%)**	The presenter presents **memorised content** and shows **no audience engagement.***	The presenter reads off the slides **frequently,** and shows **little intention of engaging the audience** in terms of spontaneity and naturalness (unrehearsed manner).*	The presenter **sometimes** reads off the slides, but shows **some independence from the slides to engage the audience** in terms of spontaneity and naturalness (unrehearsed manner).*	The presenter **rarely** reads off the slides, and shows **independence from the slides most of the time to engage the audience** in terms of spontaneity and naturalness (unrehearsed manner).*	The presenter **does not** read off the slides, and **shows full independence from the slides to engage the audience** in terms of spontaneity and naturalness (unrehearsed manner).*
	Verbal elements of delivery **hinder communication.**	Verbal elements of delivery are **rarely used** to enhance communication of the overall message, and the **presenter sounds mostly unnatural** with **many awkward pauses, or unnatural emphasis.**	Verbal elements of delivery are **occasionally used** to enhance communication of the overall message; the **presenter sounds quite natural** with **some awkward pauses, or unnatural emphasis.**	**For the most part,** verbal elements of delivery are **used appropriately** to enhance communication of the overall message; the **presenter sounds natural** with **very few awkward pauses, or unnatural emphasis.**	Verbal elements of delivery are **used effectively** to enhance communication of the overall message; the **presenter sounds natural** without any awkward pauses or unnatural emphasis.
	Non-verbal elements of delivery are **distracting** and do not show the presenter's confidence and passion for the topic.	Non-verbal elements of delivery are **rarely used** to show the presenter's confidence and passion for the topic; **the presenter appears nervous and uninterested.**	Non-verbal elements of delivery are **occasionally used** to show the presenter's confidence and passion for the topic; the presenter appears **confident at times** with **some instances of nervousness**.	**For the most part,** non-verbal elements are **used appropriately** to show the presenter's confidence and passion for the topic; the presenter appears confident with **very few instances of nervousness**.	Non-verbal elements of delivery are **used strategically** to show the presenter's confidence and passion for the topic; the presenter looks **confident and at ease.**
	Visual aids **do not complement the presentation;** the presenter **does not refer to the visuals**.	Visual aids are **often not kept in sync** with the presentation; the presenter **rarely refers to the visuals** to capture the audience's attention.	Visual aids are **sometimes kept in sync** with the presentation; the presenter **occasionally refers to the visuals** to capture the audience's attention.	Visual aids **complement** the presentation **most of the time**; the presenter **mostly refers to the visuals** to capture the audience's attention.	Visual aids **consistently complement** the presentation; the presenter **refers to the visuals consistently,** and **directs the audience's focus strategically.**

5. Peer Review of Science News Article

You will participate in a **peer review session** on the revised Science News Article in Week 12 Tutorial 1. You are expected to demonstrate a good balance of comments (weaknesses and strengths) which are justified by textual examples, and provide specific and constructive suggestions for revision purposes.

Inadequate	Developing	Satisfactory	Competent	Advanced
Review is overly general and not useful.	Review is **somewhat general and not quite useful.**	Review is **somewhat useful**.	Review is **useful.**	Review is **very useful.**
Shows a significantly unfair balance of comments (weaknesses and strengths) which are **vague in nature.**	Shows **an unfair balance of comments** (weaknesses and strengths) **without textual examples**, and offers some **general comments** that are not useful for revision purposes.	Shows **some balance of comments** (weaknesses and strengths) which are justified by **a few specific textual examples, and provides some general suggestions** for revision purposes.	Shows a **good balance of comments** (weaknesses and strengths) which are justified by **many specific textual examples, and provides some specific and constructive suggestions** for revision purposes.	Shows a **good balance of comments** (weaknesses and strengths) which are **fully justified by textual examples**, and provides **many specific and constructive suggestions** for revision purposes.

6. Interaction and Engagement

The Interaction and Engagement component consists of:

1) Group Discussions

You are expected to participate in and contribute to the exchange of ideas actively during tutorials.

2) Question-and-answer Sessions

You are expected to ask meaningful questions, and provide specific and constructive feedback during the two Mock Presentation sessions and the three Assessed Oral Presentation sessions.

Assessment rubric

Criteria	Inadequate	Developing	Satisfactory	Competent	Advanced
Group Discussions (Meaningful contributions are **critical thoughts about the topic discussed supported by evidence from the course materials.**)	Contributes to group discussions and clarifies/elaborates on others' comments **only when prompted.**	Initiates meaningful contributions and clarifies/elaborates on others' comments **occasionally.**	Initiates meaningful contributions and clarifies/elaborates on others' comments **in some group discussions.**	Initiates meaningful contributions and clarifies/elaborates on others' comments in **many group discussions.**	Initiates meaningful contributions and clarifies/elaborates on others' comments in **every group discussion.** **Offers insightful ideas by going beyond what is covered in the course materials.**
Question-and-answer Sessions (Meaningful questions are to **stimulate critical thinking related to the presentation topic** rather than eliciting facts already presented.	Fails to ask questions; fails to provide feedback.	Asks **questions to elicit facts already presented**. Provides feedback **occasionally.** Feedback is **too general.**	Asks **questions, but only a few** to encourage presenters to think more critically. Provides feedback **in some instances.** Feedback is **somewhat specific and constructive.**	Asks **several meaningful questions** to encourage presenters to think more critically. Provides feedback **in quite a few instances.** Feedback is **generally specific and constructive.**	Asks **many meaningful questions** to encourage presenters to think more critically. Provides feedback **in many instances.** Feedback is **always specific, constructive, and insightful.**

Images from Microsoft Word 2022