

## SP3172 Congress presentation

The presentation will be graded by 3 Congress grader (Graduate mentors) and the laboratory supervisor.

### Format

- **Uploading of Presentation:** All presentation materials are to be uploaded into LumiNUS folder by **2359hr, 15th Nov 2019**. Any submission beyond the deadline will be subjected to a grade penalty. This is to be fair to students who are presenting earlier and also to smoothen the transition from one group to another.
- **File Format:** Students may use PowerPoint or any reasonable form of presentation software. If students require the use of specialised visualisation software to display their research data, please check if the appropriate software has been installed on the seminar room computer. If not, please contact the SPS system administrator for assistance at least one week before the congress.

### Rubrics

	Exemplary	Accomplished	Developing	Beginner or incomplete
<b>Critical thinking</b> Was the data presented scientifically logical and critically analyzed?	Thoughtfully and accurately interprets results, shows an in-depth understanding of major ideas  Link their analysis to other work in the literature and address their research question. Suggest well thought-out follow up experiments	Identifies relevant arguments, justifies results, offers reasons  Use the literature well to support their discussion. Suggest reasonable follow up experiments.	Usually justifies results and offers minimal reasons.  Suggest some follow up experiment	Misinterprets data, gives unjustified arguments  Unable to link the literature with the data obtained or their original research question. No follow up experiment discussed.
<b>Quality and amount of information</b>	Covers topic thoroughly, includes the right amount of relevant details that support the topic.  Tools and models used were very appropriate and properly used to develop the project.	Includes essential information, includes some relevant supporting details.  Most tools used were appropriate and connected	Includes the most essential information, details are somewhat sketchy.  Some tools used were appropriate and connected.	Lacks essential information or too many details.  Tools used were not connected with the project.
<b>Scientific thoughts or goals</b>	Show obvious grasp of the scientific concept, the application is very clear and sound.  The methodology is complete, appropriate and logical.	Show a good grasp of the scientific concepts, the application is sound.  The methodology is mostly complete, appropriate and logical.	Show somewhat weak grasp of the scientific concepts, the application is not as sound.  The methodology is somewhat lacking in scope or rigour.	Show weak grasp of the scientific concept, the application is flawed  The methodology is insufficient or inappropriate.

<b>Oral presentation</b> Did the presenter speak clearly? Did they engage the audience?	Well prepared, speaks clearly, makes eye contact with the audience, delivers with ease, invites questions.	Engages the audience, fluid delivery, uses a different approach other than simply reading the screen or script, invites questions.	Clear and understandable, uses limited delivery techniques.	Not clear, not understandable. Reading from the script.
<b>Use language that is appropriate for the target audience?</b>	All language is suitable for the target audience	5% of the language is unsuitable for the audience.	5-20% of the language is unsuitable for the audience.	20-50% of the language is unsuitable for the audience.
<b>Question and Answer session</b>	Able to answer questions accurately and beyond the inquirer's expectation.	Able to answer most questions well and to the inquirer's satisfaction. For questions that he/she doesn't know the answer, should at least suggest/speculate a way to get an answer.	Answers questions, but probably not to questioner's satisfaction. Some hints of "smoking" here.	Too much "smoking" and/or not able to answer most questions. Shows ignorance about some concepts and ideas.

## SP3172 Viva

The Viva will be graded by a panel of SPS staff mentors, two external senior student mentors and host laboratory supervisor.

### Format

- **Assessors:** Each group will be assigned four assessors who have read your written report for the viva. The panel of assessors for your viva includes the principal investigator of your host lab, an SPS staff, an external SPS mentor and the group internal grading mentor.
- **Materials Allowed into Viva:** Students are allowed to bring in your own written report, research logbook and any raw / processed data / samples related to your research into the viva venue. You can have annotations on your written report if you desire. One group member is allowed to bring a laptop or tablet to reference soft-copy versions of papers and/or reports.
- **Duration:** The duration of the viva session varies for groups, a typical viva last for two hours.

### Rubrics

	<b>Exemplary</b>	<b>Accomplished</b>	<b>Developing</b>	<b>Beginner or incomplete</b>
<b>The relevance of Answers to Questions Posed</b>	Able to understand the questions asked. Answers accurately and to the point. Able to elaborate well when required.	Able to answer relevantly to most questions asked. However, might exhibit the tendency to ramble hoping to get a correct answer.	Can answer some questions appropriately. However, answers tend to beat around the bush the, with lots of unimportant points that are not relevant to the question asked.	Tends to try to bluff their way out of the question. Answers are not relevant to the question. Does not really show an understanding of the question asked.
<b>Ability to Integrate Ideas</b>	Exceptional ability to link ideas together to give coherent and well thought out answers. Shows the ability to link ideas together and provide new insights without prompting or hinting.	Good ability to link ideas together and to give logical answers. However, might require slight prompting or hinting by the mentors.	Can link and integrate concepts. However, mentors have to guide their thinking along more compared to the above groups.	Generally not able to link concepts and ideas. Mentors spend more time guiding them to the answers. Can only see the overall picture when it's almost completed for them by the mentors.
<b>Basic Understanding of Background Materials</b>	Very well-read. Knows their background information very well, even down to the details.	Knows most of the background information to their project and is able to answer most questions asked with regards to the background. Might have slight trouble with some details as compared to the above classification.	Adequate knowledge. However, does not show reading beyond what is needed for the project. Does not show knowledge of the more general background of the project.	Very little knowledge. Likely had to be spoon-fed throughout their project. Does not know about the project at all and does not understand their report.

<b>Use language that is appropriate for the target audience?</b>	All language is suitable for the target audience.	5% of the language is unsuitable for the audience.	5-20% of the language is unsuitable for the audience.	20-50% of the language is unsuitable for the audience.
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## **Continuous Assessment (CA)**

The CA will be graded by the Host laboratory supervisor.

	<b>Evaluation Criteria</b>	<b>Full Marks</b>	<b>Marks given</b>
<b>1.</b>	General work attitude (i.e. attendance, initiative, self-motivation)	5 marks	
<b>2.</b>	Presentation skills (i.e. during lab/group meetings and seminars, data display and analysis session)	5 marks	
<b>3.</b>	Independence & Critical thinking ability (i.e. clarity of thoughts, approaches to solving problems, ability to interpret results, draw conclusions, evaluate solutions, ability to answer supervisor's questions)	10 marks	

## SP3172 Congress Poster

The poster will be graded by 3 Congress grader (Graduate mentors) and Host laboratory supervisor.

### Format

A good poster should be intelligible on its own. The sections of a scientific poster (see below) are similar to the main sections of your written report, except that ideally, they will only contain a handful of sentences of text.

- **Poster Size:** The size of your poster should be A1 size.
- **Font Size:** No particular font size is required. But a good poster should have distinctive font size for the sections and the content.
- **Affiliation:** Affiliation of the third party in the project (e.g. CQT) must be addressed in accordance to the institutes or departments.
- **Logo:** NUS Logo to be placed at the top left corner, SPS Logo to be placed at the top right corner. If there is a third party of your lab involving in the research project, the Logo of the organisation will be attached on the poster as well. Note that NUS has imposed requirements on the size of the NUS Logo used on the poster. The details and NUS Logo can be found in <http://www.nus.edu.sg/identity/>. SPS Logo can be found at <http://sps.nus.edu.sg/>.
- **Margin:** Please use a margin of 2.5 cm for all boundaries – top, bottom, left and right.
- **Citations:** Use any standard format in scientific literature (ACS, APS, AMS, etc.), but be consistent.
- **Figures and Tables:** Captions for figures / schematics should be *below* the object; while table captions should be *above* the table. Figures and tables should be labelled and numbered properly.
- **Important:** Any figures not generated by you must be included with the owner's permission in your report. Pictures from the webpage must be cited accordingly.

### Rubrics

	Exemplary	Accomplished	Developing	Beginner or incomplete
<b>Content of Poster</b>	Concise presents the main points of introduction, hypotheses/ propositions, research methods, results, and conclusions in a well-organized manner.  Narration and/or answering of questions is engaging, thorough, and adds greatly to the presentation.	Adequately presents the main points of introduction, hypotheses/ proposition, research methods, results, and conclusions in a fairly well-organized manner.  Narration and/or answering of questions is adequate and adds to the presentation.	Presents the main points of introduction, hypotheses/ propositions, research methods, results, and conclusions but not as sufficiently and not as well-organized.  Narration and/or answering of questions is somewhat lacking.	Does not sufficiently present the main points of introduction, hypotheses/ propositions, research methods, results, and conclusions and is not well-organized.  Narration and/or answering of questions is lacking.

<p><b>The organisation, flow and the visual presentation of the poster</b></p>	<p>Overall visually appealing; not cluttered; colours and patterns enhance readability;</p> <p>Uses font sizes/variations which facilitate the organization, presentation, and readability of the research.</p> <p>Graphics (e.g., tables, figures, etc.) are engaging and enhance the text content is clearly arranged so that the viewer can understand order without narration.</p>	<p>Overall visually appealing; not cluttered; colours and patterns support readability.</p> <p>Adequate use of font sizes/variations to facilitate the organization, presentation, and readability of the research.</p> <p>Graphics (e.g. tables, figures, etc.) enhance the text content is arranged so that the viewer can understand order without narration.</p>	<p>Visual appeal is adequate; somewhat cluttered; colours and patterns detract from readability.</p> <p>Use of font sizes/variations to facilitate the organization, presentation, and readability of the research is somewhat inconsistent/distractions</p> <p>Graphics (e.g., tables, figures, etc.) adequately enhance the text</p> <p>The content arrangement is somewhat confusing and does not adequately assist the viewer in understanding order without narration.</p>	<p>Not very visually appealing; cluttered; colours and patterns hinder readability.</p> <p>Use of font sizes/variations to facilitate the organization, presentation, and readability of the research is inconsistent/distractions</p> <p>Graphics (e.g., tables, figures, etc.) do not enhance the text.</p> <p>The content arrangement is somewhat confusing and does not adequately assist the viewer in understanding order without narration.</p>
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## SP3172 Written Report

**The report will be graded by a panel of SPS staff mentor, two external senior student mentors and host laboratory supervisor.**

Students are required to submit both hardcopies and soft copy of their written report:

- **Hard copies:** You must prepare hardcopies of your report for submission. The number of hardcopies needed from each group varies, depending on whether your assessors request for hardcopies. You will be informed at a later date on the number of hardcopies to submit. Duplex printing is encouraged. You are also reminded to **submit a hardcopy of your report to your project staff supervisor** by the deadline mentioned above.
- **Soft copy:** Each group must also submit soft copies of your report via LumiNUS both in PDF format and in an editable format (such as Word or LaTeX, including any figures, BibTeX files, etc. required to compile the report). The file should be titled as **“groupnumber\_projecttitle”**, e.g. “3\_Fluorescence Spectroscopy of FBP3a”. The deadline of your soft copies of your reports follows the deadline mentioned.
- Each report will be graded by four assessors who will also grade your oral viva. The assessors panel for your written report includes the principal investigator of your host lab, a SPS staff, an external SPS mentor (graduate/senior) and your group internal grading mentor (graduate/senior).

### **Format**

To ensure consistency and fairness, there are some guidelines that all students must adhere to:

- **Length:** The primary content of your report must not exceed **30 (thirty) pages**, *not including* the cover page, abstract page, contents page, acknowledgement, appendix or bibliography.
- **Font:** The required font type is either Computer Modern (for LaTeX) or Times New Roman/ CMU Serif (for Microsoft / Open Office documents). Please use **font size 12** and **double spacing**.
- **Margin:** Please use **2.5 cm** margin for all boundaries – top, bottom, left and right.
- **Figures and Tables:** Captions for figures and schematics should be below the object; while table captions should be above the table. All figures and tables should be labelled and numbered properly. [Instructions to constructing scientific figures and writing figure legends are here.](#)  
*Important: Any figures not generated by you must be included with the owner's permission in your report. Pictures from the web page must be cited accordingly.*
- **Cover Page:** The title in the cover page should be **boldface** and **font size 14**, while author names should be font size 12. Remember that proper affiliation and the title of your staff mentors should be addressed accordingly.
- **A Table of Content** for your report is required.

## Rubrics

	<b>Exemplary</b>	<b>Accomplished</b>	<b>Developing</b>	<b>Beginner or incomplete</b>
<b>Introduction [Introductory paragraph(s), literature review, hypotheses or propositions]</b>	<p>Clearly identifies and discusses research focus/purpose of research.</p> <p>The research focus is clearly grounded in previous research/ theoretically relevant literature.</p> <p>Significance of the research is clearly identified (how it adds to previous research).</p> <p>Hypotheses/ propositions are clearly articulated.</p>	<p>Limited discussion of research focus/purpose of research.</p> <p>The research focus is less well-grounded in previous research/ theoretically relevant literature.</p> <p>Significance of the research is not as clearly identified (how it adds to previous research).</p> <p>Hypotheses/ propositions are described but not as well articulated.</p>	<p>Minimal discussion of research focus/purpose of research.</p> <p>The research focus is not well-grounded in previous research/ theoretically relevant literature.</p> <p>Significance of the research is not clearly identified (how it adds to previous research).</p> <p>Hypotheses/ propositions are not well articulated.</p>	<p>Little or no discussion of research focus/purpose of research.</p> <p>Research focus not grounded in previous research/ theoretically relevant literature.</p> <p>Significance of the research is not identified (how it adds to previous research).</p> <p>Hypotheses/ propositions are poorly articulated or are absent altogether.</p>
<b>Result</b> Was the data presented scientifically logic and critically analyzed?	<p>Results are clearly explained in a comprehensive level of detail and are well-organized.</p> <p>Tables/figures clearly and concisely convey the data.</p> <p>Statistical analyses (if used) are appropriate tests and are accurately interpreted.</p>	<p>Results are explained but not as clearly, the level of detail is not as sufficient, and there are some organizational issues.</p> <p>Tables/figures are not as clear/concise in conveying the data.</p> <p>Statistical analyses (if used) are appropriate tests but are not accurately interpreted.</p>	<p>Results are not very clearly explained, the level of detail is insufficient, and there are more organizational issues.</p> <p>Tables/figures are not clear/concise in conveying the data.</p> <p>Statistical analyses (if used) are inappropriate tests and/or are not accurately interpreted.</p>	<p>Results are not clearly explained, the level of detail is severely insufficient, and there are serious organizational issues.</p> <p>Tables/figures are not clear/concise in conveying the data.</p> <p>Statistical analyses (if used) are inappropriate tests and/or are not accurately interpreted.</p>
<b>Discussion and interpretations</b>	<p>Interpretation/ analysis of results are thoughtful and insightful, are clearly informed by the study's results, and thoroughly address how they supported, refuted, and/or informed the hypotheses/ propositions.</p>	<p>Interpretation/ analysis of results are sufficient but somewhat lacking in thoughtfulness and insight, are not as clearly informed by the study's results, and do not as thoroughly address how they supported, refuted, and/or informed the hypotheses/ proposition</p>	<p>Interpretation/ analysis of results lacking in thoughtfulness and insight, are not clearly informed by the study's results, and do not adequately address how they supported, refuted, and/or informed the hypotheses/ propositions</p>	<p>Interpretation/ analysis of results severely lacking in thoughtfulness and insight, are not informed by the study's results, and do not address how they supported, refuted, and/or informed the hypotheses/ propositions</p>

	An insightful discussion of how the study relates to and/or enhances the present scholarship in this area.  Suggestions for further research in this area are insightful and thoughtful.	Discussion of how the study relates to and/or enhances the present scholarship in this area is adequate.  Suggestions for further research in this area are adequate.	Discussion of how the study relates to and/or enhances the present scholarship in this area is limited.  Suggestions for further research in this area are very limited.	Discussion of how the study relates to and/or enhances the present scholarship in this area is severely limited and/or absent altogether.  Suggestions for further research in this area are severely limited and/or absent altogether.
<b>Cohesiveness</b>	Ties together information from all sources. Report flows from one issue to the next without the need for headings. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	For the most part, ties together information from all sources. Report flows with only some disjointedness. Author's writing demonstrates an understanding of the relationship among material obtained from all sources.	Sometimes ties together information from all sources. The report does not flow - disjointedness is apparent. Author's writing does not demonstrate an understanding of the relationship among material obtained from all sources.	Does not tie together information. The report does not flow and appears to be created from disparate issues. Headings are necessary to link concepts. Writing does not demonstrate understanding any relationships
<b>Consider the levels of prior knowledge in the target audience</b>	All concepts used are appropriate for and can be understood by the audience.	Most concepts used are appropriate for and can be understood by the audience.	Some concepts used are appropriate for and can be understood by the audience.	Few concepts used can be understood by the audience.
<b>Formatting, Spelling and grammatical errors</b>	No spelling or grammatical errors.	Very few spelling or grammatical errors.	Errors on almost every page.	Apparently, no proofreading is done.
<b>Documentation of Sources, Quality of Sources</b>	Cites all data obtained from other sources. Relevant citation style is accurately used in both text and bibliography.  Sources are all scholarly and clearly, relate to the research focus.	Cites most data obtained from other sources. Relevant citation style is used in both text and bibliography.  Sources are primarily scholarly and relate to the research focus.	Cites some data obtained from other sources. Citation style is either inconsistent or incorrect.  Sources are not primarily scholarly and relate to the research focus but somewhat tangentially.	Does not cite sources.  Sources are disproportionately non-scholarly and do not clearly relate to the research focus.

## SP3172 Learning Reflection

The learning reflection will be graded by the group internal mentors

### Rubrics

	<b>Exemplary</b>	<b>Accomplished</b>	<b>Developing</b>	<b>Beginner or incomplete</b>
<b>Analysis</b>	The reflection moves beyond a simple description of the experience to an analysis of how the experience contributed to student understanding of self, others, and/or course concepts.	The reflection demonstrates the group attempts to analyse the experience, but analysis lacks depth.	The group makes attempts at applying the learning experience to the understanding of self, others, and/or course concepts but fails to demonstrate the depth of analysis.	Reflection does not move beyond a description of the learning experience(s).
<b>Relevance</b>	The learning experience is reflected upon is relevant and meaningful to student and course learning goals.	The learning experience is reflected upon is relevant and meaningful to student and course learning goals.	Student makes attempts to demonstrate relevance, but the relevance is unclear to the reader.	Most of the reflection is irrelevant to the student and/or course learning goals.
<b>Clarity</b>	The language is clear and expressive. The reader can create a mental picture of the situation being described. Explanation of concepts makes sense to an uninformed reader.	Minor, infrequent lapses in clarity and accuracy.	There are frequent lapses in clarity and accuracy.	Language is unclear and confusing throughout. Concepts are either not discussed or are presented inaccurately.