Rubric for Grading Final Projects

Final project reports will be graded based on the following rubric. Reports should be written in a professional manner following the rough outline given by the rubric. There is no minimum length requirement, but the report should be complete enough to satisfy the criteria given in this rubric. Typically, this will mean 2500 to 5000 words plus figures and references.

Category	Good	Acceptable	Poor	Score
Report document				
Introduction (4 pts)	Clearly states project and thesis. Sufficient background material and references given to demonstrate knowledge of topic, including relevant mathematics, algorithms, and computational methods. Structure of paper given. [4 pts]	Weak background info or project not clearly stated. Thesis weak or not given. Structure of paper not given. [2.5 pts]	Intro material does not very well support project thesis or the problem is not well motivated by background info. No clear thesis. No statement of paper structure. [1 pt]	
Methods (4 pts)	Sufficient info to plausibly replicate project with little further info needed. Discussion of what exactly was done is clear. Discussion of all parameters varied clear and their meaning given. Methods clearly appropriate to address project goals. [4 pts]	Lacking completeness in method description. Little discussion of detailed parameters varied. Unclear if methods appropriate for problem. [2.5 pts]	Insufficient info to even attempt to replicate results. Methods not appropriate for problem as stated. [1 pt]	
Results (4 pts)	Results clearly stated. Reference back to project goals given in intro and results presented within that context. Implications of results discussed and explained. [4 pts]	Presentation of results too terse without clearly tying back to project thesis. Unclear if results fully address project goals. Explanation of results weak. [2 pts]	Results unclear. Not tied back to project goals very well. [0 pt]	

Category	Good	Acceptable	Poor	Score
Conclusions (4 pts)	Project goals restated as well as project goals and methods. Overview of results repeated and put into broader context. Implications of work given and future directions suggested. [4 pts]	Problem and methods restated, but broader implications lacking. [2.5 pts]	Lacking sufficient reiteration of either research question or results. Lack of bigger picture discussion of results. [1 pt]	
Figures (3 pts)	Figures are clear and well made. Are useful in showing results. Are supporting to the conclusions drawn about results. [3 pts]	Figures demonstrate results well, but perhaps need work in clarity or could be improved to better support conclusions. [2 pts]	Figures are unclear or do not demonstrate important aspects of the work or results. Are not supportive to conclusions drawn. [1 pts]	
References (2 pts)	Adequate and appropriate references given throughout, particularly in intro. Sufficiently broad and complete (the exact number will vary a lot!). [2 pts]	A sufficient number of references given, but could be improved by a deeper literature review. [1 pt]	Insufficient or inappropriate references. Work not well-supported by previous works. [0 pts]	
Specific project requirements				
At least two parallel paradigms (4 pts)	Effective and creative use of multiple paradigms to address problem with good results. [4 pts]	Mostly correct implementation of two programming models with some issues or mistakes that are addressed in the text. [2 pts]	Lack of implementation of two models or discussion of this in text. [0 pt]	
Different parallelization strategies [3 pts]	Thorough exploration or use of different strategies. [3 pts]	Adequate discussion of how different strategies could be used. [2 pts]	Mention of different strategies with now substantial discussion. [1 pt]	

Category	Good	Acceptable	Poor	Score
Verification test [3 pts]	Implementation and use of a suitable test to verify that the parallel solution is "correct" as compared to the reference serial case, or some other suitable reference. [3 pts]	Use of a verification test but some issues such as applicable or usefulness in testing parallel cases. [2 pts]	Use of an ineffective test. [1 pt]	
Scaling/performance studies (3 pts)	Scaling of performance of code thoroughly investigated, including weak, strong, and thread-to-thread scaling, as appropriate. [3 pts]	Satisfactory scaling study but lack in some detail [2 pts]	Scaling study inaccurate or reflecting some misconceptions. [1 pt]	
Load balancing (2 pts)	Detailed exploration of load balancing in specific problem. [2 pts]	Discussed but not thoroughly explored [1 pt]	Lack of discussion [0 pts]	
Memory usage (2 pts)	Thorough discussion of memory efficiency and "scaling" in parallel implementation [2 pts]	Discussed but lacking in some detail or correctness. [1 pt]	Not discussed. [0 pts]	
Use of HDF5 for I/O (2 pts)	Effective and correct use of HDF5 for I/O ***or*** a complete and convincing discussion of why the particular problem did not require I/O [2 pts]	Incorrect use of HDF5 or unconvincing argument for not using HDF5 [1 pt]	No use or discussion of I/O and HDF5 [0 pts]	
Total (40 pts):				