

TU-A1300 - Introduction to Industrial Engineering and Management, 07.09.2020-30.11.2020

Grades

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# TU-A1300 - Introduction to Industrial Engineering and Management, 07.09.2020-30.11.2020

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Started on	Wednesday, 25 November 2020, 1:03 AM
State	Finished
Completed on	Wednesday, 25 November 2020, 1:31 AM
Time taken	27 mins 23 secs
Grade	5.00 out of 5.00 (100%)

Question 1

Flag question

Mark 1.00 out of 1.00

Correct

A company is considering investing in a piece of measuring apparatus. The service offered to its customers requires measurement data of the customers' business activities. The customer may deliver the data itself, but not all customers are able to do this. With the help of the investment, the company can offer a side service that would aid the deal altogether.

The procurement cost of the apparatus is 200000 € and the yearly cost of use is 80000 €. The procurement cost includes both the cost of the apparatus and taking it in use. The yearly cost of use includes the employee costs and other fixed costs. The holding period of the apparatus is expected to be 3 years, because technology advances fast. This is depreciated as a straight-line depreciation in the income statement and the expected remaining value is zero. The investment has no effect on the company's working capital. The weighted average cost of capital is 10% and the income tax percentage is 20 %.

What is the net present value (NPV) of the investment if the side service is expected to yield yearly sales of 200000 €. Give your answer to the nearest euro.

Answer: 71896

The correct answer is: 71896

Correct

Marks for this submission: 1.00/1.00.

Question 2

Flag question

Mark 1.00 out of 1.00

Correct

By how much should the side service of the measurement apparatus increase the company's sales at the minimum for the investment to be profitable? Give your answer to the nearest thousand euros (e.g. 88 if you get 88 000 €).

Answer: 164

The correct answer is: 164

Correct

Marks for this submission: 1.00/1.00.

Question 3

Flag question

Mark 1.00 out of 1.00

Correct

If 1400 hours of the measurement service can be offered per year, what is the average hourly rate [€/h] that the service should have for the investment to be profitable?

Answer: 117

The correct answer is: 117

Correct

Marks for this submission: 1.00/1.00.

Question 4

Flag question

Mark 1.00 out of 1.00

Correct

ADVANCED EXERCISE: The first year of the holding period of the investment has ended and it is now time to assess the next year. The assessment is based on the assumption that the company's sales will remain the same as the sales of the measurement service. The assessment, therefore, concerns organizing the company's internal processes - either a possibility to use subcontracting and to make a divestment or to continue producing the service. The markets for the measurement service have since developed and it can now be bought and sold for a price of 102 €/h. The company considers ending its own activity at the beginning of the next year. According to its plan, the company would buy the measuring service from a specialized company for its need in its own customer projects, 700 hours per year. The user of the measuring equipment could be laid off or transferred elsewhere in the company in a way that the hiring of additional workforce could be avoided. Other fixed costs of use would also be left out. In addition, the measurement equipment could be sold during the next year for a price of 50000 € (this is realized at the end of the year in the books).

If the company decides to move to subcontracting the measurement service, how much would this decision affect the operating income of the next year to the nearest euro (increase +; decrease -)?

Answer: -8067

The correct answer is: -8067

Correct

Marks for this submission: 1.00/1.00.

Question 5

Flag question

Mark 1.00 out of 1.00

Correct

ADVANCED EXERCISE: What is the effect of the previous decision on the next year's cash flow of the company to the nearest euro [increase +; decrease -]?

Answer: 60213

The correct answer is: 60213

Correct

Marks for this submission: 1.00/1.00.

Finish review

Product costs

Lecture 0: Course Introduction and Practicalities



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