

Das Know-how.

Work- and Process Organisation

- REFA Basic Training in Work Organisation –

Learn targets

Seminar **Work System and Process Design**

1st module : The REFA work system

The participant

- can explain the notions and elements of the REFA work system,
- can describe different types of work systems,
- can describe and structure the REFA work system,
- can explain the terms work procedures, work methods and work style to describe work processes within the work system,
- can recognize the significance of work division within the work system,
- can explain the meaning of position and work place,
- can explain the work systems with single position work and multiple position work.

2nd module : Organization of work processes

The participant

- can explain the most relevant terms in organization,
- can explain contents and scope of the organizing process,
- can explain the different tasks and contents of structure organization and process organization,
- can explain the organization principles of structure organization,
- can explain the classification features of the structure organization,
- can explain the importance of planning, designing and controlling within the structure organization,
- can structure overall processes into process sections,
- can explain the terms “order types”, “work plan” and “time schedule”,
- can recognize the change from a function oriented approach to design to a process oriented approach to design,
- can recognize and explain the meaning of work organization within a process oriented organization development,
- can demonstrate the model of an integrated process and work organization,
- can explain the basics of process oriented process principles in the production.

3rd module : Systematic approach

The participant

- knows the reasons and the benefits of a systematic approach in work design,
- can explain the organizational conditions of planning activities,
- knows the differences between “must be” and “may be” targets and “monetary evaluable” and “monetary non-evaluable” targets and can apply this knowledge in designing projects,
- can explain the steps of the planning systematic with practical examples,
- can apply the planning systematic in designing a simple project,
- can recognize the various methods of idea finding.

4th module : Determination of process data and time data

The participant

- can explain the two items to determine data, for the purpose of use of data and for the conditions necessary to assure that the data are reproducible,
- can explain different types of data,
- can show the meaning of data for work design and the design of operational processes,
- can explain the purpose of use of data,
- can explain the term “process types” and how they can be influenced,
- can determine the process types related to man, the operating mean and the work piece,
- can explain the terms “order time”, “basic time”, “recovery time”, “allowance time”, “order time”, “occupation time” and can calculate these types of time,
- can calculate the throughput time,
- knows methods to record actual times and to determinate target times,
- can explain the difference between procedure time and throughput time.

5th module : Task analysis and task evaluation

The participant

- can explain and apply structurization criteria,
- can recognize the four types of structurization (AND-object, AND-operation, OR-object, Or-operation),
- can structure tasks in consideration of the structurization rules,
- can describe the possibilities to use a structurization plan to estimate times and quantities,
- can use a grid sheet to structure and can made visible the result in a structurization plan,
- can explain the technique to structure tasks,
- can describe the possibilities to use the method for the division of functions,
- can explain the four function categories,
- can elaborate a simple division of function,
- can explain the principle of ABC-analysis,
- can explain the proceeding when carrying out an ABC-analysis and can apply the ABC-analysis.

6th module : Process structures and process presentations

The participant

- can explain the purpose of process charts,
- can apply the 7 basic formats of process structures,
- can explain and apply the process chart symbols and terms,
- can explain the sequence structure symbols,
- can elaborate a operation sequence structure and task bearer sequence structure,
- can execute time calculations for order times and throughput times including quantity calculations,
- can elaborate a sequence structure on the basis of verbal or other process descriptions / process charts,
- can calculate the sequence structures for order times and throughput times.

7th module : Processes within an enterprise

The participant

- can describe the requirements of the new DIN EN ISO 9001:2000 of a process oriented management,
- can explain the various business processes within the value-creating chain in an enterprise,
- can describe the three strategy fields for successful enterprise management (customer orientation, employee orientation, process orientation),
- can demonstrate the systematic procedure model to implement process orientation from process design to process management,
- can list the various software tools to demonstrate business processes,
- can analyze and design processes with the help of software tools.

8th module : Introduction to Quality Management

The participant

- can explain the meaning of quality management within the company process,
- can show the historical development of quality conception,
- can explain the term Quality and demonstrate the benefits from quality management systems (QMS),
- can recognize the different approaches to quality management,
- can recognize the essential features of quality management,
- can explain the quality circle,
- can explain the connection between product and quality features,
- can demonstrate the meaning of quality related costs,
- can give various methods for failure prevention,
- can recognize quality techniques.

9th module: Continuous Improvement Process

The participant

- knows the historical development of CIP,
- can describe goals and strategies of CIP,
- can explain CIP building blocks,
- can explain how to avoid wastage,
- can explain the meaning of standardization,
- can explain the visualization of the CIP process as well as the meaning of the target agreement,
- can name tools for problem solving,
- can explain the procedure model to introduce CIP.

10th module : Costing

The participant

- can explain the meaning of costing for the company,
- can explain the terms “cost type”, “cost center” and “cost bearer” by using examples,
- can explain the difference between basic costs and calculatory costs,
- can describe the difference between unit costs and overhead costs using examples of his operational praxis,
- can explain the terms “variable costs” and “fixed costs” and can figure it in a graph,
- can describe the principle of the corporate accounting form,
- can explain the calculation of the cost per unit,
- can explain different methods of calculations,
- can execute a surcharge calculation,
- can calculate the machine time rate for an operating mean,
- can execute a cost comparison calculation,
- can determine the critical number of pieces by applying cost comparison calculation.

11th module : Costing based on process costs

The participant

- can explain the goals and basic ideas of process cost accounting,
- explain (by using examples) the differences in cost planning and cost accounting according to conventional overhead cost accounting and process cost accounting,
- can explain the process scheme of process cost accounting,
- can determine process cost rates.

12th module : Labor protection and occupational safety

The participant

- can explain the meaning of the protection of live and health at work,
- can explain targets and organization of business independent labor and health protection (fundamentals),
- can name examples for frequently occurring accidents and occupational deceases, explain them by reason and name some relevant law norms for labor protection measures,
- can explain the most common reasons for accidents at work as well as the task allocation within the corporate labor protection,
- can explain (by giving examples) measures of safety technical work design,
- can explain the procedure according to the REFA Safety Analysis,
- can explain the differences in responsibility and tasks within the labor protection in a company.

13th module : Design of human appropriate work

The participant

- can explain the meaning of human-appropriate work design,
- can explain the three basic criteria for human-appropriate work (protection, conservation and development),
- can recognize the legal requirements for the design of human-appropriate work,
- can judge human-appropriate work design on a given example.

14th module : Work load and stress

The participant

- can explain the concept of work load and work strain,
- can explain the difference between work load and work strain,
- can describe the different types of human work and their effects to man,
- knows the correlation of load and demand and can apply it in designing work systems,
- knows the targets of work structuring and its principles and can describe and assess it with examples,
- can describe the impact of shift work to state of health and can give advice to design shift work,
- knows the correlation of fatigue and recovery and can take it in consideration while designing work tasks and work processes.

15th module : Work load due to work tasks and work organization

The participant

- can explain how to do a strain analysis,
- can describe how to judge work load caused by work tasks,
- can describe strain induced by work organization and give examples for the design of work tasks,
- can name the targets and principles of work structurization and describe it by giving examples,
- can describe possible health effects caused by shift work and give advice for the design of shift work,
- can judge work related strain, implement work structurization measures and evaluate them.

16th module : Viewpoints of work design – anthropometry, information technique

The participant

- can name the possibilities for an effective staff allocation,
- can explain how to apply the body measurement of man (anthropometry) in workplace design and can apply it in his operational praxis,
- knows the situations in which the 5th, the 50th or the 95th percentile is to use in workplace design,
- can describe the proceeding in workplace design considering anthropometrical viewpoints,
- can explain work design from the viewpoint information technique,
- knows important recommendations about the arrangement and design of indicators and control parts and can explain it with examples,
- can explain workplace design by taking into account movement technical viewpoints,
- can explain methods and tools for the spatial arrangement of work places,
- can explain the proceeding in ergonomically design of handhold tools and control parts.

17th module : Work environment – noise, vibration, climate, lighting, harmful substances

The participant

- can name factors of the work environment which influence the work place,
- can describe the effect of unfavorable climate and lighting conditions, noise, vibrations and harmful substances on man,
- knows laws, norms, rules and guidelines dealing with limiting values of the load for man caused by the work environment,
- knows the principle of the methods for determination and assessment of the strain quantity from the work environment,
- knows measures to reduce the load on man caused by the environment. The participant can suggest and realize the measures in operational praxis,
- can point out the ranking of measures to reduce environment influences and can apply the measures,

- can explain the ergonomic check list.

Seminar **Process Data Management**

1st module: Introduction to process data management

The participant

- can explain the conception of process oriented time data management according to REFA,
- can demonstrate the connection between management data and implementation data by giving examples,
- can demonstrate general aspects to structure data,
- can deduct the subdivision of order throughput times in time data management,
- can structure data according to different criteria,
- can determine the suited time data management methods by applying a systematic selection process,
- can determine the throughput times within the process chain.

2nd module: Determination of time data

The participant

- can explain the term time study,
- can name the essential steps of the REFA standard program to carry out time studies,
- can explain the technique to implement time studies,
- can carry out progress time measurement and single time measurement and determine their measurement points,
- knows time measurement instruments and can explain their mode of operation,
- knows different kinds of process sequences caused by different kinds of work tasks,
- knows the different kinds of time study sheets and can select the most useful sheet for the case in the operational praxis,
- can execute a time study using the time study sheet Z1 or Z2.

3rd module: Performance rating

The participant

- can explain the meaning of performance rating,
- can give reasons why a reference performance is necessary and can explain the terms “performance degree” and “performance factor”,
- can assess the intensity and efficacy of a movement process and can explain the correlation of these terms,
- knows different reference performances and can define the REFA-normal-performance,
- can explain the limits of performance rating,
- can explain the practical way of proceeding for the REFA Standard Program Performance Rating,
- can apply performance rating.

4th module: Time study and evaluation

The participant

- can execute a time study,
- can explain the REFA standard program Evaluation of Time Studies,
- can check a time study to correctness and completeness and can calculate the time per unit (te) by using given allocation time surcharge and recovery time surcharge,
- can explain the meaning of time study for setup times,
- can explain the variation-number method according to the REFA Standard Program Statistical Evaluation of Time Studies,
- can apply the variation-number method to evaluate a time study.

5th module: Allowance time study

The participant

- can explain the importance of allowance time studies and can explain further methods to determine additional times,
- can explain allowance times using examples and can assort the additional times to the different allowance time types,
- can recognize the various allowance time studies and explain their respective application,
- can implement the planning of allowance time studies according to the REFA standard program,
- can describe the planning of an allowance time study, can evaluate an allowance time study with given data and can calculate the allowance time surcharges,
- can determine allowance times for operating means.

6th module: Recovery time

The participant

- knows the purpose of usage of recovery time,
- can explain the difference between work load and work demands by using examples,
- knows the different types of demands which are basis of the analytical recovery time determination,
- knows the necessity of work alternation and recovery time,
- knows the procedure of analytical recovery time determination and can apply it in operational practice,
- can explain the REFA standard program to determine recovery time.

7th module: Group work – time data

The participant

- can explain the importance of group work by using examples,
- can explain the employed time study technique and the determination of given times on the three typical kinds of group work,
- can calculate time data for group work.

8th module: Multiple position work – time data

The participant

- can explain the importance of multiple activity by using examples,
- can explain the different types of multiple activity by using examples,
- can explain the procedure to determinate the given time and the number of stations,
- can calculate time data for multiple activity.

9th module: Activity sampling

The participant

- can explain the principle of activity sampling,
- can describe and apply the planning and execution of activity sampling according to the REFA standard program Activity Sampling,
- can execute and evaluate an activity sampling by using an example,
- can explain the benefits and disadvantages of using activity sampling for data determination,
- can explain the application of activity sampling to determinate allocation time surcharges.

10th module: Comparing and estimating

The participant

- can explain the terms “compare” and “estimate”,
- can explain the prerequisites and application of comparing and estimating as well as methodical aids,
- can explain the procedure of comparing and estimating according to the REFA standard program using a practical example,
- can explain the difference between general and subdivided estimating,
- can explain the necessary to determine the influence factors by using an example,
- can explain time category procedure to determine the basic time,
- can develop a time category table according to given data.

11th module: Interviewing and self-registration

The participant

- can name the meaning of interview for data determination,
- can explain different kinds of interview,
- can explain the difference between open questions and closed questions,
- can explain different kind of questions,
- can formulate open questions,
- can explain the REFA Standard program for interviewing,
- can describe the basic rules which have to be observed during executing an interview,
- can explain the prerequisites on executing self-registration,
- can explain the limits and benefits of self-registration,
- can describe possibilities to apply self-registration,
- can explain the procedure of self-registration
- can do a job description by carrying out an interview.

12th module: Predetermined time systems

The participant

- can explain the term predetermined time systems,
- knows the REFA Standard program for predetermined time systems,
- can explain the most relevant basic movements according to MTM,
- can execute simple movement analysis using the analysis-chart.

13th module: Standard times

The participant

- knows the benefits and attributes of standard time,
- can explain the REFA standard program Standard Times,
- can explain the steps to prepare the determination of standard times using examples,
- can select the most useful method of time determination in consideration of the purpose of use to get basic data for standard times,
- can figure the linear dependence of time to an influence factor in a graph and in a formula and can develop a standard time table,
- can explain the REFA Standard Program Standard Time application.

14th module: Production data recording

The participant

- can explain meaning and application area of data recording in modern organization structures to follow up on business processes,

- knows the connection between identification techniques and production data recording / mobile data recording,
- can explain by giving examples the application area of business data recording,
- can explain the basic set-up of business data recording systems and classify them in the company system hierarchy of data processing,
- can give a summary on mobile data determination techniques.

15th module: Process evaluation and key numbers

The participant

- can name purpose and application area of key numbers,
- knows various sorts of key numbers and can describe the rules to generate them,
- can use given data to create process key numbers for different areas of the business process (for example for the areas of input, transformation or output),
- can evaluate the aptitude of process key numbers for the planning and controlling of processes,
- knows the difference between a collection of key numbers and a key number system,
- knows various sorts of key number systems and describe the rules to generate them,
- can explain the basic set-up of a process key number system.

16th module: Flexible working- and business times

The participant

- can explain rigid and flexible working time regulations,
- can explain (by using examples) the terms working time and business time,
- can describe and classify today's standard working time regulations,
- can explain the legal framework for working time regulation,
- can co-implement the flexible design of working time and business time.

17th module: Determination of job requirements

The participant

- can explain the differences between the summary procedure and analytical procedure to determine job requirements,
- can describe the REFA Standard program for requirement determination,
- can describe the requirement types according to REFA including their data for simple single tasks,
- can explain the term "quantification of requirements",
- can elaborate a job description of a work system including the organizational relations of the system,
- can execute the requirement analysis of a job description according to the REFA requirement types,
- can apply the rank succession procedure with separate weighing on a simple example to quantify the requirements,
- can explain the applications of the result of the requirement determination using practical examples,
- can apply the summary methods of requirement determination.

18th module: Flexible remuneration management

The participant

- can explain the term „remuneration“
- can describe the importance of tariff autonomy on wage differentiation,
- can explain the terms “remuneration principle” and “remuneration method”,
- can explain the methods of summary and analytical work assessment,
- can explain the remuneration principles for time wage, piece work wage and premium wage,
- can explain the procedure to introduce performance assessment on target agreement.
- can calculate piece wage and premium wage according to given data.

19th module: Group work and team work

The participant

- can explain the terms group work and team work,
- can describe the features of Lean Production,
- can explain the different sorts of groups,
- can name the characteristics of group work,
- knows the targets aimed for when implementing group work
- knows of problems which result from group work,
- can explain the necessity for work structures,
- knows the special requirements for staff and managers caused by group work,
- knows chances and risks when implementing group work,
- can explain the importance for staff- and managers qualification to successfully implement group work,
- can describe a systematic method of planning and implementation of group work and can participate in the introduction of group work in a company,
- knows the adaptations of the remuneration system when introducing group work,
- can explain the meaning of group work by giving examples.

20th module: Work pedagogic and qualification

The participant

- can explain the term qualification,
- can demonstrate the necessity and problems of qualification within the company,
- can explain the procedure to design qualification measures,
- knows the phases in the qualification process,
- can explain targets, processes and results of work instruction,
- can explain function and necessity of the personnel development plan and of the qualification plan (curriculum),
- can explain the basic structure of a qualification plan,
- can explain the various levels and steps of the standard program of work instruction,
- can establish an instruction plan.

21st module: Material flow design

The participant

- can explain (by giving examples) the term “material flow” and the levels of material flow,
- can explain the process types of material flow processes,
- can name meaning and target of material flow design,
- can explain the 5 steps of planning and design of material flow systems,
- can explain the importance of spatial, manufacture technical, transport technical and storage technical factors to the material flow design,
- can name operating means for material flow and explain their use,
- can explain the importance of simulation for planning and design of business processes,
- can explain the purpose of simulation,
- can explain the benefits of simulation,
- can develop a target condition for material flow optimization from the actual condition.