Maastricht University

Project Period SYLLABUS

P6 2024/2025

GENERAL INFORMATION

The project committee / coordinators

Dr. Panos Christakoglou (MSP) Office: B2.024
Dr. Kyle Jazwa (MSP) Office: B2.015
Dr. Phil Klahs (MSP) Office: B2.008
Dr. Lorenzo Reverberi (MSP) Office: B2.008
Saskia van Belkum (MSP) (OSA representative)
Heather Obmann (MSP) (OSA representative)
Email: msp-projects@maastrichtuniversity.nl (please allow 24 hrs for response)

Responsibilities

The project coordinators are responsible for organising Project Period together with OSA. Before Project Period we collect project descriptions, produce the project booklet, collect the choice forms and allocate students to projects. During Project Period we are responsible for organising the presentations and eventually submitting the final grades to OSA.

Project supervisors

Each project has one or more supervisors; these may be MSP staff, other UM staff or people at companies and other organisations.

Responsibilities

The project supervisors are responsible for writing the project description. They are also responsible for purchasing what needs to be bought for the project and coordinating with each other on which days students will be at DUB30 and the requirements in terms of lab-space at DUB30. Note that in student-led projects the student leaders are responsible for the items mentioned above, in consultation and agreement with the project supervisor(s). During Project Period the supervisors are expected to guide students in their project, organise (mandatory) meetings (see attendance requirements), communicate clearly the expected deliverables, the agreements and the milestones, grade the project report and give individual supervisor grades. Supervisors are also responsible for sending the final grades to the project committee and for any additional assignment from students that did not meet the attendance requirements during the project.

Lab assistants

When students are working in the labs at DUB30, there should always be a lab assistant present. Note that occasionally a MSP lecturer can be present in the lab as a lab assistant.

Responsibilities

The lab assistant is present in the lab at all times when there are students working in the lab (*this is a legal requirement*). The lab assistant's responsibility is to make sure that the safety rules at DUB30 are followed. For example, they may send students away if they are not wearing their lab coat. Lab assistants may also help students that have questions about their experiment.

Students

Participants of Project Period.

Responsibilities

The students taking part in Project Period are expected to meet the attendance requirements (see attendance requirements) and to contribute to the project to the best of their ability. Students are expected to be familiar with lab safety and the content in this booklet. They are also expected to check their UM email and student portal regularly for updates from the project committee. In addition, the students are expected to demonstrate respectful collaborative behaviour towards their peers as well as also towards the supervisors. Before the end of Project Period, they should make sure to have the Lab Departure Form signed off, and at the end of the symposium, students are expected to take responsibility for cleaning up the rooms and common spaces, particularly ensuring that any materials or equipment they used are properly packed up and the areas are left tidy.

MEETINGS

Preparatory Meetings

Students and supervisors are expected to meet a few times (between one and about three times) during P2/P5 in order to discuss the direction of the project, start collecting and sharing relevant (bibliographic) resources, ordering necessary material and supplies, and so forth. Students are expected to agree on the preferred communication and sharing tools (group chat, shared folders, et cetera). For the 2000- and 3000-level, these meetings should also include time dedicated to conduct background research, design the methods and experimental design for the project, and draft the methods section (to be submitted before the end of P2/P5). 2000-level groups can also start working on their annotated bibliographies.

Peer review

The peer review sessions will be scheduled on **Tue/Wed/Thu of week 3** and are organised by the individual project groups. During the peer review session students and supervisors discuss the grades that each student received for their contribution.
We believe that your peers have a right to hear your feedback on their performance during the period. For that reason the penalty for missing the scheduled peer review is substantial. If you miss the peer review session, you get a **0.0** for your peer review grade. Missed attendance cannot be made up for with an additional assignment. In other words, you cannot receive the grades your peers gave you by means of an additional assignment.
Disclaimer: the project committee maintains the right to make exceptions for students with documented family emergencies and documented serious and immediate health issues such as hospitalization.

MSP Project Symposium

The MSP Project Symposium will take place on the **Friday of week 3**. At the symposium, all groups present their findings as an in-person scientific poster (1000-level) or presentation (2/3000-level). The posters will be displayed all day at PHS1. Start and closing times will be announced two days before the symposium at the latest. Groups should make sure that their poster is hanging in the appropriate spot by the start of the Symposium. There should always be somebody at your poster, ready to talk about the science, at all times between start and closing (you will want to prep this talk a little bit). **Every group member** should spend some time at the poster during the Symposium (mandatory attendance), so take turns and schedule who is going to be there and when; when not at their poster, students should visit other posters and presentations. In fact, **all students** will also be required to provide a peer grade for one or more posters and presentations; the specific responsibilities will be communicated by the project committee prior to the start of the Symposium.

Lab Safety Presentation

All students involved in projects, whether in the lab, field, or tutorial rooms must view the safety presentation and take the safety quiz on Canvas before beginning work in Project Period. Lab safety is a paramount responsibility in our programme and it is important to have a periodic reminder of proper safety procedures. Project supervisors are to assure that students assigned to their projects have passed the safety quiz with a score of at least 12/17 by 23:59 on the Wednesday of the first week of projects.

PURCHASES

To better manage project expenses, a budget table must be submitted to the project committee at least one month before Project Period begins. This table should be prepared by the supervisor, or by the Student-Led Project (SLP) leader in agreement with the supervisor, and should include a list of items, estimated prices, and a short explanation for each purchase. Ideally, the budget can be discussed during the preparation meetings in the period before the project starts. The project committee will review the budget in consultation with the MSP directorate and either approve it or return it for adjustments. **Purchases can only be made once the budget has been approved, and receipts can only be submitted for reimbursement after that approval**.

ASSESSMENT

Points of assessment

1000-level	
Practical grades (individual):	Reporting grades (group):

• Self-evaluation (5%) • Peer review grades (20%) • Supervisor grade (20%)	• Abstract (10%) • Poster presentation (45%)

2000-level	
Practical grades (individual):	Reporting grades (group):
• Self-evaluation (5%) • Peer review grades (20%) • Supervisor grade (20%)	• Abstract (5%) • Methods and Results (20%) • Annotated Bibliography (10%) • Presentation (20%)

3000-level	
Practical grades (individual):	Reporting grades (group):
• Self-evaluation (5%) • Peer review grades (20%) • Supervisor grade (20%)	• Full paper (35%) • Presentation (20%)

Practical grades (individual)

Self-Evaluation

You are given a rubric (attached) and are required to assess your efforts and contributions to the project, as well as to discuss and justify the grade you assign to yourself based on the criteria therein. This will be carried out online. For each of the criteria you will be required to grade yourself on the scale given in the rubric. The supervisor will compare the tallied peer reviews to assess your self-evaluation and this will form a basis for discussion of each student's strengths and weaknesses during the peer review. Thus, make sure that you are able to justify the grades you have given yourself. Note that the grades given in the self-reflection are sacrosanct and cannot be changed by the supervisor. However, if the supervisor feels that an individual has evaluated themselves unfairly based on the peer reviews, this will be reflected in the supervisor's own grading of the individual.

Peer review/self-evaluation grading by the students

You are given a rubric (attached) and are required to assess the other members of the group based on the criteria therein. This will be carried out online. For each of the criteria you will be required to grade each student anonymously according to the rubric. The supervisor will bring the tallied peer reviews to the session and this will form a basis for discussion of each student's strengths and weaknesses. Thus, make sure that you are able to provide reasons for the grades you have given. Note that the grades given at the peer review are sacrosanct and cannot be changed by the supervisor. If, however, the supervisor feels that a group has performed poorly in peer reviewing each other this will be reflected in the supervisor's own grading of individuals.

Students, please keep the following in mind with peer review/self-evaluation grading:

- Exact instructions on submitting your peer review/self-evaluation grades will be posted on Canvas. Please check Canvas regularly during Project Period.
- The deadline for submitting your peer review/self-evaluation grades online is **17:00 on the final Monday of Project Period**.
- Students are responsible for submitting the grades on time and correctly. Please make sure that you click the right buttons and wait for the page to process your grades. If you suspect that something went wrong when submitting your grades, email the grades to your supervisor before the deadline.
- If you don't submit your grades correctly or if you miss the deadline, your peer review grade will be **0.0**. While this is a very harsh penalty, we believe it is justified. Because the peer review consists of many small grades, the number of grades that needs to be processed in a matter of hours is rather large. Every person that submits their grades late disrupts the automated system we have in place and unnecessarily increases the workload for their supervisor and the project committee.
- If you forget to submit your grades, email them to your supervisor ASAP. This way your peers don't have to suffer from your lateness and will still receive their grades.

Supervisor grade

The supervisor will grade students based on the same rubric as is used for peer review. This does not necessarily mean that the grades of the supervisor will be identical to those of the group even if the criteria are identical (supervisor and group perspectives are often different). Supervisors may modify the rubric as they see fit and may use particular ways of assessment (e.g. the quality of the lab journal you keep) to provide a grade. Supervisors will levy heavy penalties for unsafe behaviour in the lab, untidiness and disorganisation. You should further discuss criteria additional to those in the rubric with your supervisor at your opening group meeting.

Reporting grades (group grades)

Important: Report grades are group grades and group members generally receive the same grade. However, in cases where the project supervisor finds that a member of the group has not made an adequate contribution, they may decide to award that member of the group a lower grade.

Abstract

Each group should submit a **200-300 word** abstract summarising the research project. The abstract should include (concise) statements that introduce the project and its context/significance, the methods, the results, and the primary conclusions and takeaways.

Annotated Bibliography (2000-level projects)

Each 2000-level group should submit an annotated bibliography of **twelve unique, peer-reviewed sources** in a **consistent style** (APA 7 unless otherwise stated). The references should include a **short summary** of the text (2-5 sentences) and statements that indicate the **relevance of the source** to the group's project (1-3

sentences). We encourage 2000-level groups to submit a rough draft of 5-7 sources to Canvas and the supervisor at the end of P2/P5 (dates will be posted on Canvas). This submission is optional but strongly encouraged, and it can be used as the basis for the official mandatory submission at the end of Project Period.

Methods and Results Sections

The Methods and Results sections should form a coherent document of **2500-4000 words** (unless otherwise indicated by the supervisor). These sections should be written as if they are part of a larger research paper. They should be clear, succinct presentations of the facts without the need for interpretation (this should be preferably included in the presentation). A **draft of the Methods section** should be submitted to Canvas and the supervisor at the end of P2/P5 by 2000/3000-level groups (date posted on Canvas). This draft be updated and pasted into the final assessment.

Full Paper

A report should be written in which all the different aspects of the project are described in a scientifically sound and concise way.

- The deadline for submitting your report is **12:00 midday on Thursday of week 3** (the final Thursday of Project Period).
- You should email the report to your supervisor(s) AND upload the report to Canvas for a plagiarism check and for archiving.
- Failure to hand in either copy on time will result in a penalty of 0.5 for up to the first 15 minutes it is late, a further 0.5 for up to the second 15 minutes and a further 0.5 for each subsequent half hour or part thereof.
- The report should be **4000-7000 words** excluding references.
- If a group wants to write a longer text, they must discuss it first with their project supervisor. A report that is too long without prior agreement will be penalised 0.2 of the grade per 100 words or part thereof over 7000 or under 4000.
- All students in a group must contribute to the written report. The report must indicate the contributions of each group member to the report in an appendix (penalty of 0.5 off the overall project mark if this information is not provided).
- The written report should generally be styled as a scientific paper, although for non-research projects a more appropriate format may be used. Main parts of the report are:
    - **General introduction (main research questions and objectives)**
    - **Experimental section (materials & methods)**
    - **Results section**
    - **Discussion**
- You may discuss further with your project supervisor about the style of your report.

We want you to show that you understand what you are doing, why you are doing it and the implications of your results, i.e. to think like real scientists, hence a focus on the introduction and discussion sections is emphasised, which really test whether you understand your research.

Presentation grade and Posters

At the **MSP Project Symposium** on **Friday of week 3** you have the opportunity to share your findings with your peers and MSP staff during the MSP Project seminar. There will be presentations from the 2000- and 3000-level project groups, which you are welcome to attend, as well as posters from the 1000-level project groups.
The project committee will have all (1000-level) posters printed after they have been submitted. Please email them to the project committee **by 15:00 on the Wednesday of Week 3**. The file must be:

- **PDF format**
- **A0 size**
- **portrait mode (NOT landscape!)**
- **named after your project group's title and group number.**
  Example:
  123 - Title of your project (shortened if needed).pdf

All students in the group must contribute to the design and creation of the poster. You can discuss with your project supervisor what to put on your poster (but don't expect a full feedback round like for the report). For general advice on designing a poster for a poster session, see these websites:

- http://colinpurrington.com/tips/poster-design (lots and lots of advice, a bit opinionated but generally o.k.)
- http://betterposters.blogspot.nl (blog in which a neurobiology professor critiques posters and gives general advice)
- https://www.posterpresentations.com/free-poster-templates.html (this is a site that has some free poster templates for PowerPoint that may work for Keynote as well).
- https://guides.nyu.edu/posters (good general poster information)

Before the start of your poster session, groups are responsible for **retrieving their printed posters** from the project committee and hanging them in the designated space, unless otherwise directed by the Project Period coordinators (the necessary details will be communicated on Canvas).
During the poster session lecturers will walk around and ask you to talk about your research/poster. Make sure you prepare a short (5 minutes) explanation of the research and your findings, using your poster to clarify the set-up of your experiments, as well as your findings. This chat is supposed to be interactive. You will be graded by some (but perhaps not all) lecturers on this talk, and on your poster.

- Be sure to visit posters of other groups as well! Your group will be assigned grading responsibilities for another group's poster to peer grade. Failure to perform your peer grading responsibilities will result in a reduction of your overall grade for the project by 0.5.

Presentations (2000/3000-level) should be sent to the project committee by **18:00 on Thursday of Week 3** (the day before the symposium). The file must be:

- **PDF or PPTX format**

- **named after your project group's title and group number.**
  Example:
  345 - Title of your project (shortened if needed).pptx

Presentations should be 13 to 15 minutes long and will be followed by a Q&A session (20 minutes in total per group). **All students in the group** should be in attendance and contribute to answering the questions, but only **two-three students** will present the work. Presentations should be aimed at your peers and the general public, **not at specialists in your project's field**. You should try to communicate the main scientific context, methods, and findings of your project in a way that is accessible to non-experts, without sacrificing rigour and essential details.

Attendance requirements

Project Period has several meetings with mandatory attendance:

- The **opening meeting** with your group
- The **peer review session**
- Your time slot on the day of the **MSP Project Symposium**

If you miss or show up late for any of these group events you are considered to have failed attendance for Project Period. You can, however, still pass the project if you make up for your absence through an additional assignment. You will need to request an additional assignment from the project committee through OSA. OSA must receive this request within 10 working days after the infraction. The project committee will decide if you are to be given an additional assignment or not. Note that an additional assignment will only be granted after the first time only to students who missed or were late for one of these events. Repeat offenders will fail without recourse.
In addition to the mandatory meetings, students are expected to be present on the days they have agreed with their supervisor and peers. In general this translates to a few preparatory meetings during the teaching periods preceding Project Period and three-four days per week either in the lab/field or meeting in a tutorial room with their group, but may be different depending on the project and where it takes place. Project supervisors have the discretion to set attendance requirements for their projects and also maintain the right to fail a student if the student's attendance during Project Period is deemed insufficient. It may be possible to make up for missed days by means of an additional assignment, for example if you missed days because of illness or a family emergency. You will have to request an additional assignment from your supervisor within 10 working days after completion of the project. Your supervisor decides if you are given an additional assignment or not.

Lab Departure Form

After the end of Project Period, students are also expected to clean up their workspaces in the labs, appropriately dispose of biological, chemical and/or otherwise hazardous materials, and return all equipment to the dedicated storage spaces. A **Lab Departure Form** (which will be made available on Canvas) must be filled out by the group and signed off by the lab coordinators (Kathia Jimenez Monroy and Joeri Noordijk) by 17:00 on Thursday of week 3. Failure to receive a positive sign-off and/or

leaving the lab in poor conditions may result in **deductions to the final grade** at the discretion of the supervisor and in consultation with the lab coordinators and the project committee.

Resit

If you fail the project (meaning your final grade is lower than 5.50), you may be eligible for a resit, at the project supervisor's discretion. In order to be eligible for a resit, a student must have:

- Made reasonable attempts at communicating with your group and the supervisor during the course of the project (either by attending meetings or consistent emails)
- Made a fair attempt to fulfil all requirements of the assessment.

Note that any practical resit will occur in the week following the end of Project Period.

Appeals of grades

If a student wishes to appeal a (supervisor) grade, they should write an email to their supervisor critically reflecting on their performance during Project Period and laying out their reasons for believing their grade should be higher. In appealing a grade a student accepts that their grade can go down as well as up, including for wasting a supervisor's time on a meritless appeal. Please note that according to the Rules and Regulations, you have the right to appeal a decision made by an examiner or the Examination Committee within six weeks of its announcement. This means the deadline for appealing your project grade is six weeks after the grades become available.

PROJECT PERIOD SCHEDULE

Week 1	
Mon	Mandatory **opening meeting** with your group and supervisor(s)
Mon-Fri	Research
Week 2	
Mon-Fri	Research
Fri	Peer- and Self-evaluation online forms available
Week 3	
Mon	Research
	Peer- and Self-evaluations online forms **due at 17:00**
Tue	Last day of research/**Lab clean-up**

	Posters due at 12:00 midday
Wed	Presentation preparation
	Abstracts due at 12:00 midday
Thu	Presentation preparation
	Papers due at 12:00 midday
	Lab departure forms due at 17:00
	Presentation to be sent to the PC by **18:00**
Fri	**MSP PROJECT SYMPOSIUM**

RUBRICS

1000-level

Writing Assignments

Description	Points
ABSTRACT – Statement(s) explaining and/or contextualising the study (15%)	
Entirely accurate and complete; the study is well justified by a connection to scholarship on the topic or a real-world issue.	15
Between the description above and one below.	12.75
Information is mostly correct with only minor inaccuracies or omissions; the justification is only superficially addressed or superficially connected to scholarship or a real-world issue.	10.5
Between the description above and one below.	8.25
Incorrect information and a poor or inaccurate justification.	4.5
Unacceptable/missing.	0
ABSTRACT – Statement of methods (15%)	
Sufficiently detailed for an abstract, yet concise; accurately reflects the methods used in the study.	15
Between the description above and one below.	12.75
Either slightly too detailed or not detailed enough for an abstract; some inconsistencies in the presentation of the methods.	10.5
Between the description above and one below.	8.25
Very poor summary of the methods; either too concise or not concise enough.	4.5
Unacceptable/missing.	0
ABSTRACT – Primary results statement (20%)	
Sufficiently detailed for an abstract, yet concise; no errors, omissions, or infelicities; aligns with research statement and methods.	20
Between the description above and one below.	17
Either slightly too detailed or not detailed enough for an abstract; there may be some inconsistencies in results; it may not fully align with the research statement and methods.	14
Between the description above and one below.	11
Very poor summary of the results; does not align with the research statement and methods.	6
Unacceptable/missing.	0
ABSTRACT – Conclusions or takeaway statement(s) (20%)	
Sufficiently detailed for an abstract; conclusions are reasonably developed from results; implications demonstrate a deep understanding of the research.	20
Between the description above and one below.	17

Description	Points
Either the conclusions do not adequately reflect the results of the study or the analysis is superficial; only a superficial understanding of the broader research.	14
Between the description above and one below.	11
Conclusions are only minimally relevant to the results; poor analysis, interpretation or reflection.	6
Unacceptable/missing.	0
ABSTRACT – Organization (15%)	
All necessary components are present and positioned in correct order; each sentence naturally flows to the next; no element of the abstract receives unnecessary emphasis.	15
Between the description above and one below.	12.75
One of the components is incorrectly positioned or receives unnecessary emphasis; there may be some issues with flow.	10.5
Between the description above and one below.	8.25
Abstract is poorly balanced; multiple statements receive too much or too little emphasis; significant issues with the flow of the text.	4.5
Unacceptable/missing.	0
ABSTRACT – Quality, Clarity and Readability (15%)	
Virtually no grammatical errors; the abstract reads effortlessly; abstract has the appropriate (scientific) tone.	15
Between the description above and one below.	12.75
Some grammatical errors, but not to the point that meaning is lost; some issues with flow/readability; and/or the tone is such that the too much jargon or "academic" is used unnecessarily or is too informal.	10.5
Between the description above and one below.	8.25
Either grammar, tone, or syntax is so poor that the meaning of the text is lost.	4.5
Unacceptable/missing.	0

Poster Presentation

Description	Points
Presentation and organisation of research (25%)	
Research is exceptionally well-articulated, with clear objectives, thorough analysis, and well-supported conclusions. Flow and organization are flawless.	25
Research is well-presented, with clear objectives and solid analysis. Some minor points may lack depth or clarity.	21.25
Research is adequately presented but may have unclear objectives, limited analysis, or inconsistencies in flow.	17.5
Research lacks clarity, depth, or coherence. Key components such as objectives or conclusions are poorly developed or missing.	13.75
Research is minimally presented, disorganised, or unsupported by evidence. Objectives and conclusions are unclear or absent.	7.5
Unacceptable/missing.	0
Visual presentation (20%)	
The poster is visually appealing, well-organised, and professional. Graphics, fonts, and layout enhance readability and understanding.	20
The poster is clear and visually effective. Graphics and layout support readability, with minor issues in design or consistency.	17
The poster is functional but may have design flaws such as cluttered sections, inconsistent fonts, or unclear graphics.	14
The poster is difficult to read due to poor design, disorganised layout, or distracting graphics.	11
The poster's design is unprofessional, disorganised, or poorly constructed, significantly detracting from comprehension.	6
Unacceptable/missing.	0
Sources (15%)	
Sources are comprehensive, credible, and relevant. Proper citation format is used consistently. Integration of sources into the poster enhances the depth of research.	15
Sources are credible and relevant, with only minor gaps in comprehensiveness. Citations are mostly accurate and well-organised.	12.75
Sources are adequately chosen and cited but lack diversity or depth. Some citation errors or inconsistencies are present.	10.5
Sources are insufficient, poorly chosen, or weakly integrated. Citations are incomplete or inconsistently formatted.	8.25

Description	Points
Sources are missing, minimal, or irrelevant. Citation format is incorrect or absent.	4.5
Unacceptable/missing.	0
Spelling/Grammar (15%)	
Poster is free from spelling and grammatical errors. Writing is polished, professional, and contributes to the overall clarity.	15
Poster contains minor errors that do not detract from understanding or professionalism.	12.75
Poster has a few noticeable errors, but they do not significantly impede readability.	10.5
Frequent spelling and grammatical errors detract from readability and professionalism.	8.25
Poster has pervasive errors, making it difficult to read or comprehend.	4.5
Unacceptable/missing.	0
Answering of Questions (25%)	
Presenter demonstrates exceptional knowledge and confidence, addressing all questions clearly and insightfully. Responses provide depth and further context.	25
Presenter addresses questions effectively and confidently, with minor lapses in detail or articulation.	21.25
Presenter answers questions adequately but may lack confidence, detail, or consistency in responses.	17.5
Presenter struggles to address questions clearly or thoroughly. Some responses lack understanding or relevance.	13.75
Presenter is unable to answer questions or provides irrelevant or unclear responses, showing limited understanding.	7.5
Unacceptable/missing.	0

2000-level

Writing Assignments

Description	Points
ABSTRACT – Statement(s) explaining and/or contextualizing the study (5%)	
Entirely accurate and complete; study is well-justified and connected to scholarship on the topic or a real-world issue.	5
Between the description above and one below.	4.25
Information is mostly correct with only minor inaccuracies or omissions; the justification may be only superficially addressed or superficially connected to scholarship or a real-world issue.	3.5
Between the description above and one below.	2.75
Incorrect information and a poor or inaccurate justification.	1.5
Unacceptable/missing.	0
ABSTRACT – Statement(s) of methods and results (5%)	
Sufficiently detailed for an abstract, yet concise; accurately reflects the methods used in the study.	5
Between the description above and one below.	4.25
Either slightly too detailed or not detailed enough for an abstract; there may be some inconsistencies in the presentation of the methods and/or results.	3.5
Between the description above and one below.	2.75
Very poor summary of the methods; either too concise or not concise enough.	1.5
Unacceptable/missing.	0
ABSTRACT – Organisation of the Abstract (5%)	
All necessary components are present and positioned in correct order; each sentence naturally flows to the next; no element of the abstract receives unnecessary emphasis.	5
Between the description above and one below.	4.25
One of the components is incorrectly positioned or receives unnecessary emphasis; there may be some issues with flow.	3.5
Between the description above and one below.	2.75
Abstract is poorly balanced; multiple statements receive too much or too little emphasis; significant issues with the flow of the text.	1.5
Unacceptable/missing.	0
METHODS – Rigour and Quality (10%)	
The project or experiment is well designed and clearly aimed at answering the research question; the methods are justified	10

Description	Points
or supported by research.	
Between the description above and one below.	8.5
Occasional lapses in the quality of the methods; the methods are only partially supported by the research; the methods mostly align with the research question.	7
Between the description above and one below.	5.5
The methods are confused; they are almost entirely disconnected from research question.	3
Unacceptable/missing.	0
METHODS – Content (10%)	
Methods are clearly stated and complete; enough detail is provided but not so much as to include common knowledge, unimportant details, etc.; methods focus on the data collection and analysis.	10
Between the description above and one below.	8.5
Methods are mostly complete and/or occasionally include too many unnecessary details.	7
Between the description above and one below.	5.5
Very poor summary or misrepresentation of the methods; far too much or too little detail.	3
Unacceptable/missing.	0
METHODS – Organisation (10%)	
The space devoted to the methods is well-balanced and proportional to the actual methods used; the methods are thoughtfully organised and complemented with figures (if necessary).	10
Between the description above and one below.	8.5
Most steps in the methods are given the appropriate space, but there are occasional lapses; organization could be improved	7
Between the description above and one below.	5.5
The organization of the methods makes little sense or confuses the reader.	3
Unacceptable/missing.	0
RESULTS – Quality (10%)	
All relevant results are presented; the results adequately address the research questions.	10
Between the description above and one below.	8.5
Some results are unnecessary or missing; the results largely. address the research question.	7
Between the description above and one below.	5.5
The results are incomplete and/or a significant portion are not relevant.S	3
Unacceptable/missing.	0
RESULTS – Content (10%)	
The results are clearly stated; there is no interpretation; common knowledge, unimportant details, etc. are not included; results are aligned with the Methods.	10
Between the description above and one below.	8.5
Occasional interpretation or discussion is present, but mostly a clear presentation of the results; occasional misalignment with the Methods; some results may be missing or are only superficially presented.	7
Between the description above and one below.	5.5
Too much interpretation or discussion of the results; the results are confused.	3
Unacceptable/missing.	0
RESULTS – Figures and/or presentation of data (10%)	
Figures are simple, easy to read, and effective; they are not simply a "dump" of information; they are well-designed to complement the text.	10
Between the description above and one below.	8.5
Occasionally, images are difficult to read; sometimes they repeat the text too much or are not properly cited or placed in the text.	7
Between the description above and one below.	5.5
Poor design of figures; mostly not relevant to the text; figures are missing where there should be figures.	3
Unacceptable/missing.	0
ABSTRACT, METHODS, RESULTS – Quality, Clarity and Readability (10%)	

Description	Points
There are virtually no grammatical errors; texts read effortlessly; the appropriate (scientific) tone is used.	10
Between the description above and one below.	8.5
Some grammatical errors, but not to the point that the meaning is lost; there are some issues with flow/readability; too much jargon is unnecessarily used or too informal.	7
Between the description above and one below.	5.5
Grammar, tone, or syntax are so poor that the meaning of the text is lost.	3
Unacceptable/missing.	0
ANNOTATED BIBLIOGRAPHY – Sources and Discussion (5%)	
All sources are properly cited and present.	5
Between the description above and one below.	4.25
Six or fewer sources are included and/or properly cited.	3.5
Between the description above and one below.	2.75
Three or fewer sources are included and/or properly.	1.5
Unacceptable/missing.	0
ANNOTATED BIBLIOGRAPHY – Content (10%)	
All annotations are representative of the text and include a short, but complete summary of the text and statement indicating relevance to the project.	10
Between the description above and one below.	8.5
Most annotations are representative of the text and include a short statement (2-5 sent.) summarising the text and the relevance to the project; OR the statements are superficial (lacking detail).	7
Between the description above and one below.	5.5
Very poor summaries of the articles and/or many inaccuracies.	3
Unacceptable/missing.	0

Symposium Presentation

Description	Points
Context/Theory (20%)	
Theoretical background is thoroughly explained with exceptional clarity and depth. Connections to the broader scientific context are insightful and well-articulated.	20
Theoretical background is clear, detailed, and relevant. Connections to broader context are evident but not as thoroughly explored.	17
Theoretical background is presented adequately, covering the main points but with limited depth or contextual connection.	14
Theoretical background is incomplete or lacks clarity. Connections to broader context are weak or superficial.	11
Theoretical background is poorly explained, irrelevant, or missing. No meaningful connection to the broader scientific context.	6
Unacceptable/missing.	0
Description of experiment or/and method (20%)	
Methods are described with exceptional clarity, precision, and logical flow. Relevant technical details are included and well-explained.	20
Methods are clearly described with good organization and sufficient technical detail. Minor points may need further clarification.	17
Methods are adequately described but may lack precision, depth, or logical organization in places.	14
Methods are unclear or poorly organised, with important technical details omitted or insufficiently explained.	11
Methods are barely described, disorganised, or missing critical technical details.	6
Unacceptable/missing.	0
Discussion of Results/Conclusions (25%)	
Results are analyzed rigorously and presented with exceptional clarity. Conclusions are insightful, well-supported by data, and tied to broader implications.	25
Results are clearly analyzed and well-presented. Conclusions are logical, adequately supported by data, and include broader implications.	21.25

Description	Points
Results and conclusions are presented adequately but lack depth, clarity, or a strong connection to broader implications.	17.5
Results and conclusions are unclear, insufficiently supported, or poorly connected to broader implications.	13.75
Results and conclusions are vague, unsupported, or missing.	7.5
Unacceptable/missing.	0
Referencing (5%)	
References are comprehensive, properly cited, and include a wide range of credible sources. Citation format is flawless.	5
References are appropriate and properly cited, with only minor formatting errors.	4.25
References are included but may be limited, incomplete, or have noticeable formatting errors.	3.5
References are few, poorly chosen, or improperly cited.	2.75
References are minimal.	1.5
Unacceptable/missing.	0
Use of Media (15%)	
Media is highly effective, professional, and seamlessly integrated into the presentation. Graphics, slides, or other visuals enhance understanding.	15
Media is effective, well-designed, and relevant. Minor improvements could enhance integration or clarity.	12.75
Media is functional and relevant but may lack professionalism, clarity, or integration.	10.5
Media is poorly designed, underutilised, or lacks clear relevance to the presentation.	8.25
Media is ineffective, absent, or distracting, detracting from the presentation's quality.	4.5
Unacceptable/missing.	0
Delivery of presentation (15%)	
Presenter speaks with confidence, clarity, and enthusiasm, maintaining excellent engagement with the audience. Speech is perfectly paced, and transitions between sections are seamless; it is accessible to all students and most audiences.	15
Presenter is clear and engaging, with good control of pacing and transitions. Minor hesitations or unclear moments do not detract from the overall delivery. Occasionally, there may be too much jargon or discussion of minutiae, but generally accessible.	12.75
Presenter is understandable and adequately engaged but shows some hesitations, uneven pacing, or minor difficulties maintaining audience interest. May not be accessible to all audiences.	10.5
Presentation is occasionally unclear, with frequent hesitations, awkward pacing, or lack of energy. Audience engagement is limited.	8.25
Presentation is difficult to follow due to unclear speech, excessive hesitations, or monotone delivery. Audience engagement is minimal or nonexistent.	4.5
Unacceptable/missing.	0

3000-level

Writing Assignments

Description	Points
ABSTRACT (10%)	
Offers a clear, sufficiently detailed, and focused summary; all necessary components are present and positioned in correct order; no element of the abstract receives unnecessary emphasis; virtually free of errors.	10
All necessary components are present and positioned correctly; only minor grammar/writing errors; occasionally offers too much or too little detail or emphasis.	8.5
One of the components is incorrectly positioned or receives unnecessary emphasis; there may be some issues with flow or grammar, but not to the detriment of understanding the abstract.	7
One of more of the necessary components are not present; other elements receive too much or too little detail; issues with flow or grammar occasionally lead to confusion or misunderstanding.	5.5
Poorly balanced with multiple statements receiving too much or too little emphasis; significant issues with the flow and grammar.	3
Unacceptable/missing.	0
INTRODUCTION (20%)	
Purpose of project is discussed at a high level. Theoretical background of work explained at a high level. Application of theory to project is explained at a high level.	20

Description	Points
Purpose of project is well described. Theoretical background of work is explained well. Application of theory to project is explained well.	17
Purpose of project is not fully described, but understandable. Some theoretical background is missing. Application of theory to project is explained but missing details.	14
Purpose of project is not clear. Theoretical background is poorly discussed. Application of theory to project is explained poorly/incomplete.	11
Stated purpose of project does not match text; little or no theoretical background or almost entirely background info given.	6
Unacceptable/missing.	0
MATERIALS AND METHODS (20%)	
Experimental setup of project is described with great detail. Explanation of why setup was chosen. Procedures for taking data are explained at a high level.	20
Experimental setup of project is described in depth. Explanation of why setup was chosen. Procedures for taking data are explained well.	17
Experimental setup is described. Setup choice explanation is not complete. Data procedures are mostly explained.	14
Experimental setup is not clear. Setup choice is poorly explained. Data procedures are poorly explained.	11
Too many unnecessary details about methods; experimental setup and data procedures are incomplete or confused.	6
Unacceptable/missing.	0
DISCUSSION OF RESULTS/CONCLUSIONS (30%)	
Methods of getting from data to results are demonstrated at a high level. Statistical analysis of results are discussed at a high level. Conclusions from results are discussed at a high level. Potential error sources and their effects on results are discussed in detail.	30
Methods of getting from data to results are shown. Statistical analysis of results are discussed well. Conclusions from results are discussed in detail. Potential error sources are discussed well.	25.5
Methods of getting to results from data are not well explained. Statistical analysis of results is mostly complete. Conclusions correspond to results, but with no explanation. Potential error sources are present, but incomplete.	21
Methods of getting to results from data are not clear. Statistical analysis of results is significantly incomplete. Conclusions do not correspond to results. Potential error sources are missing.	16.5
Minimal discussion of results; errors are evident; there is no attempt to contextualise, interpret, and/or understand the significance of the results.	9
Unacceptable/missing.	0
LAYOUT, APPEARANCE, WRITING (10%)	
Layout is appropriate and easy to follow. No spelling or grammar errors. Color and/or graphics used in paper enhance paper greatly.	10
Layout is appropriate and easy to follow. Few spelling or grammar mistakes. Color and/or graphics used in paper help significantly.	8.5
Layout in is appropriate order. Some spelling or grammatical errors. Color and/or graphics aid in understanding of paper, somewhat.	7
Report layout has items out of order. Several spelling and/or grammatical errors. Colors and/or graphics detract from readability.	5.5
Many grammatical and spelling errors; confusion caused by writing and/or layout; graphics are very difficult to read.	3
Unacceptable/missing.	0
REFERENCES (10%)	
All data obtained from other sources is cited. Number of sources meets or is better than expected. APA (or other) citation style is accurate.	10
References are appropriate and properly cited, with only minor formatting errors.	8.5
Some errors in citations (oversights or inappropriate sources), but mostly fine.	7
Several missing and/or improper sources or several citations very poorly formatted.	5.5
Data from outside sources is poorly/not cited. Citation format is incorrect. Number of sources is much less than expected.	3
Unacceptable/missing.	0

Symposium Presentation

Same as for 2000-level (see above).

Peer Evaluation / Self-reflection / Supervisor Grade (All levels)

Description	Points
Communication (25%)	
Provides many ideas on the topic, listens very carefully to others, provides constructive feedback and uses respectful and appropriate language.	25
Provided ideas on the topic, listens carefully, provides feedback and uses respectful and appropriate language.	21.25
Occasionally provided ideas, or listened to others' ideas, provided limited feedback, or generally used appropriate language.	17.5
Provides insufficient ideas, some difficulties with listening to other ideas, provides limited feedback, difficulties with appropriate language.	13.75
No ideas provided, no listening, not providing feedback, no use of appropriate language.	7.5
No participation.	0
Participation & Engagement (30%)	
Excellent contribution in the meetings by active participation. Excellent contribution for the project outcomes. Brings a positive attitude and helps others constructively in participating in the project. Very motivated.	30
Participates actively in the meetings. Does a good job in contributing to the success of the project outcomes. Generally a positive attitude and motivated	25.5
Occasionally participates in meetings, contributes somewhat to project outcomes. Little self-motivation but can be directed by others to move project forward.	21
Limited participation in meetings. Insufficient motivation to accomplish or provide input for the project outcomes. Generally unmotivated.	16.5
No participation in meetings and very limited contribution to the project outcomes. No motivation.	9
No participation.	0
Responsibility & Quality of work (30%)	
Excellent quality of work in poster or presentation design with all deadlines met. Provides constructive and high quality feedback to others in writing, poster design, and presenting. Takes feedback from others carefully into account, and takes accountability for assigned tasks.	30
Good quality of work on all outcomes of the project, with most deadlines met. Some work is done lastminute. Feedback is constructive and carefully takes feedback from others into account. Takes accountability for assigned tasks.	25.5
Quality of work has room for improvement, feedback to others is limited. Generally accepts feedback or accountability if pressed. Misses some deadlines and does not inform others.	21
Quality of work is unacceptable and requires others to fix. Provides very limited feedback to others and has difficulties incorporating feedback from others. Misses many deadlines and takes little accountability for assigned tasks.	16.5
No work done during the project, no accountability for assigned tasks or missing work.	9
No participation.	0
Solution-orientation (15%)	
Oriented towards best solutions when problems arise in project outcomes and group processes. Very open to others' solutions.	15
Oriented towards good solutions when problems arise in project outcomes and group processes. Open to others' solutions.	12.75
Somewhat oriented toward solutions when problems arise project outcomes and group processes. Not very open to others' solutions.	10.5
Limited orientation towards providing solutions for problems at hand in project outcomes and group processes. Not open to others' solutions.	8.25
Provides no solutions to any difficulties encountered during the project.	4.5
No participation.	0

INTENDED LEARNING OUTCOMES (ILOs)

1000-level

- Present outcomes in form of poster
- Learn how set research goals and how to formulate a hypothesis
- Present elements of a full research report (Intro-M&M-Results-Discussion) in a poster format

- Write a scientific abstract
- Learn how to define boundaries of research project
- Connect research plan to literature
- Understand how to plan a simple, pre-protocolised research project/ability to manage a project in all its forms (e.g. use of resources, recording of data, time management)
- Apply data-presentation skills learned in CORE (graphing etc.)
- Work as a member of a diverse, multidisciplinary research team
- Learn how to give and receive feedback on own performance
- Ability to interact and communicate with other people involved in the project as well as with supervisors and researchers etc.
- Run a simple, pre-protocolised experiment
- Trouble-shoot problems in the lab
- Ability to work in a safe manner, be familiar with health and safety regulations in place
- Ability to plan the research realistically (manage expectations)
- Learning to work independently
- Acquire skills related to particular area of the natural sciences
- Be aware of the ethical issues surrounding the project (e.g. animal use, plagiarism, data massage, permits, etc.)
- Data quality (how to generate data, how to store it, where to store it, ownership, etc.)

2000-level

- Every 1000-level ILO
- Present research outcomes as an 11-13 minute talk, and answer questions for remaining time (20 minutes total)
- Critically reflect on peer reviewed sources and their relevance for research projects
- Develop and write clear, coherent, and concise Methods and Results sections for a research paper
- Foresee future problems, needs and changes
- Ability to work in a safe manner, be familiar with health and safety regulations in place
- Ability to plan the research coherently and realistically
- Able to work relatively independently and learn how to take initiative

3000-level

- Every 1000- and 2000-level ILO
- Anticipate future problems, needs and changes
- Write a complete research paper that presents a scientific project
- Come up with creative solutions to solve research problems
- Ability to plan the research coherently, flexibly, and realistically
- Show high level of independence and initiative
- Take bold actions by venturing into unknown areas of science