Das Know-how.

REFA Training - Data Determination

Your know-how basis in Industrial Engineering 2017

YOUR QUALIFICATION FROM REFA – BUNDESVERBAND

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1 REFA COURSE

Data Determination

Your know-how basis in Industrial Engineering

The efficiency and the success of a company are decisively determined by the design of processes and work places. This requires the professional determination and application of process data. The seminar Data Determination deals with the following key themes and corresponding tools.

YOUR TOPIC – TARGET GROUPS

- qualified skilled and executive staff, specialists and managers
- master craftsmen and industrial foremen
- technicians
- work councils
- Staff from assembly, production planning and control as well as CIP team leaders and moderators.

YOUR BENEFIT – COMPETENCE

In probably every branch of economic activity the term “process” – understood as operational sequence or procedure –belongs to those keywords which are always linked to challenges. The seminar Data Determination provides you with the necessary knowledge

- how and with which tools processes can be analyzed and based on the results of these analyses
- How you can professionally design even comprehensive processes.

Processes are generally very complex and it takes numerous process data in order to develop and to permanently optimize them. The seminar Data Determination provides you with the necessary practical support and tools:

- to characterize and to determine the manifold data
- To apply the data within the scope of process developments and –optimizations in a targeted and tailor-made manner.
- Special emphasis is placed on getting-to-know selected tools and in particular their use in practical day-to-day application.

DURATION

The course consists of 40 seminar lessons (5 days full-time).

2 COURSE PROGRAM

Data Determination

Your know-how basis in Industrial Engineering

No.	Module Name	Lessons (1 lesson = 45 minutes)
1	Performance Rating	3
2	REFA Time Study - Execution and Evaluation	18
3	Setup Time - Determination and Optimization	3
4	Determination of Standard Data Elements	6
5	Contingency Allowance Determination	4
6	Activity Sampling	6
	Total lessons	40

3 MODULE FEATURES

3.1 Module 1: Performance Rating

Benefit

- During the execution of a time study varying performance levels over the course of the study or between different operators must be taken into consideration. Therefore a performance rate must be attached to the measured actual time.

Learning Goals

After completing this module you will be able to:

- understand the importance of the performance rating
- justify the need for a reference performance and based on that explain REFA Standard Performance
- present intensity and effectiveness in the context of motion sequences explain their interdependency and identify the associated performance rate
- indicate the limits of performance rating
- explain the practical approach in assessing the performance rate according to the REFA Standard Program
- perform a performance rating

Content

- Importance of Performance Rate
- Performance Rating
- RFA Standard Performance
- Evaluation of Motion Sequences
- Performance Rating – Requirement
- Performance Rating – Evaluation Approach

3.2 Module 2: REFA Time Study – Execution and Evaluation

Benefit

- You are familiar with legal, labor contractual and operational obligations and requirements that may apply to data determination and able to put time studies into operational context.
- You will gain competence in the preparation, execution and evaluation of a time study. You are familiar with currently available technology to support data collection in the context of a time study.
- You are able to establish statistical indicators to evaluate the data quality of the time study.

Learning Goals

After completing this module you will be able to:

- define the types and targets of a time study
- Explain applicable legal, labor contractual and operational obligations and requirements that must be considered regarding the determination of data throughout all phases of a time study, including stakeholders that must be informed throughout the process like supervisors, members of the labor council and whoever else might have a valid concern in the matter.
- explain the individual steps of the REFA Standard Program "Time Study"
- explain the impact and importance of process steps, measurement points (trigger points) and influencing factors for a time study using appropriate examples
- choose an appropriate form of documentation for measured data according to the sequence of process steps
- explain the relationship between the REFA Time Structure and data determined or calculated during a time study
- evaluate a time study based on the written documentation including Time per Unit
- execute and evaluate a time study including performance rating, statistical evaluation and calculation of the standard time
- support in the determination of suitable time measurement (data collection) systems

Content

- Types and Targets of a Time Study
- The REFA Standard Program "Time Study"
- Preparation of a Time Study
- Execution of a Time Study
- Evaluation of a Time Study
- Application of results of a Time Study

3.3 Module 3: Setup Time – Determination and Optimization

Benefit

- You will acquire knowledge regarding setup times in the context of target times, equipment utilization and work efforts related to the preparation of work systems. You will gain the methodological competence for the optimization and reduction of setup times and insight in the implications of an external setup organization, its staffing requirements and the need to view setup times from a different perspective than equipment related activities.

Learning Goals

After completing this module you will be able to:

- establish the operational importance of setup time reduction
- indicate the possible methods for the determination of setup times
- evaluate setup times
- Explain why an optimized setup process must lead to a new standard.

Content

- Targets of Setup Time Optimization, applicable methods, Planning and Structuring of Optimization Processes
- Execute Setup Time Optimization
- Evaluation of Optimization Processes, Assessment of Setup Times, Avoidance and Optimization of Setup Times, Utilization of Hard and Software, Exercise: Evaluation of a Study for the Optimization of a Setup Process

3.4 Module 4: Determination of Standard Data Elements

Benefit

- You will be able to understand the opportunities Standard Data Elements provide as a tool for planning, control and simulation, and gain competence in establishing Standard Data Elements efficiently and economically.

- The module will explained various methods for collecting and processing data necessary for the establishment of Standard Data Elements.

- You will understand how the intended purpose or application of the Standard Data Elements influence and define the required data quality.

Learning Goals

After completing this module you will be able to:

- specify the advantages and fields of applications of Standard Data Elements
- explain relevant influencing factors and provide appropriate examples
- define the preparatory steps for the establishment of Standard Data Elements and provide appropriate examples
- explain the particular features of a time study required if used to determine Standard Data Elements
- execute time study for determination of Standard Data Elements independently assesses and
- develop a simple example to present an arithmetic deduction of the linear correlation between time and influencing factors based on a given set of data – provide a functional and graphical assessment of the results
- present possible software solutions
- explain the REFA Standard Program Determination and Usage of learning content to provide a structuring and evaluation tool for standards data elements

Content

- Targets of Standard Data Elements
- Types of Standard Data Elements
- Factors that Influence the Determination of Standard Data
- REFA Standard Program Determination of Standard Data Elements
- Standard Data Elements
- Determination Statistical Principles (Data, Regression, Certainty)
- Software Based Data Evaluation, Assessment of Results
- Presenting of Standard Data Elements (Functions, Graphics, Tables)
- Preparation of Standard Data Elements

3.5 Module 5: Contingency Allowance Determination

Benefit

- You will acquire the necessary knowledge to determine and apply contingency allowance times in order to identify unproductive time elements as a basis for process improvement as well as a basis for the negotiating of allowance time percentage with stakeholder such as labor unions.

Learning Goals

After completing this module you will be able to:

- identify order-dependent, order-independent and personal allowance times and distinguish them form time elements that must not be included in the allowance time calculation
- organize and evaluate allowance time studies
- analyze and evaluate the results of executed allowance time studies and identify opportunities for process improvement.

Content

- Terms and correlations, observation time
- Execution of an allowance time study
- Interpretation of results

3.6 Module 6: Activity Sampling

Benefit

- you will be able to identify opportunities for improvement in an effective manner and understand Activity Sampling as versatile tool.

Learning Goals

After completing this module you will be able to:

- to explain the principles of Activity Sampling
- utilize the REFA Standard Program Activity Sampling and facts)
- prepare, coordinate and evaluate an Activity Sampling
- describe the opportunities and limits of applying Activity Sampling
- recommend operational applications ability)

Content

- Introduction, Principles of Activity Sampling (AS)
- REFA-Standard Program AS
- Requirements and applications of Activity Sampling
- Use of REFA Forms
- Analyst or operator driven observation