



# tele.soft

Training Module  
**Corporate Procedures and  
Business Management**

Training Module  
**PC Technology and Data Networks**

## **Imprint**

### **Curriculum:**

Training Module "Corporate Procedures and Business Management"

Training Module "PC Technology and Data Networks"

### **Authors:**

Tim Brauckmüller / Herbert Rüb

### **Published by:**

INBAS GmbH, Offenbach

Bonn/Rhein-Sieg Chamber of Industry and Commerce, Bonn

Dr Reinold Hagen Foundation, Bonn

INBAS GmbH, Offenbach 2003

---

This document was produced under the **tele.soft** programme

"tele.soft" – IT Training Scheme for the Unemployed with a Focus on Disadvantaged Groups  
tele.soft Web site: [www.telesoft.inbas.com](http://www.telesoft.inbas.com), eMail: [hamburg@inbas.com](mailto:hamburg@inbas.com)

*Project Manager*  
Dr Wolfgang Schlegel, Herbert Rüb

*Promoted by*  
Federal Ministry of Education and Research (bmb+f), Support Reference Number (FKZ): W1214.00

*Execution:*  
*Institut für berufliche Bildung, Arbeitsmarkt- und Sozialpolitik GmbH*  
Institute for Vocational Training, Labour Market and Social Politics GmbH  
INBAS GmbH, Herrnstr. 53, D - 63065 Offenbach, Germany, Phone: +49 69 / 2 72 24-0, Fax: +49 69 / 2 72 24-30  
Internet: <http://www.inbas.com>

# Curriculum

Training Module

## **Corporate Procedures and Business Management**

Training Module

## **PC Technology and Data Networks**

Basic qualification in preparation for the four IT vocational training programmes:

- Information and Telecommunication System Electronics Technician (IT System Electronics Technician),
- Specialist Information Scientist,
- Information and Telecommunication System Manager (IT System Manager),
- Informatics Manager

# Curriculum IT Training Modules, Bonn

Basic qualification in preparation for the four IT vocational training programmes

## Table of Contents

<b>1. SOME FUNDAMENTAL CONSIDERATIONS .....</b>	<b>3</b>
<b>2. ACCESS REQUIREMENTS .....</b>	<b>4</b>
<b>3. CONTENTS OF THE TRAINING MODULES.....</b>	<b>4</b>
<b>3.1. Education and Training Master Plan (<i>Ausbildungsrahmenplan</i>) and the Framework Curriculum (<i>Rahmenlehrplan</i>) Items Covered by the Modules .....</b>	<b>4</b>
<b>3.2. The “Corporate Procedures and Business Management” Training Module.....</b>	<b>5</b>
3.2.1 Make-up and Workflow.....	5
3.2.2 Labour Law and Health and Safety at Work .....	7
3.2.3 Team Work and Project Management.....	8
3.2.4 Business Management.....	9
<b>3.3. The Target Learning Outcomes of the “PC Technology and Data Networks” Training Module .....</b>	<b>11</b>
3.3.1 PC Hardware .....	12
3.3.2 Network Technology.....	14
3.3.3 Programming Basics .....	16
3.3.4 Database Basics.....	17
<b>4. DIDACTICS, METHODS AND MEDIA .....</b>	<b>18</b>
<b>5. EXAMINATION .....</b>	<b>20</b>

### 1. Some Fundamental Considerations

Training modules are relatively new tools to support disadvantaged young people and young adults within programmes which prepare them for their entry into the job market. Their introduction leads to better and more targeted vocational preparation qualification schemes for officially recognised occupations which require a formal course of training and to a certain cross-institutional standardisation of contents. On the other hand, the modules prepare the younger generation for specific occupations which require a formal course of training and thus give them a head start in the race for training places.

The discussion about the introduction of training modules came to a preliminary end once the concept of “vocational preparation” had become a part of the Vocational Training Act (BBiG) and the Federal Ordinance on the Certification of the Fundamentals of Vocational Proficiency in the Context of Preparation for Vocational Education and Training (BAVBVO) had been passed. The BAVBVO ordinance now governs the scope and certification details of training modules. The competent authorities now officially recognise the modules and as a consequence they have become comparable all over Germany, form an intrinsic part of the vocational training system, and companies offering training places, work placements and regular employment get more reliable information on the technical knowledge of applicants.

The tele.soft training modules as offered in Bonn are made up of 400 lessons each, usually stretching over three months, seeking to convey skills and provide know-how in order to technically prepare participants for four IT training courses:

1. Information and telecommunication system electronics technician (IT system electronics technician)
2. Specialist information scientist
3. Information and telecommunication system manager (IT system manager)
4. Informatics manager

The fast speed of innovation poses a particular challenge for everyone, but especially so for IT workers who have to constantly update their skills. This is exactly why IT basic training first-and-foremost needs to focus on the acquisition of integrating and cross-sectoral skills. This expertise is of paramount importance in the following areas:

## **IT Training Modules Curriculum, Bonn**

Basic qualification in preparation for the four IT vocational training programmes

1. Problem solving processes
2. Independent and efficient learning
3. Teamwork and team building
4. Communication and customer orientation
5. Presentation and documentation of results

The call for these competencies requires appropriately designed initial and further training schemes which trigger activating, encouraging, autonomous and independent learning processes. This is why the curriculum for the two training modules relies on an action and project oriented approach. Much weight is given to team-based problem solving strategies, which are then documented and presented. They help combine the teaching of skills and capabilities of the respective training module.

### **2. Access Requirements**

The training modules are aimed first-and-foremost at teenagers and young adults with slight deficits in the above-mentioned areas who perform well in German and Maths but were not able to either start or complete their vocational training due to personal problems. Teenagers and young adults who want to be considered for these training modules must be strongly and lastingly interested in new technologies.

### **3. Contents of the Training Modules**

#### **3.1. Education and Training Master Plan (*Ausbildungsrahmenplan*) and the Framework Curriculum (*Rahmenlehrplan*) Items Covered by the Modules**

Items 1 through 5 of the education and training master plans are identical for all IT occupations. This is why all skills and capabilities, acquired through autonomous planning, implementation and monitoring, may be outcomes of these five sections.

1. The company which takes on trainees
2. Business and performance processes
3. Work organisation and work techniques
4. IT and telecommunications technology products
5. Provision and support of system solutions

For all other areas, only the commonalities matter which are in the focus of all four vocational training schemes.

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

### 3.2. The “Corporate Procedures and Business Management” Training Module

This module is mainly made up of items 1 to 3 of the education and training master plans for IT occupations. The following modules are combined to form units of modules:

1.1	Position, legal form and structures	Acquisition of knowledge of corporate organisation structures (make-up and workflow)
2.2	Corporate organisational structures	
1.2	Vocational training, labour law and collective bargaining law	Labour law and health and safety at work
1.3	Safety and occupational health	
1.4	Environmental protection	
2.1	Creation and utilization of goods and services	Introduction to and practising of business procedures
2.3	Procurement	
2.4	Market and customer relations	
2.5	Business management and controlling	
3.1	Information and communication	Independent implementation of operational projects
3.2	Planning and organising	
3.3	Team work	Promotion of team building

The participants deal with these units in the following four project areas:

1. Make-up and workflow (40 lessons)
2. Labour law and health and safety at work (30 lessons)
3. Teamwork and project management (150 lessons)
4. Business management (180 lessons)

They combine indispensable technical theory with practical exercises. Further overlaps may result from project work under items 6 to 10 for IT occupations, which cover job-specific performance areas. Changes in the sequence of the module areas as compared to the education and training master plans are due to the didactical structure of the projects.

#### 3.2.1 Make-up and Workflow

This sub-module seeks to combine theoretical teaching with hands-on experience in order to shed some light on corporate structures, both on a global level and within a company.

1. Economic theory

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

2. Sense of responsibility
3. Team competence
4. Understanding of corporate departmental structures and management models

Fundamentals of

- Legal forms of business organisation
- Make-up of companies
- Corporate structures

are taught in the following way: participants are invited to run a fictitious company which has to compete for orders. Thus, they learn how entrepreneurial processes are organised. This sub-module is made up of 40 lessons altogether which break down into 10 lessons of theory and 30 lessons of practical exercises, which in turn include 10 evaluation lessons. Aspects of this sub-module will also crop up during later stages, especially so in the team building, project implementation and project management learning sections.

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Knowledge of different legal forms of business organisation, Introduction to corporate organisational structures, Analysis of organisational structures	Knowing the differences between <i>GmbH</i> ( $\approx$ ltd), <i>KG</i> ( $\approx$ limited partnership), <i>AG</i> (joint-stock company), <i>Verein</i> ( $\approx$ society) and <i>Verband</i> ( $\approx$ association)  Profit and non-profit organisations and the co-operation in the context of internationalisation  Function-oriented organisation Corporate organisational structures Make-up and process flow organisation Corporate IT structures Central structures Decentralised structures Networked structures	1.1 c 1.2 d 1.3 b 2.2 a 2.2 b 2.2 d	10 theoretical lessons
Project implementation and evaluation  Solving of conflicts within teams	Discussion of results, recognising conflicts,  Learning how to keep technical and emotional conflicts apart,  Developing theoretical solutions at work	3.3 c	30 practical lessons

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

### 3.2.2 Labour Law and Health and Safety at Work

Key aspects of this sub-module are conveyed during theoretical lessons and additional insights may be gained while being with a company (possibly during a work placement).

The following areas must be covered:

- Positions of employer and employee
- Rights and duties of employees
- Occupational safety measures
- Economical and environmentally friendly use of energy and materials

The learning goals should be reached within 30 lessons. For quality assurance purposes, participants should sit short tests. The focus areas “occupational safety measures” and “economical and environmentally friendly use of energy and materials” should be covered by means of a questionnaire, which is later to be filled in by the management of the company which has taken on the trainee. The completion and the evaluation of the questionnaire(s) are part of the project. This type of co-operation enhances the relations between trainees and employers, who are to receive the results of the test in the course of the project.

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Knowledge of training regulations	Comparison of rights and duties of trainees and employers,  Higher-level regulations, evidence of remuneration received	1.2 a 1.2 b 1.2 c 1.2 d 1.2 e 1.2 f 1.2 g	10 theoretical lessons
Knowledge of safety and occupational health regulations	Sources of danger at work,  Countermeasures, prevention	1.3 a 1.3 b 1.3 c 1.3 d	10 theoretical lessons
Application of occupational safety and environmental protection measures	Sources of stress and how to avoid it, proper use of materials	1.4 a 1.4 b 1.4 c 1.4 d	10 practical lessons

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

### 3.2.3 Team Work and Project Management

This sub-module forms the basis for the work within the projects. The education and training master plan lists the following cornerstones:

- Information and communication
- Planning and organising
- Teamwork

Basic software applications are made available for each learning goal. The participants have to develop them further in an autodidactic way. The theoretical lessons include an introduction to applications software programmes, e.g. MS Project, which is combined with insights into project management theory. To monitor their performance, participants have to deliver a final presentation. Fifty lessons of this module are dedicated to the introduction to applications software.

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Collection, selection and proper use of information, The Internet and other tools, Planning and organisation of corporate communication processes	Collecting and using information Information sources Information selection Information management Time scheduling Correspondence Minutes Conducting meetings	3.1 a 3.1 b 3.1 c 3.1 d 3.1 e 3.2 a 3.2 c	30 Stunden Theorie
Knowledge of project management processes, Execution of projects	Defining projects Defining processes Defining milestones Monitoring projects and performance processes Identifying problems and come up with solutions Time and resources management Documenting projects	3.2 a 3.2 c 3.3 a 3.3 b 3.3 c	20 theoretical lessons
Knowledge and application of the MS Office and MS Project programmes	Defining milestones Monitoring projects and performance processes Identifying problems and	3.2 d 3.2 f 3.2 g	50 practical lessons

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<i><b>Target learning outcomes</b></i>	<i><b>Curriculum contents</b></i>	<i><b>Education and Training Master Plan</b></i>	<i><b>Allocation of lessons</b></i>
	come up with solutions  Time and resources management  Documenting projects	3.3 a  3.3 b  3.3 c  4.3 a  5.3 a  5.3b	
Presentation of projects	Preparation of a presentation  Preparation of a MS PowerPoint presentation  Presentation (minimum duration: 20 minutes)	3.1 b  3.2 a  3.3 a  3.3 b  3.3 c	20 practical lessons

### 3.2.4 Business Management

This sub-module is based on the skills and know-how acquired during earlier projects. Lessons are arranged to cover the following areas: corporate order processing and preparation of quotations, handling of invoices, customer data collection. The practical application of previously acquired knowledge is as important as the autodidactic tapping of new areas. The main emphasis is placed on:

- Corporate order processing and the preparation of quotations (45 theoretical lessons)
- A management simulation (125 practical lessons)

This is where the management side is taught during the IT training courses. Participants need to familiarise themselves thoroughly with costing and pricing procedures, which will be of vital importance later on when they will be asked to prepare a quotation. The project ideally bases on basic specifications and in a second step, technical system specifications have to be developed thereof. At the end of this stage participants have to deliver a talk to show that they have understood everything.

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Knowledge and planning of corporate order processing and controlling	Targets of process orientation	2.1 a	15 theoretical lessons
		2.1 b	15 practical lessons
	Definition of process orientation	2.1 c	
	Definition of processes	2.1 d	
	Process elements	2.3 d	
	Process Analysis		
	Workflow management Monitoring and controlling		
Analysis of market structures, Knowledge of marketing strategies	Market structures	2.1 c	15 theoretical lessons
	Market analysis	2.1 d	15 practical lessons
	Marketing mix	2.3 a	
	eBusiness		
	Customer-oriented provision of services		
	Benchmarking		
	Break-even-point		
	Portfolio		
	Marketing strategies Matrix organisation		
Knowledge and application of economic tools	Preparing quotations	2.1 a	25 theoretical lessons
	Calculating product prices	2.1 b	35 practical lessons
	Working out the profit margin of products	2.1 c	
		2.3 b	
	Cash discount, discount	2.3 c	
	Value added tax (VAT)	2.3 d	
	Checking the processing of orders	2.4 a	
		2.4 b	
	Preparing concept folders	2.4 d	
	Preparing contracts	2.4 e	

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Verbal communication with customers	Talking to customers (on the phone and face-to-face) Negotiating contracts Preparing a quotation on the basis of talks with customers	2.4 c 2.4 d	40 practical lessons
Collection and evaluation of customer data, Calculation of ratios and visualisation of results	Preparing and evaluating questionnaires Reading and preparing diagrams Monitoring target group-related trends Choosing marketing measures	2.1 c 2.4 b 2.4 f 2.4 g	20 practical lessons

### 3.3. The Target Learning Outcomes of the “PC Technology and Data Networks” Training Module

The “PC Technology and Data Networks” training module is subdivided into four learning sections, too. In line with the scope of hands-on exercises, they may well be broken down into further sub-projects or participants may tackle them as a single large project. Thus, depending on the equipment of the training rooms and workshop areas, a combination of theoretical and project-oriented teaching may be ensured. The learning sections mainly stem from items 4 and 5 of the education and training master plans for the four IT occupations.

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

Assembly and installation of PCs	PC hardware
Troubleshooting, error analysis and fault recovery	
Installation of operating systems	
Maintenance of hardware and operating systems	
Physical set-up of a network	Network technology
Installation of network operating systems (NOS)	
Administration of networks	
Networking of several networks	
Generation of Web sites and small applications	Programming basics
Creation of simple relational databases	Database basics

These learning sections are to be covered in the following didactic projects:

1. PC hardware (110 lessons)
2. Network technology (120 lessons)
3. Programming basics (80 lessons)
4. Database basics (90 lessons)

### 3.3.1 PC Hardware

There are several options for the practical implementation of the “PC Hardware” project, depending on the equipment of the education provider or, even more important, of the workshop area:

- Assembly and provision of new PC systems for a workroom;
- De-installation of existing PCs by trainers and their re-assembly by participants;
- Ordering and assembly of PCs according to customers’ wishes (in-house and external customers).

These steps may be linked with the first training module if the project implementation includes writing a quotation and the ordering process. What counts most in implementing the project, apart from the flawless set-up of the systems, of course, is the independent use of the reference materials or users’ guides, such as the operating instructions of the main boards, which are usually only available in English.

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<b>Target learning outcomes</b>	<b>Curriculum contents</b>	<b>Education and Training Master Plan</b>	<b>Allocation of lessons</b>
Assembly and configuration of PC hardware	Computer architecture Server systems Data back-up Interfaces Peripheral devices System components Obtaining information from the Internet	4.1.a 4.1.b 5.3.a 5.3.b 5.3.d	10 theoretical lessons 40 practical lessons
Installation and maintenance of operating systems (Windows 2000, Windows XP, Linux)	File systems and the way they work, Win 98, Win 2000 Server, Win XP; Linux BIOS configuration BIOS update OS / DOS settings Test procedures Formatting of data carriers Computer viruses (types, how to avoid them, analysis, removal) Use of helpful utilities Data back-up and data retrieval Operating systems File systems	4.1 c 4.1 d 4.2 a 4.2 b 4.3 b 4.4 a 5.1 a 5.1 b 5.1 c 5.1 d 5.3 c 5.3 e 5.4 e 5.5.e 5.5 f 5.5 i 5.5 k	10 theoretical lessons 30 practical lessons
Master data security and data back-up procedures	Checking reasons for overheating Working with hard disks Work place ergonomics Installation of a server room (air con system) Data back-up Data protection Update software Software licences Protection against viruses and virus removal Configuration of firewalls, anti-virus programmes, useful tools	4.2 b 5.1 a 5.1 c 5.4 e 5.5 e 5.5 f	5 theoretical lessons 15 practical lessons

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

### 3.3.2 Network Technology

Within the “Network Technology” project, four somewhat smaller sub-projects may be established. Their concrete implementation, however, heavily depends on the technical equipment of the education provider and the performance level of the group. Depending on the team-building capabilities of the participants, small projects may be established to better evaluate the progress they make in coping with conflict situations. If possible, two small projects may be set up, however, they also may be combined to form one large project:

- Physical set-up of a network
- Installation of network operating systems
  - Variant 1: Administration of networks
  - Variant 2: Networking of several networks

Variants 1 and 2 may shift the focus of the implementation towards the second sub-project. At this juncture, however, the learning outcomes of the first project and the planning process at the outset of the project should be taken into account.

<i>Target learning outcomes</i>	<i>Curriculum contents</i>	<i>Education and Training Master Plan</i>	<i>Allocation of lessons</i>
Planning, installation and maintenance of small PC networks and telecommunications systems (Telephone, Internet connection) under Windows and Linux	Basic terminology, topology, architecture, access procedures, Knowledge of DIN (German Standards Institution) standards, set-up of networks in line with DIN standards (wiring), OSI reference model, protocol types, Laying of network cables, fitting of network sockets and patch panels, Installation of raceways and network cabinets, fitting of network cards, Documentation	4.1.c 4.1.d 4.2 a 4.2 b 4.2 c 4.3 b 4.4 a 4.4.b 4.4.e 5.1 c 5.1 d 5.4 a 5.4 b 5.4 c elements from 6.1 and 6.2 elements from	20 theoretical lessons 40 practical lessons  <b>Physical set-up of a network</b>

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<i>Target learning outcomes</i>	<i>Curriculum contents</i>	<i>Education and Training Master Plan</i>	<i>Allocation of lessons</i>
		8.1 and 8.2	
Administration of a small network under Windows and Linux (data back-up, creation of user accounts, user rights, Internet access)	<p>Components of a network, planning of a standardised network, configuration of hardware and software for networks</p> <p>OSI layers: logical problem solving strategies</p> <p>Installation of print servers</p> <p>Installation and set-up of network operating systems and services (e.g. mail servers, DNS, FTP, HTTP)</p> <p>Creation of user accounts and user group accounts, assignation of rights, maintenance and repair of server networks, fault diagnosis, wiring of servers and clients</p> <p>Service administration</p> <p>Data back-up</p> <p>Structured wiring</p> <p>Configuration of an Internet access</p> <p>Sub-network options, creation and configuration of sub-networks for WAN wiring purposes</p> <p>Configuration of routing paths including</p> <p>Routing and WAN (ISDN/DSL) protocols</p> <p>Bandwidths, access options, surfaces</p>		<p><b>Installation of network operating systems</b></p> <p>6 theoretical lessons 24 practical lessons</p> <p><b>Network administration (Variant 1)</b></p> <p>5 theoretical lessons 25 practical lessons</p> <p><b>Networking of several networks (Variant 2)</b></p> <p>10 theoretical lessons 20 practical lessons</p>

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<i>Target learning outcomes</i>	<i>Curriculum contents</i>	<i>Education and Training Master Plan</i>	<i>Allocation of lessons</i>
Planning of a project Knowledge and application of MS Project and MS Visio	Creation of layout plans Creation of installation drawings Creation of wiring maps Definition and planning of projects Identification of milestones Monitoring of processes Definition and monitoring of buffer times Analysis and solution of problems Documentation of the project development	3.2 a 3.2 c 3.2 d 3.2 f	30 practical lessons

### 3.3.3 Programming Basics

Within the “Programming Basics” project, two focus projects may be arranged for in co-operation with the companies. Provided the trainers have enough time, the group of participants may be split up, which possibly may lead to better learning outcomes.

Focus project 1: The creation of a Web site using HTML and PHP helps pave the way for the next project, “Databases”. This way, Web-based databases are introduced via the application of MYSQL and SQL LIGHT. The major benefit of PHP is that it may be used as a scripting language.

In focus project 2, participants are asked to design basic (business) applications with the help of a programming language (C / C++). The programming project may also serve as introductory project for the thematic database work with MS Access. In this case, Visual Basic must be used. With this strategy, a link to the first training module may easily be established. A take-home pay calculator would be a reasonable application to create. Here, so-called “sliders” would have to be integrated to reflect variable social insurance contributions (old-age pensions and medical insurance).

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<i>Target learning outcomes</i>	<i>Curriculum contents</i>	<i>Education and Training Master Plan</i>	<i>Allocation of lessons</i>
Internet application/ creation of an operable programme with a technical or economic content  Options: C++ programming or creation of a Web site which is connected with a data base (HTML/PHP)	Use of graphics and design software, editors, HTML  Simple programming of Web-based scripting languages (Java, C++, PHP) or applications (C++, Visual Basic) (take-home pay calculator)  Programming techniques (e.g. conditionals and looping)  Commands and multiple queries  Platform-independent programming languages  Reference to the Web server from learning section 2 is possible	5.2.b   5.2.a   5.2.c   elements of 4.4 elements of 6.2 and 9.3	40 theoretical lessons  40 practical lessons

### 3.3.4 Database Basics

As mentioned above, the “Databases” project may be regarded as a follow-up project to the “Programming Basics” projects. However, this is not compulsory. If the database project is designed as a follow-up project, participants have to create an application database and integrate it into the previously generated Web site (focus project 1 of the “Programming Basics” learning section). If focus project 2 has been selected, participants have to further develop, revise and extend the already existing database.

A reasonable database project may be an application database, e.g. a corporate human resources database.

If this learning section is tackled together with the previous sub-modules and sub-projects, participants may possibly set up a corporate network for a company with various locations (location simulation), which may serve as a basis for a cross-locational human resources database.

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

<i>Target learning outcomes</i>	<i>Curriculum contents</i>	<i>Education and Training Master Plan</i>	<i>Allocation of lessons</i>
Planning and creation of a down-to-earth database under MS Access  Basic knowledge of SQL	MS Access, MYSQL/SQL, characteristic database features	5.5.a 5.5.b	10 theoretical lessons 30 practical lessons
Visualisation and presentation of a project	Creation of a customer-oriented presentation in a team  Presentation of the project results in English (technical terminology) after prior agreement  Visualising of functionalities and media design	3.1 b 3.2 a 3.3 a 3.3 b 3.3 c	20 practical lessons
Verbal conversation and written correspondence with customers	Fine-tuning of products according to the customer's wishes  How to master negotiations  Adhere to contractual regulations through to the conclusion of a deal	2.4 a 2.4 b 2.4 c 2.4 d 2.4 e 2.4 f	30 practical lessons

### 4. Didactics, Methods and Media

The framework curriculum calls for action-oriented teaching methods, which are broken down into learning sections. Teachers and instructors have to promote four individual competencies which are briefly outlined below. Taken together, they enhance the participants' action competence and thus help them act independently. Of course, one cannot go into details in a mere 400 lessons.

Technical competencies:     -knowledge (facts, data, rules, terms, definitions,...)

  -understanding contexts, forming an opinion

  -solving problems with increasing independence, accessing new capabilities and expertise

Personal competencies:     -independence, self-confidence, critical faculty, reliability

  -everything that has to do with the "nature" of the participants

Methodology competencies: -planning, looking up, organising,...

  -the tools and skills one needs to learn something

## IT Training Modules Curriculum, Bonn

Basic qualification in preparation for the four IT vocational training programmes

Social competencies:            -arguing, discussing, listening, integrating  
  -willingness to co-operate with others

The idea of holistic learning sections as described in the framework curriculum is done justice by employing the so-called *Leittext* or six-steps-method in teaching the projects. It is characterized by the following six steps:

Informing	Planning	Deciding	Realising	Monitoring	Evaluating
-----------	----------	----------	-----------	------------	------------

Nowadays, “real projects” are regarded as being the best didactic path. As projects of this kind are difficult to implement within a mere 400 lessons, due to time and organisational constraints, project-based teaching and project-oriented learning are the tools of choice. Quite deliberately, details of individual projects have not been cast in stone, to give both trainers and participants some leeway to shape them against the background of their interests and expectations.

Step one covers **item 3.1** of the framework curriculum, **informing**. Here, information needs to be compiled from various German and English sources. In line with the project requirements, talks are arranged for and information is passed on within the teams. On top of technical expertise, the other three competencies are trained, and thanks to the teamwork approach, social competencies are promoted, too. The mere capability of perceiving interpersonal problems in teams enhances the willingness to solve them and increases the ability to cope with conflicts and to work in teams. This corresponds to **item 3.3** of the education and training master plan.

Step two, **planning**, covers **item 3.2** of the education and training master plan.

Steps three and four, **deciding** and **realising**, are aimed at promoting the independence of the participants and thus help advance personal competencies.

Step five, **monitoring**, includes quality assurance and quality management efforts within the current project. Furthermore, this section seeks to teach troubleshooting and fault analysis skills.

The sixth step, **evaluating** the project, deals with the project hand-over, including the documentation and presentation of the results. Thus, mastering applications software

## **IT Training Modules Curriculum, Bonn**

Basic qualification in preparation for the four IT vocational training programmes

programmes (e.g. Word, Excel, PowerPoint or Open Office) is to be regarded as a “soft skill”, as they are now used without further ado and participants have learned how to handle them almost autodidactically. This covers **item 4.3** of the education and training master plan.

Due to the action-oriented teaching approach, participants are in the limelight and lecturers and instructors merely act behind the scenes as learning facilitators. Thus, the “problem recognition” learning section is dealt with in passing. As projects are the cornerstones of this qualification scheme, project management basics, which are also part and parcel of the six-steps-method, play a role too.

### **5. Examination**

The examination is made up of written tests at the end of the modules as well as an ongoing assessment of the performance. At the end of the training modules or even at the end of the respective module section, the project is presented and a project documentation is put together.

The monitoring of the four competencies mentioned above forms the basis of the ongoing assessment of the performance. Great store is set by assessing both the actual situation and pointing out room for improvement in the course of the scheme. The final test is in keeping with the standards for vocational final examinations of the Chamber of Commerce and is based on a holistic approach. The performance is examined in a written test. In addition, participants have to present their own projects.