GUIDELINES FOR TOPIC ANALYSIS AND SYNTHESIS

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1. MOTIVATION

The purpose of the topic analysis and synthesis is to instill, enhance, and/or validate the following skills, considered necessary in software engineering, in general, and software project management, in particular:

• Abstracting	• Diagramming
• Analyzing	• Finding
• Communicating	• Negotiating
• Critical Thinking	• Organizing
• Decision Making	• Writing

The aforementioned skills are aligned with the **Experimental improVEment of Learning software engINeering (EVELIN)**, the **Guide to the Project Management Body of Knowledge (PMBOK Guide)**, and the **Software Engineering Body of Skills (SWEBOS)**.

2. APPROACH

The students should expect a regular, nonlinear (**iterative and incremental**), approach towards the report.

For that, the evolution of the report must occur on a distributed **version control system** (VCS), such as **GitHub**. The **teaching assistants must be informed of the address** (URL) of the VCS no later than October 31, 2023. The report must also include such an address explicitly where all versions of the report are accessible.

3. CONTENT

The report must analyze, in-depth, the salient points raised by the description of the assigned topic.

The report must identify the issues, make plausible arguments assisting and annotating those issues, and provide authoritative references in **support of the description** of the assigned topic. For example, an argument is more likely to be plausible if it is based on technical grounds, not opinions.

The report could also include plausible arguments **against the description** of the assigned topic.

To strengthen abstract arguments, the report could provide **empirical evidence (statistics)** and/or **concrete examples**.

The report may include certain terms that may be uncommon. These terms should be **defined or otherwise elaborated** to support the exposition.

An excerpt is verbatim, or almost verbatim, text from an external source. The report must **not** have excerpts, from the assigned topic or elsewhere, exceeding 10% of the total length of the submitted report.

The students are encouraged to use any tools, including **generative artificial intelligence** tools, such as **ChatGPT**. The use of any tools must be cited by mentioning their names and URLs, and details of how the tools were used must be given. For example, in case of ChatGPT, the exact prompts could be included in an appendix.

The **authors of the report are responsible for everything** that is included in the report. In the end, the burden of proof is on the authors of the report, not on others, humans or machines. It is therefore crucial not to make claims that cannot be substantiated, and not to copy others' work regardless of whether it is cited.

It is expected that the standard of the breadth and depth of the report will be at the level of a **graduate thesis**.

4. STYLE

If I had more time, I would have written you a shorter letter.
— Blaise Pascal

The format of the report must conform to the template provided.

The style of writing should be academic. For that, the report should have logically-ordered sections that are meaningful and useful, and the content in those sections should be structured properly.

The number of pages in the report **must be at most 10**, including figures, tables, mathematical expressions, algorithms, pseudocode, source code fragments, if any, and references.

5. CITATIONS AND REFERENCES

If I have seen further than others, it is because I have stood on the shoulders of giants.
— Isaac Newton

The number of references **must be at least 10** and must be accessible on **Google Scholar**.

There could be **deduction of marks** if the constraints in the aforementioned sections are violated.