Checklist for Development and Report Writing

When you are doing the work, when you are writing and when you think you are finished with your work and the report, you should go through this checklist to see if everything is OK before you deliver. This checklist represents the minimum requirements for the work and the delivered documentation/report. If any of the items in the checklist are not OK, the work will automatically not be approved. In addition to the checklist, an overall assessment will be carried out to see if you have done enough to pass the assignment.

#	Item	OK
1	I have included a separate **Title page** with a Title and your Name. Typically, a Date is also appropriate to include.	
2	I have included a **Table of Contents** in my document.	
3	I have NOT included Page number on the Title page. I have never seen this in other documents, reports, or textbooks.	
4	I have included Page numbers in the rest of the report (typically centered in the footer). If you have an Introduction chapter, that is typically page 1, while pages before the Introduction chapter typically use i, ii, ..etc.	
5	If I have included an **Image** on the title page (which is optional), the image is relevant and in context of my work, not just a general image found on Internet. If you use images that is not yours, you need to have a reference!	
6	My **Headings/Chapters** are using **numbering**, e.g., "1 Heading1", "1.1 Heading2", etc. The **Introduction** chapter is always chapter 1.	
7	I have included a **System Sketch**. The System Sketch is a figure that gives the overview of what you have done, i.e., the "Big Picture". Make System Sketch in PowerPoint: https://youtu.be/9mmBXFOjV3s	
8	I have started each **Chapter** and **Subchapter** with a short introduction text before I present any Figures, Tables, a list of bullet points, etc.	
9	I have NOT used any **Figures**, **Tables** or directly copied **Equations** from the Assignment since I don't learn anything doing this. I have made my own Figure, Sketches, Tables, etc. where I show how I understands it and presenting my work (not others).	
10	I have **NOT** used the words like "**I**", "**My**" or "**We**" in the text, meaning I have NOT written like this "In **my** application **I** have implemented a PID controller using LabVIEW…", but I have written something like this "In the application a PID controller has been implemented using LabVIEW…".	
11	**Figure Captions**: For each **Figure** I have added a Figure number and Figure Title below the Figure, e.g., "Figure 2-3: Overview of Control System". It also looks better when the Figure is centered.	
12	**Referring to Figures in the Text**: For each **Figure** I have referred to that Figure in the text, e.g., "In Figure 2-3 we see the control system developed in this project. The control system consists of a PID controller…"	
13	For each **Table** I have added a Table number and Table title **ABOVE** the Table, e.g., "Table 3-4: PID Parameters for selected Tuning methods"	

14	For each **Table** I have referred to that Table in the text, e.g., "In Table 3-4 we see the PID parameters for the different tuning methods used in this project, these tuning methods…."	
15	The **Equations** are centered and have an Equation number (Note! The chapter number should be included as part of the equation number) that is right centered, e.g., $$y = ax + b \quad (2\text{-}1)$$ Equations in Microsoft Word: https://youtu.be/b9f2bb2yn1Y	
16	For each **Equation** I have referred to that Equation in the text, e.g., "From eq. (2-1) we see the linear relationship between the input signal and the output signal".	
17	I have NOT copied any **Equations** from the Assignments and passed them in as a Figure my report.	
18	I have NOT used multiplication sign "*" in equations (e.g., y=a*x + b). I don't use that when typing equations with pen and paper, so I don't need to use it in a report either. I have also never seen it in any equations in any textbook I have read. This looks better: $y = ax + b$ (no "*" is used)	
19	In equations I typically use letters and not "words", e.g., K_p for pump gain, NOT k_{pump} or something. Then, in the text below the formula/equation I explain what K_p is with a proper unit.	
20	In formulas and equations, I try to use upper case for constants (e.g. G or F) and lower case for variables (e.g., x, y, u) (but no rule without exception).	
21	I have **NOT** used words/sentences like "**I** am a **student**…", "In this **assignment we** shall…", "In **task** 4 **we** are supposed to do…"	
22	I have included **Units** in all my **plots/charts**, both on the x-axis and on the y-axis, this yields for plots/charts created in LabVIEW, C# but also for plots/charts created in Excel, etc. What would happen if an Engineer stopped care about units? If you build a bridge and do not care if you use 100 kg or 100 ton in your calculations?	
23	I have included **Units** in my **GUI**, e.g., for input fields for Ti or when presenting, e.g., a temperature value T=20°C What would happen if an Engineer stopped care about units? If you build a bridge and do not care if you use 100 kg or 100 ton in your calculations?	
24	I have included **Units** when presenting values and doing calculations inside the report/lab summary, e.g., $T_i = 20s$	
25	**Number of decimals**: I have NOT presented values from e.g., a temperature sensor with 4+ decimals in my GUI or inside the report since this makes no sense because a temperature sensor is not that accurate. I have checked the **datasheet** for the sensor I am using.	
26	My **GUI**s are well structured and intuitive, e.g., the "Stop/Exit" button is placed in the lower right corner, elements in the GUI are logical structured, etc. LabVIEW Guidelines: https://youtu.be/rpQUO5isCbE	
27	The **GUI screenshots** inside the report show some proper/realistic data. In that way it is much easier to understand/see the purpose with the GUI.	

28	The LabVIEW code flows from left to right, i.e., the LabVIEW code doesn't look like "**spaghetti**". LabVIEW Programming Guidelines: https://youtu.be/rpQUO5isCbE	
29	I think **LabVIEW State Machine** is a good method for structuring my code. It works for small applications as well. I have used it, or I will use it in the next assignment. LabVIEW State Machine video: https://youtu.be/AlDivLw0slo	
30	I have created and used **SubVIs** in my LabVIEW code, I have also created an "Icon" since it takes just a few seconds to make a simple icon just using words or letters like this:  and it makes it so much easier to maintain and understand the code.	
31	I am not using any "strong" **colors** except for e.g., alarm handling or other situations that require "strong" colors	
32	**Buttons**: Since the button has a text inside saying "Stop", I have hidden the button label "Stop Button" that is by default is placed above the button. 	
33	I have used **proper names and labeling** for my VIs (NOT like "Test1.vi", "Peters PID Controller.vi"), variables (NOT "Numeric Control" but e.g., "Temperature"), user interface objects (NOT "Waveform Chart" but e.g., "Temperature Chart"), etc.	
34	I have spelled **LabVIEW** correct, NOT "LABVIEW", Lab View", "Labview", etc. This yields also for other nouns, product name, corporate names, etc.	
35	**Discussions**: The results of my work are **Discussed**, e.g., "The Skogestad tuning gives better control performance than the Ziegler-Nichols method when used in the simulator…" and/or something like this: "The results from the simulations given in Table 3-4 shows that the control system works fine when applying a step response. The performance is also good when applying noise to the signal"	
36	I have seen the "**Big picture**", meaning I have not focused on unnecessary details or included very basic stuff, nor am I talking about "Task 1", "Task 2", etc.	
37	I have included a **Conclusion** since a (short) conclusion is always needed. The conclusion makes sense and provide useful information to the reader regarding the technical work that has been done. I have shortly and precisely summarized my results and drawn conclusions, I have NOT written how much I have learned, or saying things like "This lab assignment was fun", "This will be useful when I get a job", etc.	
38	**References** have been included since I use information from other sources than the assignment or information provided by the supervisor. In addition to the Reference list itself, I have inside the report where the source is used referred to the reference using a number, e.g., [2], e.g., "From [2] we know that there is a linear relationship between the voltage and the temperature value in degrees Celsius."	
39	I have read the entire report and I have found no obvious mistakes, **spelling mistakes**, etc.	

40	My **Attendance** and presence in the Laboratory are above the minimum requirements. I am aware of that I cannot do Laboratory Work without being present in the Laboratory room.	
41	**Note!** The text should primarily be **reflective** and not descriptive. The text should not merely describe what has been done, but also **why** and **how** and **what** the results are. **The outcome needs to be put into relevant context**.	
42	I have solved (or at least tried) the main parts of the assignment, and I have also addressed those in the report.	
43	I have also "**Added Value**" compared to the simplified examples given. This means I have done the "little extra" that makes my solution "stand out" and get a "personal" touch.	
44	I have a good **Report structure**. You should use the **IMRaD** structue. IMRaD is an acronym for **Introduction** – **Methods** – **Results** – and – **Discussions**. The IMRaD format is a way of structuring a scientific article, the chapters within may have different names.	
45	The complementary **Quiz** has been taken and the score was above the minimum level	
46	After I have generated the final **PDF** file, I have opened it and read through the entire text and have not been able to find obvious mistakes, spelling mistakes, etc. I have also checked that there are none "Reference not found…", etc.	

Resources:

Report:

Report Template and Guidelines: https://www.halvorsen.blog/documents/teaching/courses/industrialit/resources/Report%20Template%20and%20Guidlines.docx

Write Technical Reports in Microsoft Word: https://youtu.be/ao_eDJOEUkA

Make System Sketch in PowerPoint: https://youtu.be/9mmBXFOjV3s

Figures and Equations in Microsoft Word and PowerPoint: https://youtu.be/b9f2bb2yn1Y

Citation and Referencing with Microsoft Word: https://youtu.be/IgH7qmLa_L4

LabVIEW/GUI:

LabVIEW Programming Guidelines: https://youtu.be/rpQUO5isCbE

LabVIEW State Machine: https://youtu.be/-b9St8wNhpQ