# PREPARATION GUIDE for PROJECT SPECIFICATION DOCUMENT

In a project specification document, you should define aim and scope of the project clearly and precisely. Potential social and technological impacts of the project should be presented. Detailed information on the methodology, solution techniques, as well as project management and risk management plans should be given as part of the document.

Your project specification document should include _all of the following sections._

## Title Page

This page should include:

 a. Title of project in capital letters

 b. Date

 c. Name and ID of the student(s)

 d. Supervisor(s)

Note that title page will be a separate page and the other sections will have section numbers.

## 1. Problem Statement

Write a few sentences (3-4 sentences) that summarize your project. Give a brief information about the problem of interest.

## 2. Problem Description and Motivation

Provide general description of the problem and motivation of the study in multiple paragraphs. Background and/or context for understanding the nature of the problem should be provided. You should provide answers to the following questions:

- What is the motivation for this project? Why are you doing this project?
- Is the project important or worthwhile?
- What are you planning to do?

## 3. Aims of the Project

Provide a bulleted list of all aims of the project. All aims should be clear and measurable.

- Project aim 1
- Project aim 2
- …….

## 4. Related Work

You should investigate similar projects done so far, and solution approaches that have been presented before. Compare your intended work with the existing ones; and state all differences. As a conclusion sentence, you may declare the novelties (if any) in your project, compared to the related work.

## 5. Scope of the Project

Define your scope precisely and completely. For example, if you are implementing a particular part of a system, explain which parts are in the scope of your project and which parts are out of its scope.

If your project is based on another project (e.g., a previous student project, an open source project, a completed or ongoing project of your supervisor etc.), clearly describe the relationship between them; and specify all required inputs and outputs from the reference project or work.

You should list all constraints and/or limits of the project clearly. You should also discuss any assumptions related to your project. For example, you may assume that you will be able to get access to currently unavailable data, or you may assume that there are no more than a thousand simultaneous users for your online multi-user software. You should try to clear up as many assumptions as possible.

## 6. Success Factors and Benefits

Describe how success of your project will be measured. You should provide answers for all of the following questions:

- *Measurability/Measuring Success*: Which indicators show that you have satisfied the requirements of your project?

- *Benefits/Implications*: What are the potential benefits of your project? Who will benefit from your project after its successful completion, and how?

## 7. Methodology and Technical Approach

Describe your approach to solve the problem. It would be preferred to demonstrate your high-level solution approach using a block-diagram. Additionally, explain any theory, known algorithms and methods that you will use (or plan to use) in your project.

Present resources (including facilities, software, hardware, specific data, people, etc.) that you need to use in order to successfully complete your project.

## 8. Professional Considerations

This section should include proper explanations for all items listed below:

- *Methodological considerations/engineering standards*: Include all methodological standards and/or language/notational standards that will be used (such as GANTT charts, UML diagrams, Source Code Control via Git/Subversion/etc, IEEE standards, … ). Explain each related item with proper illustrations, i.e., figures, tables.

- *Societal/ethical considerations*: Explain potential impacts of the project in ethical and societal context. Specifically, in your document, you should consider <u>at least any 3 out of the following 6 aspects</u>: i) economical, ii) environmental, iii) ethical, iv) health and safety, v) manufacturability, and vi) sustainability.

- *Legal considerations*, e.g. required permissions if the developed product should come to market, including licenses, medical, financial and ethical permissions.

## 9. Management Plan

Describe how the project will be managed, including a *detailed time table with milestones*. Specific items to include in this section are as follows:

- Description of task phases

- Division of responsibilities and duties among team members.

- Time line with milestones: This document should include detailed project time line. The time line should contain clear and well-defined descriptions of the work that must be completed before predetermined check points. Please use Gantt chart for this purpose.

- Risk Management: You need to specify possible risks that you may encounter throughout the project. For those risks, you are expected to propose a resolution. As an example, you may assume that you will be able to access currently unavailable data, but a potential risk is that you may never access to the intended data. How would you deal with that situation in your project?

**References:** You are required to add the list of references that you covered as part of your project. They can be journal papers, conference papers, books and web sites as well.