

# Internship Rubrics Molecular Sciences

## For supervisors

Rubrics are meant as a tool to guide objective and uniform grading within and between departments. An additional advantage of the rubric method is that it will show students what is expected of them at the start of the internship, as well as provide them with some concrete feedback on what to improve at the end of it. To achieve these goals subjective wordings are avoided as much as possible.

Three rubrics have been developed to assist in grading of a student's general performance, report and presentation, and each rubric contains a set of competences derived from the internship learning goals. For each competence you will have to decide at what level the student performs, guided by the criteria given within each of the columns. Suggested grades will follow from these documents using a formula, though there will be some room for some substantiated adjustment, as internships do not all have the same accents or focus. As a rule of thumb, the overall mark can be adjusted by subtracting or adding up to one point and providing a justification for doing so.

Besides a full, unabridged version of each rubric, we have prepared a shorter, abridged version, to make grading using rubrics more practical for supervisors who have experience with these rubrics. We strongly recommend using the extended, unabridged rubric the first couple of times, and as a reference if a full explanation is desired, because the descriptions are more complete in the extended rubric.

As the rubric is meant to give students clearer expectations and some more insight into their performance, we ask you to introduce them to it at the start of the internship and make it part of their mid-term evaluations. While rubrics might seem elaborate when first starting their use, we hope the abridged versions will help you navigate them. When you are familiar with their content the rubric should become a convenient way to quickly give a lot of (basic) feedback to students.

These rubrics are a first trial version, and we strongly encourage you to let us know if any of the criteria given in the rubric are lacking, misguided or do not match your own expectations of students. Your input can be sent to [e.spruijt@science.ru.nl](mailto:e.spruijt@science.ru.nl). You can direct any questions surrounding the rubrics to the same e-mail address.

## For students

Rubrics are meant as a tool to guide objective and uniform grading within and between departments. For each competence your level of performance will be judged using the criteria given within each of the columns. One of the goals of the rubric is to give you some more understanding of the expectations placed upon you as well as giving you a better indication of where you are excelling/lacking in your performance. As it will serve as guide for your midterm and final evaluation, it's good to take note of the rubric at the start of your internship. Suggested grades will follow from these documents using a formula, though there will be some room for some substantiated adjustment, as internships do not all have the same accents or focus, and they cannot all be captured in the same formula.

It's important to realise that you'll be judged on your development and on the ways in which you will undertake your research during your internships, not the results of your work. Therefore, you should *not* interpret criteria stating that your work should be of publishable quality as an expectation that your results should be publishable: that is not something you can ever fully control. Such criteria mean that in everything you can control (text, figures, layout, literature research) your work approaches the level of that found in published works.

It's also important to realise these are end terms. It's good to be aware of the terms which will be used in your final assessment, but there is no expectation you fulfil these terms from the start of your internship; there is a learning curve.

## General Performance

	Insufficient	Sufficient	Good	Excellent
<b>1) Knowledge and understanding</b>				
<b>a. Knowledge</b>	Not read all recommended material. Unable to summarize literature or justify choices.	Read recommended material... Able to summarize literature...	... and additional sources for orientation... ... and defend/justify literature choices.	... and for problem solving during research. ... and actively shared relevant findings/sources.
<b>b. Understanding</b>	Misunderstanding of project goal. No partaking in discussions.	Understanding of project goal and challenges... Passive in discussions: understanding shown, no suggestions given for own or other projects.	... and milestones... Contributed to discussions: full understanding shown, some suggestions given.	... and main challenges. Actively contributed to discussions: full understanding shown, useful suggestions given.
<b>2) Applying knowledge and understanding</b>				
<b>a. Lab skills</b>	Unable to use techniques/models unsupervised. Worked unsafe, unclean and/or unstructured.	Able to use techniques/models after instruction... Worked safely and tidy...	... and modify/optimize protocols... ... and accurately...	... and develop new techniques/models. ... and was active in lab maintenance.
<b>b. Organisation (Time management)</b>	Time-inefficient, unaware of time management. Frequent unnecessary delays/repeats.	Used work days efficiently... Good short-term (week-base) planning...	... without losing oversight combining steps... ... and long-term (month-base) planning...	... and easily adjusted planning when needed. ... never lost oversight of project status/progress.
<b>c. Research design</b>	Heavily reliant on supervisor, frequent major mistakes.	Occasional correction of mistakes by supervisor. Attention to details of experiments...	Mainly tweaks by supervisor. ... aware of need for consistency...	Supervision only for overall strategy. ... and ensured comparisons are possible.
<b>3) Making judgements</b>				
<b>a. Critical reflection and progress control</b>	No reflection/reorientation, unrealistic ideas about project status, unclear research focus.	Reflection/reorientation realistic... Positive results often unquestioned... (Fairly) realistic idea about project status...	... weaknesses identified... ... also positive results questioned... ... and aware of current focus/bottleneck...	... and implications of weaknesses addressed. ... and relevant controls for confirmation done. ... and able to outline future steps.
<b>b. Initiative and creativity</b>	No initiative, direct instructions needed. No solutions offered.	Showed some initiative, much help needed. Limited creativity, solutions at times unrealistic.	Showed initiative, little help needed. Solutions often realistic, sometimes creative.	Took ownership of project. Solutions realistic and creative.
<b>4) Lifelong learning skills</b>				
<b>a. Involvement, independence and perseverance</b>	Project seen as assignment. Lack of commitment. Very sensitive to setbacks.	Some intrinsic motivation Progress relied mostly on supervisor... Able to overcome minor setbacks...	Intrinsically motivated ... worked towards independence... ... and larger setbacks...	... and shared motivation with others. ... resulting in full independence at the end. ... and focussed on longevity of project.
<b>b. Reflection and handling of feedback</b>	Difficulties identifying own strengths/weaknesses. Feedback often ignored.	Able to identify own strengths/weaknesses. Feedback was often considered.	... and aware of strengths/weaknesses... Feedback was always considered.	... and able to utilize feedback to improve them ... and actively sought.
<b>5) Communication</b>				
<b>a. Meetings and targets/deadlines</b>	Communication lacking, even when urged. Lacking preparations for meetings. No targets set by student, even when asked.	Communication often initiated by supervisor. Prepared for meetings... Targets were communicated by student...	Communication often initiated by student. ... was clear and to the point, but lacked jargon. ... and targets/deadlines were met...	Communication initiated by student. ... knew jargon, focused on mutual understanding. ... and were set with consideration of others.
<b>b. Cooperation</b>	Difficulty sharing materials/space. Meetings regarded as task.	Mindful while sharing materials/space... Meetings used to ask for help...	... and actively discussed with colleagues. ... and discussing hypotheses.	... and actively helpful towards colleagues. ... and sharing new ideas/suggestions.
<b>c. Data management</b>	Data unstructured, student clarification needed. Lab journal incomplete, replication impossible.	Data structured... Lab journal only lacking small details.	... consistent and clear. Lab journal complete, main findings clear.	... and optimized for future users. ... and repetition by others directly possible.
<b>Comments:</b>				<b>Suggested grade:</b>

## Report

	Insufficient	Sufficient	Good	Excellent
<b>6) Report presentation</b>				
<b>a. Language, vocabulary and writing style</b>	>3 mistakes/page, hard to comprehend. Writing colloquial, too elaborate or unclear.	>1 mistake/page, grammar comprehensible. Writing mostly clear, few obvious colloquialisms...	<1 mistake/page, grammar smooth. ... scientific and to the point, no colloquialisms...	(Nearly) flawless. ... near level of academic paper.
<b>b. Layout visuals (figures, tables)</b>	Figures irrelevant, not self-explanatory. Layout inconsistent	Figure support text, not all self-explanatory... Layout (mostly) consistent.	... self-explanatory. ... and adapted to improve visibility/clarity...	Publishable figures, original illustrations. ... and appeal.
<b>7) Structuring</b>				
<b>a. Main sections</b>	Abstract, Experimental incomplete. Discussion missing or trivial. Conclusions partially unsubstantiated. Appendices irrelevant or under/overutilized.	Abstract, Experimental complete... Discussion shows strengths/weaknesses... Conclusion substantiated... Appendices mostly relevant...	... concise and clear... ... and explores implications... ... and reflects on goals. ... no misplaced information ...	... and appeal/allow easy replication. ... and reflects on literature/theory. Discussion and conclusion precise and concise. ... and used to improve readability of main text.
<b>b. Substructure and paragraphs</b>	Structuring at all levels (report sections, within sections and paragraphs) confusing or missing.	Sub-structuring of main sections clear, but at paragraph level at times confusing or missing.	Sub-structuring clear and focussed. Most paragraphs focussed.	... some of publishable quality. ... and logically organized.

8) Critical thinking/evaluation				
a. Motivation	Central question/problem superficial...	... introduced and relevance mentioned...	... and justified by literary context...	... and impact/implications discussed.
b. Reflection on literature	All literature taken as fact.	Validity of literature mostly judged by source rather than content.	Findings conflicting with literature discussed.	Validity of literature evaluated by comparing alternative/contrasting sources.
c. Justification of research design	No clear overview of general strategy. Specific methods not justified.	General strategy superficially explained. Experimental methods justified...	General strategy clearly explained... ... also analysis methods discussed...	... and supported with literature. ... and justified / supported with literature.
d. Reflection on own results	Results merely described. Methods never evaluated/questioned. Reflection often biased by expected outcome.	Most results interpreted and connected... Methods examined when results unexpected,... Reflection at times biased.	... and implications analysed... ... all methods examined... Reflection unbiased...	... and developed into overall theory. ... and benchmarked/justified. ... and thorough.
9) Argumentation				
a. Substantiation	Literature from supervisor, key refs. missing. Uncertainties/limitations in data not considered. No control experiments and benchmarking.	Most cited literature relevant... Claims supported by literature... Few control experiments and benchmarking.	... and used to support/defend arguments. ... taking differences in method into account... Key control experiments/benchmarking shown.	... and to illustrate alternatives. ... as well as data limitations. Full control experiments/benchmarking shown.
b. Coherency of narrative/story	No clear line of argumentation from introduction to results/discussion and conclusions. Main achievements not emphasized.	Mostly clear line of argumentation. Some side steps and contractions. Main achievements emphasized, outlook given...	Clear line of argumentation, focused... Report internally consistent... ... and alternative theories explored...	... and compelling, suitable for a publication. ... and coherent. ... and discussed. Outlook concrete.
Comments:				Suggested grade:

## Presentation

	Insufficient	Sufficient	Good	Excellent
10) Presenter				
a. Verbal	Unpleasant pace, long pauses without purpose, limited vocabulary, or unclear pronunciation.	Mostly pleasant pace, some longed pauses. Broad vocabulary and clear pronunciation.	... pauses serve purpose. ... near-fluent language...	... well-chosen pauses. ... fluent language.
b. Non-verbal	Highly insecure, distracting from presentation. Little use of proper timing, intonation, etc.	Moderately insecure, but not distracting. Variations in timing, intonation, etc...	Insecurity/stress hardly noticeable. ... adding value to talk...	Confident and relaxed, able to guide audience. ... and making it natural and captivating.
11) Support				
a. Layout visuals (figures, tables) and slides	Slides cluttered and unstructured. Figures irrelevant or not self-explanatory. Layout inconsistent.	Slides clear, sometimes poorly structured... Figures support talk, not self-explanatory... Layout (mostly) consistent...	... structure supports talk... ... self-explanatory. ... and adapted to improve visibility/clarity...	... and appeals. Conference quality figures, original illustrations. ... and appeal.
b. Text slides	Regular mistakes in spelling and/or grammar. Text distracting: over/underused.	Few mistakes in spelling and grammar. Text occasionally excessive or lacking.	(Almost) no spelling and grammar mistakes. Text used conservatively, yet clear...	(Nearly) flawless. ... and brings out main message.
c. Structure of presentation	Overall order confusing. Information density varies greatly.	Overall order logical, but not emphasized... Information density occasionally incorrect.	... attention paid to transitions... Information density appropriate...	... natural transitions, suitable for conference. ... and adapted to audience.
12) Critical thinking/evaluation				
a. Motivation	Central question/problem superficial...	... introduced and relevance mentioned...	... and justified by literary context...	... and impact/implications discussed.
b. Justification of research design	No clear overview of general strategy. Specific methods not justified.	General strategy superficially explained. Experimental methods justified...	General strategy clearly explained... ... also analysis methods discussed...	... and supported with literature. ... and justified / supported with literature.
c. Reflection on own results	Results merely described. Methods never evaluated/questioned. Reflection often biased by expected outcome.	Most results interpreted and connected... Methods examined when results unexpected... Reflection at times biased.	... and implications analysed... ... all methods examined... Reflection unbiased...	... and developed into overall theory. ... and benchmarked/justified. ... and thorough.
13) Argumentation				
a. Coherency of narrative/story	No clear line of argumentation from introduction, to results/discussion and conclusions. Story too elaborate, unadjusted to audience.	Mostly clear line of argumentation Some side step or contractions. Story partly made concise.	Clear line of argumentation, focused... Main achievements emphasized... Story made concise through clear choices...	... and compelling, suitable for a conference. ... and concrete outlook given. ... and adjusted to audience.
b. Defence during questions	Answers to even obvious questions inaccurate. Uncertainties or considerations not discussed.	Answers to obvious questions mostly accurate... Uncertainties/considerations hardly discussed.	... and to the point, showing grasp of subject. Relevant uncertainties discussed.	All answers/considerations accurate, complete and to the point, showing mastering of subject.
Comments:				Suggested grade:

General comments:	Suggested overall grade:
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