

## Homework Rubric<sup>1</sup>

	Outstanding (A+) <b>5</b>	Good (A) <b>4</b>	Acceptable (B) <b>3</b>	Needs work (C) <b>2</b>	Needs a lot of work (F) <b>1</b>
<i>Curiosity</i>	<p>Intense exploration and evidence of many trials and failures. You have looked at the data in many different ways before coming to your final answer.</p> <p>You have gone beyond what was asked: additional research from other sources used to help understand/explain findings.</p> <p>Your explanation and presentation is creative.</p>	<p>Plenty of exploration and investigation. Some additional research helps explain findings, and some of your ideas are creatively presented and explained.</p>	<p>Some exploration, but little evidence that you have selected the best of many ideas. Little or no additional research.</p>	<p>You have done the bare minimum that was asked. There is no evidence to suggest that you tried multiple approaches (tables, graphics, or models) before coming to your final conclusion.</p>	<p>Questions are simple, and there is no evidence of exploration. You have not come up with your own questions of the data, but relied on those we discussed in class</p>
<i>Scepticism</i>	<p>You suggest multiple explanations for a given finding, and use multiple tools to explore surprising results. You present one or two as the most plausible, but have allowed for the possibility that you are wrong.</p> <p>You are self-critical: What did I do well? What did I do poorly? What have I missed? How could I do better next time? You identify flaws in methodology and provide suggestions as to how they could be remedied.</p> <p>You don't blindly accept perceived wisdom, but challenge preconceived notions and come up with interesting new ways of testing them.</p>	<p>You are sceptical and selfcritical, but not consistently. There is some critical analysis, and some use of multiple techniques to answer the same question.</p>	<p>You haven't blinded accepted findings, but you haven't come up with many ways to check your results either.</p> <p>There is little self-criticism and little evidence to suggest you have thought about how to do better in the future.</p>	<p>Some findings accepted without question. Selfcriticism weak.</p>	<p>Findings accepted uncritically. Leaps of logic without justification.</p> <p>You have not thought about how to do better next time.</p>
<i>Organization</i>	<p>Findings very well organized. Clear headings demarcate separate sections. Excellent flow from one section to the next. The paper is easy to scan.</p> <p>An abstract or summary at the start of the paper briefly summarises your approach and findings. Conclusions at the end present further questions and ways to investigate more.</p> <p>Tables and graphics carefully tuned and placed for desired purpose.</p>	<p>Findings well organized and sections clearly separated, but flow is lacking. Each section has clear purpose.</p> <p>Tables and graphics clear and well chosen</p>	<p>Generally well organized, but some sections muddled.</p> <p>Tables or graphics appropriate, but some are poorly presented – too many decimal places, poorly chosen aspect ratio etc.</p>	<p>Sections unclear and no attempt to flow from one topic to the next.</p> <p>Graphics and tables poorly chosen to support questions. Some have fundamental flaws.</p>	<p>It is hard to read your paper. There are no headings, figures are far away from where they are referenced in the text. There is no summary or conclusion.</p>

<sup>1</sup><http://had.co.nz/stat480/homework/homework-rubric.pdf>

## Code Rubric<sup>2</sup>

	Outstanding (A+) <b>5</b>	Good (A) <b>4</b>	Acceptable (A-/B+) <b>3</b>	Needs work (B/C) <b>2</b>	Inadequate (F) <b>1</b>
<i>Planning</i>	<p>Introductory comment describes overall strategy and gives evidence of preliminary planning.</p> <p>Thoughtful problem decomposition breaks the problem into independent pieces that can be solved easily.</p>	<p>Evidence of planning before coding, but some flaws in overall strategy.</p>	<p>More planning needed: overall strategy ok, but have missed some obvious ways of making the code simpler.</p>	<p>It all hangs together, but planning was absent or rushed.</p>	<p>No evidence of planning. Strategy deeply flawed.</p>
<i>Execution</i>	<p>Mastery of R vocabulary means that the absolute minimum amount of code is used to get the job done.</p> <p>Code free from duplication. Each function encapsulates a single task, and repeated tasks are performed by functions, not copy and paste.</p>	<p>Workable, but not elegant.</p> <p>Common programming idioms used to reduce code. For example: character subsetting instead of complicated if statements; vectorized functions instead of for-loops.</p>			<p>Functions used inappropriately, or existing functions reinvented.</p> <p>Extensive use of copy and paste.</p>
<i>Clarity</i>	<p>Code is a pleasure to read, and easy to understand. Code and comments form part of a seamless whole.</p>	<p>Comments used to discuss the why, and not how of code; to provide insight into complicated algorithms; and to indicate purpose of function (if not obvious from its name). Comment headings used to separate important sections of the code.</p> <p>Variables, functions and arguments named concisely but descriptively.</p>	<p>Generally easy to read, but some comments used inappropriately: either too many, or too few. Some variable names confusing.</p>	<p>Hard to understand. Poor choice of names and comments do not generally aid understanding.</p>	<p>Cannot understand code. If it works, I have no idea why.</p>

One point will be deducted for each of the following style guide violations:  
file naming, identifier naming, spacing, curly braces, indentation, line length, assignment.

<sup>2</sup><http://stat405.had.co.nz/assessment/code-rubric.pdf>

### Project Rubric<sup>3</sup>

	Outstanding (A+)	Good (A)	Acceptable (A-/B+)	Needs work (B/C)	Inadequate (F)
<b>Introduction</b>	<b>10</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>2</b>
	Clearly and concisely describes the data, and why it is of interest. Sets up a clear roadmap for the rest of the paper.	Good introduction to data, but roadmap for rest of paper lacking.	Introduction and roadmap unclear and missing important details.	Rote description of data. No context provided for data or questions.	Fails to introduce data and questions of interest.
<b>Questions and findings</b> (see homework rubric)					
<i>Curiosity</i>	<b>20</b>	<b>16</b>	<b>12</b>	<b>8</b>	<b>4</b>
<i>Scepticism</i>	<b>20</b>	<b>16</b>	<b>12</b>	<b>8</b>	<b>4</b>
<i>Organization</i>	<b>20</b>	<b>16</b>	<b>12</b>	<b>8</b>	<b>4</b>
<b>Conclusion</b>	<b>10</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>2</b>
	Conclusions follows logically from results and findings. Includes interesting further questions and ideas for future research.	Good summary, but doesn't pull pieces together into cohesive whole. Interesting ideas for future research.	Summary patchy, but some attempt at synthesis and development of ideas for future work.	Repeats findings with no synthesis. No proposals for future work.	Fails to summarise findings or ask more questions.
<b>Presentation</b>					
<i>Text</i>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
	English is polished, concise and clear. No grammar or spelling mistakes.	Clear and concise, but not elegant. A few spelling and grammatical errors.	Readable, but excessively verbose, or lacking in detail. A number of errors in text.	Marginally readable. Many errors.	Barely readable. Many spelling and grammar errors. No evidence of proof reading.
<i>Graphs</i>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
	Graphs carefully tuned for desired purpose. Evidence that many graphs were created before choosing one for presentation. Each graph illustrates one point.	Graphs well chosen, but a few have minor problems: inappropriate aspect ratios, poor labels, poor quality when printed.	Most graphs appropriate. Many graphs have minor problems.	Graphs poorly chosen to support questions. Some redundant or fundamentally flawed.	Graphs do not support questions and findings. Major presentation problems.
<i>Tables</i>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
	All tables carefully constructed to make it easy to perform important comparisons. Careful styling highlights important features.	Tables generally well constructed, but some have minor flaws: too many d.p, tables too large.	Most tables appropriate. Many tables have minor problems.	Tables badly arranged to support comparisons of interest. Too many, or inconsistent, decimal places.	Tables do no support questions and findings. Major display problems.
<b>Code</b> (see code rubric)	<b>25</b>	<b>20</b>	<b>15</b>	<b>10</b>	<b>5</b>

#### Comments

<sup>3</sup><http://had.co.nz/stat480/homework/project-rubric.pdf>, <http://stat405.had.co.nz/assessment/project-rubric.pdf>

## Poster Rubric<sup>4</sup>

	Outstanding (A+) 5	(A) 4	Acceptable (B) 3	(C) 2	Inadequate (F) 1
<i>Data</i>	Data source clearly described. Variables used in analysis described individually along with some context to help understand them (units etc).		Some confusion regarding the data source or variable definitions.		Data not described, misrepresented or misunderstood.
<i>Analysis</i>	Data analysis tackles interesting and well-motivated questions, focussing on depth, not breadth. Conclusions are backed up by multiple lines of evidence. (If not shown on plot, obvious when questioned.)		Questions are bit mixed: some interesting, others not so much. Some statements unsupported by data.		Questions are uninteresting or poorly motivated. Many hypotheses unsupported by the data.
<i>Graphics</i>	Graphics are appropriately chosen to answer the questions asked. There is clear evidence that many iterations were used to get to the final form and once there a lot of effort was used to polish an exploratory graphics into an artefact of communication. Statistical summaries are used to augment the raw data, not replace it. No overplotting.		Incomplete iteration or polishing. Quality inconsistent and some plots either display too much data or too little.		Graphics don't answer relevant questions and are hard to read. Plots feature overplotting are over summarized.
<i>Organization</i>	Clear flow from introduction to findings to conclusions. Most important findings are eye-catching. Less important findings are less prominent. Least important findings are omitted. Evidence of rigorous editing: only the best plots made it on to the poster.		Flow pretty good, but not always obvious where to look next. Importance of findings and visual importance not always well matched.		Confusing and hard to follow; no obvious flow. Importance of findings not obvious from presentation.
<i>Appearance</i>	Title readable from across the room, headings readable from nearby, body text and graph labels are readable from arms length. Whitespace used appropriately to separate content and giving breathing room. Colors support content, not distract from it. Graphics are high quality (not blurred or jagged).		Text is readable, but there are other small problems (graph quality, use of whitespace, distracting colors)		Text hard to read, colors jarring, no whitespace.
<i>Language</i>	Headings are concise but informative. Individual sections use short sentences or bullets to facilitate rapid scanning. No spelling or grammatical errors. Writing is clear and concise.		Text either a bit wordy or too brief. Not easy to scan.		Riddled with spelling and grammar errors. Excessively brief, or too much text to easily scan.
<i>Personal presentation</i>	Dressed professionally. Doesn't block poster. Available to answer questions without being overly annoying. Enthusiastic about all questions. Not afraid to say "I don't know".		Personal presentation good, but interaction with visitors not smooth.		Dressed poorly, uninterested in helping readers.

<sup>4</sup><http://stat405.had.co.nz/assessment/poster-rubric.pdf>

## Presentation Rubric<sup>5</sup>

### *Organization* (10)

- (2) appropriate amount of content for 5 minutes
- (2) flows smoothly from one point to the next
- (2) important points emphasized
- (4) well-organized

### *Delivery* (10)

- (2) enthusiastic
- (2) makes eye contact with audience
- (2) audible (and understandable) throughout room
- (2) audience feels involved in talk
- (2) rehearsed, but not memorized

### *Presentation* (10)

- (2) well integrated visual aids
- (2) pictures and graphics support, but don't overwhelm, story
- (2) graphics high quality and appropriate
- (2) slides are readable from back of room
- (2) free from spelling and grammatical errors

### *Length* (5)

- 5 = 4-6 minutes
- 3 = just over/under
- 1 = well over/under

### *Group coordination* (10)

- (2) first person introduces project, last person summarises finding and talks about future work
- (2) presentation flows smoothly from one person to the next
- (2) clearly well-rehearsed, but not stilted
- (2) consistent style throughout presentation
- (2) group supportive of members

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### *Participation* (20)

- attend every session and hand in sheet
- ask one interesting question for each group
- describe one good aspect of each project
- describe one aspect of each project that needs improvement

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<sup>5</sup><http://had.co.nz/stat480/homework/presentation-rubric.txt>