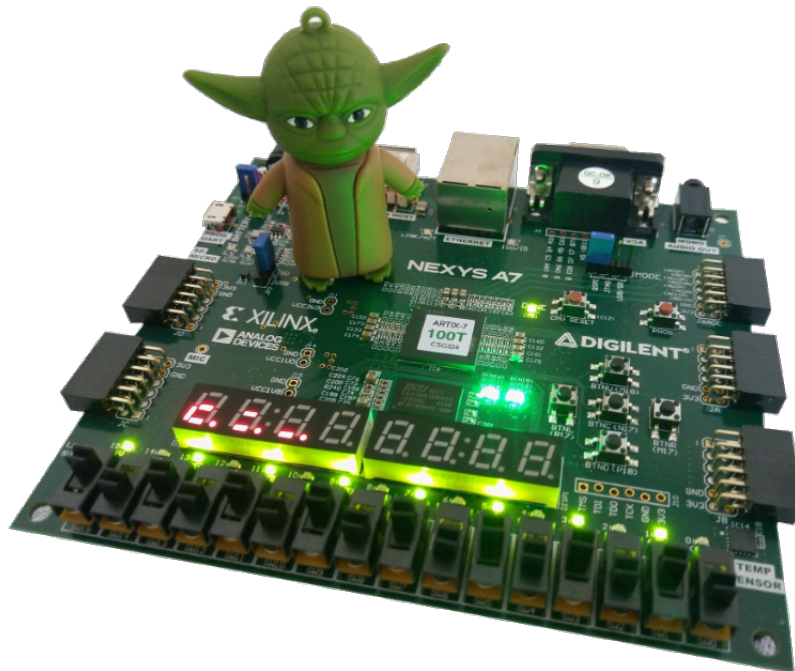


UNIVERSITY OF CAPE TOWN



EEE4120F

HIGH PERFORMANCE EMBEDDED SYSTEMS

YODA Rubrics

REVISED MARKING SCHEMA (9-May-2024)

1 Milestones

The project is broken down into milestones, to better guide you through the project requirements. The following milestones are included in this project:

1. MS 0 - Team update
Details of who is in your team, and the project you've selected.
2. MS 1 - Proposal Blog
Consists of creating a blog outline, over viewing how you will approach the given topic.
3. MS 2 - Status update
Consists of an in-person meeting and a submission to Vula. The purpose of this meeting is to show progress of your implementation.
4. MS 3 - Draft paper
Not for marks, but it is recommended that by this stage you have started working on the final submission paper, as it will assist you with time management and the conference presentation.
5. ~~MS 4 - Demo or Acceptance Test~~
~~A short demonstration of your system.~~ The acceptance test aspect moved to a section of the report
6. MS 5 - Final paper and code submission
The final hand in.

NB: Please check mark allocation on Amthuba for Milestone Marks Weighting as these may have changed from when this document was prepared,

1.1 Milestone 0: Group Formation

To complete this milestone, your team leader will need to fill out a Google Form, which will be sent to you closer to the due date. On this form you will need to submit your team members and topic selection.

1.2 Milestone 1: Blog Proposal

For this milestone you will have to create a basic blog outline. The purpose of this milestone is to identify the key aspects of the project and what will be involved in the creation of your accelerator. Please refer to the rubric below on what you should include in the blog.

Table I: Blog Proposal Rubric

Marking Category	Description	Marks
Problem Description	Elaborate on what the YODA project entails and descriptions on the algorithms being implemented	10
Prototype Specification	Information on how you plan you create the accelerator and any specifications pertaining to this	10
Project Goals	The goals and aim of your accelerator.	10
References	Reliable and useful references	5
Total		35

1.3 Milestone 2: Status Update

You need to update your assigned team manager, i.e. the tutor or lecture to whom you have been assigned to report on your progress. This needs to be done in a short in-person meeting (or via online meeting), possibly with a follow-up where you post the substantiating evidence of your status report on Vula.

NB: upload supporting document, must provide:

1. Design document
 - (a) Block Diagram
 - (b) Schematic
 - (c) Any alternate diagram such as statechart
2. Snippets of Code
3. Some initial simulation (if not real prototyping) results

You can add other things you think would demonstrate good progress and you can use your blog in the status update if it will help. The purpose of this milestone is to show progress

that you are making on the YODA project. Please meet with your team manager or email your manager to provide an update of your progress. Mention at least 3x things that you have already done on the project (in terms of design work), 3x things that you are planning to do over the next couple of days (also design/implementation) and show some evidence of work done (if in person show on a PC or by email you can send screenshots of attached code files or figures). We will also award a quality of the work, for instance if your code is well structure and commented or your schematics well labelled you will get a higher value for the quality mark.

This is for marks.

Table II: Status Update

Description	Marks
Overview of progress	10
3x Things Done	5
3x Things to be done	5
Design document or explanation of your code/design so far	10
Evidence of work done (e.g. code snippet)	10
Overall quality	10
Total	50

1.4 Milestone 3: Draft Paper

For this milestone, you must submit a draft paper (in the IEEE conference format) to Vula. This is to show that you are making progress. The draft report should include all headings, sub-headings, key points for each section and some rough information regarding the design.

~~1.5 Milestone 4: Demonstration~~

MS#4 integrated into MS#5 due to due date extensions

~~The demonstration portion of the YODA project is a vital aspect of the project, as it provides the perfect opportunity to show how your accelerator works. Your group will have to give an in-person (or online) demonstration of your system to a Tutor, TA or Lecturer.~~

Table III: FPGA Demo Rubric

Description	Marks
Gold Standard Output	10
Gold Standard Explanation	5
FPGA Output	10
FPGA Explanation	5
Appropriate Speedup	5
Entire System Explanation	10
Demo Organization	5
Total	50

1.6 Milestone 5: Final Report and Code

This is the submission for the final YODA report. The YODA final submission counts for 45% of the project. The report counts 40% and the code/design repository counts 5%. Each category will be marked along the guidelines of the marking rubric.

Table IV: Final Report **Revised to be out of 130 marks**

Section	Description	Marks
Abstract	About 250 words, giving an overview of your project.	8
Introduction	A nice lead-in that states objectives and motivations clearly.	10
Background	Points supporting/leading to the motivation, some mention of literature or sources of information inspiration (textbooks and online repositories)	5
Methodology	How you proposed to go about building the system, some of which should have managed to do, but much of this may be hypothetical/recommended (i.e. if there was time, describe what you would do). Discuss how you would measure the results, and what measurements/metrics you would record, so there is a scientific grounding to your study.	10
Design	Elaborate on the design of the accelerator system and give thoughts on connecting up to a host. (note: methodology and design are not the same thing)	20
Proposed Development Strategy	This can be conceptual/something of a thought experiment. Discuss a bit as to, if this was a commercial product, what sort of supporting tools and framework would be needed to facilitate application development using this accelerator.	5
Planned Experimentation	Elaborating on the methodology, describe the experimental setup, how the experiments were implemented, e.g. commands performed. Could explain how golden measure would be used to compare accuracy of prototyped system (note results section shows the actual results, this just explains the experiments in more detail)	5
Results	Show your results (even if it's only golden measure testing). If you don't manage to get much results then add discussion about what would be anticipated were there time to do it (to run the proposed experiments discussed in the previous section), and if there is no time to complete experiments then provide model graphs providing an example of what type of performance / output / other results would be expected and an argument as to why you would expect these results.	15
Conclusion	Summarize the results collected. Were the objectives discussed in your design achieved? What else can be done to improve the system going forward?	10
References	References used in the report are from reputable sites/journal articles.	3
Code Repository Comments	Comments explaining the code in the git repository.	4
Code Repository Neat Code	Code is efficient and neatly coded up.	5
Total		100

Acceptance Testing (Alpha Testing) Process: (30 marks)

This section replaces the demo milestone. This needs to be a written and illustrated description documenting the process you used for doing an acceptance test of your system. You have a certain amount of flexibility in how to approach this, but the main thing is connecting with the standard principles of an acceptance test, although more for the 'alpha testing' aspect in which it is more tested in a safe/lab context and not necessarily by actual end users. Have a look over: <https://www.lambdatest.com/learning-hub/acceptance-testing> (Alpha Testing entry), but note that *the demo aspect is constrained*, don't spent too long on this. Around a page of text and images to show main parts of the testing discussed is sufficient for this section.