**Tasks for the 5-6th seminar – Develop partial parts (2.5 – Project Schedule) of your project according to the template of the seminar work**

This task is divided into two seminars, because creating a project schedule requires quality preparation.

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**2.5. Project schedule**

2.5.1. Start, end, project phases, milestones, etc. Use MS Project to create a Gantt chart for time planning.

2.5.2. Creation of Work Breakdown Structure (WBS) - also in MS Project gradually with the creation of a Gantt chart.

*TIPs:*

* *brief creation process in MS Project:*
  + *define project start (time + calendar)*
  + *insert a WBS column*
  + *describe individual tasks (activities)*
  + *define superiority, subordination of tasks - create a structure of summary and partial tasks*
  + *define time (duration of tasks)*

*- Saving a file from MS Project is with the extension .mpp, but it is possible to save the output (Gantt chart) as output in xls or pdf (pdf is more suitable). Path: File / Save and send / Create pdf document. You can then paste PrtScr into a word to have one file.*

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**A little theory….**

The Gantt Chart is synonymous with a graphical representation of a planned sequence of activities over time that is used to manage projects or programs. The spiritual father is Henry Laurence Gantt. The Gantt chart shows in columns (horizontally) the time period in which it is planned. Depending on the length of the planned project, the period is displayed in the appropriate details (years, months, weeks, days). The rows (vertically) then show the sub-activities (sometimes called tasks) - steps, activities or subprojects, in the order that corresponds to their logical sequence in the planned project (see WBS).

The duration of a given activity is then related to a time period. In a more expanded form, the diagrams can also show the sequence of activities, using broken arrows or lines leading from the beginning or end of one activity to the beginning or end of another activity to-finish). It is most often used for planning activities within a project or for coordinating projects within a program.

In practice, a simple form of Gantt chart is used only for a graphical representation of project activities over time, which can be implemented using a spreadsheet in simple office applications. A more complex form of the Gantt chart is the representation of various connections (capacity, material, technological, etc.) between individual activities. This way of planning activities follows from the CPM critical path method. Some of the project management tools are usually used for such a display.

* + Gantt chart lines: activities, steps, projects, subprojects.
  + Gantt chart columns: years, months, weeks, days, (hours).

**Characteristics of WBS**

* It is one of the tools of project management and consists in creating the basic structure of work.
* Translated as a breakdown, work schedule or as a work schedule outline, often abbreviated WBS. It is a simple analytical technique, the aim of which is to break down the project into individual activities up to such a level of detail that it is possible to assign responsibilities, labor and time horizon to them.
* Progress from the main goal of the project to more detailed levels (usually 3-4 levels in depth).
* Each structure must cover all works / all parts of the project.
* The time sequence is not important for the structure.

**Use of WBS in practice**: The structure of activities can be differently structured and complex depending on the complexity and scope of the project - for small projects it can take the form of a simple list of activities, for very complex projects it can form a multi-level structure of grouped activities into complete blocks or packages. the list of final activities (activities, steps) as clear as possible. In practice, the final level of disintegration is governed by a simple rule - the project manager must be able to plan and manage activities. Individual activities can be numbered as needed. WBS is used to populate Gantt chart activities when planning a project. WBS is usually processed by the project manager always before the start of project implementation.

**Work schedule - WBS**

* structure of decomposition of works
* structured decomposition of work, each structure must cover all works
* is focused on an integral part of the work - how to divide the work in detail
* summary activities - the summary activity consists of several detailed activities
* detailed activities (creation of hierarchy of activities)
* will only fit into the overall scope of the project - guard the boundaries of the project
* It is a basic document because it consists of:
* basis for time planning,
* the basis for resource planning in the project,
* the basis for budget planning,
* the basis for planning changes in the project.

**Gantt chart in MS Project**

The Gantt Chart view is vertically divided into two parts. The left part is a spreadsheet and resembles a spreadsheet in Microsoft Excel. The way of working is also the same here in many ways. The table is divided into rows in which tasks are written. So, one line, one task. Each task is identified by a number (ID) that appears in the line header on the left and indicates the line number. The columns display various information about the tasks, such as their name, duration, or start or end date. The intersection of a row and a column is called an array.

The right part of the display shows a graphical representation of the task in the form of a blue bar. The header of this view at the top shows a timeline that can be scaled or otherwise adjusted. Each task is then displayed as a bar with a start, a given duration and an end, and links to other tasks. In addition to the bar representing the task, other information is displayed, such as the names of the resources working on the task, the deadline, and so on.

Example of a Gantt chart







