

OPPONENT'S ASSESSMENT OF DIPLOMA THESIS

Student's name and surname: Nandhakumaar Paranthaman

Name of the diploma thesis: Design of manufacturing cell in the company BOS Klášterec nad Ohří

Supervisor of the thesis: Ing. František Koblasa, Ph.D.

Opponent: Ing. Lucie Heligar Svobodová, Ph.D., BOS Automotive Products CZ s.r.o.

1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis			x			
Quality of conducted survey				x		
Methodology of solutions				x		
Expert level of the thesis				x		
Merit of the thesis and its potential applicability of results		x				
Formal and graphic level of the thesis		x				
Student's personal approach			x			

Mark x in the corresponding box.

Supervisor's final evaluation is based on his/her overall subjective evaluation.

Grading is stated literally in the article no. 5, neither by a number, nor by a letter.

2. Comments and remarks of diploma thesis:

Specification of the master thesis is the design of a manufacturing cell for the company BOS Automotive Products CZ s.r.o. in Klášterec nad Ohří. The main goal of this thesis is the design of a new universal manufacturing production cell for the company where two products could be produced separately and verification of capacities using of simulation software.

In the theoretical part the graduate describes the rules of lean production. In his research student focused on lean manufacturing methods and their use. He also mentions the requirements of the automotive industry.

The practical part reflects the studied theory. The student follows the principles of project management and industrial engineering. In the practical part the student deals with the creation of universal layout and using simulation model in Witness software.

I really appreciate using of simulation tool for evaluation of the future status. The simulation with a correct input data is a correct tool for the presentation and evaluation of the future process flow. I appreciate part of example of the capacity calculation and other data analysis as like customer tact

time, cycle time, etc. as well as the process flow analyse which has to be prepared before simulation itself.

You can see the multi machine operation in the process which is not described in the diploma thesis. Than the productivity and utilisation seems to be low. On the other hand the operator produces at two machines.

The line bottleneck is important for the capacity study. You should to use it for the calculation of each limits and production capacity. Thence I am missing the information about that.

3. Questions about diploma thesis:

- I. What is the bottleneck in the production process? Which characteristics describe the bottleneck? How bottleneck affects capacity and WIP in the production line?
- II. What is multi-machine operation model? Can you describe multi-machine operation diagram using of machine and operation time?
- III. You describe multi-criteria matrix on page 60. How did you define criteria? Can you tell us the priority of your criteria? Based on which data did you decide to evaluate your criteria? Did you use any rating scale?

4. Opponent's statement whether the diploma thesis meets the academic title requirements and whether it is recommended for defense:

Generally the achieved results and conclusions of the diploma thesis meet the requirements of the assigned task. The author used a literary search of sources listed at the end of the diploma thesis. Quotations are in accordance with standards and citation practices. The diploma thesis is processed correctly from the formal point of view. I appreciate some facts in the diploma thesis. Especially these are the schematic, graphic and tabular representation, the expression of the author's opinion and the form of use of professional terminology.

The assigned task is suitably solved by the diploma thesis.

I recommend the thesis for defense.

5. Opponent's grading:

VERY GOOD

Date, in Liberec

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Opponent's signature

