Curriculum and content description

for the course for

EMA Certified IBM Mainframe Practitioner

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1 Objectives of the Practitioner Course

After this compact course, participants will know the basics of mainframe architecture as well as the most important components and subsystems. They know the user interfaces that allow them to work interactively with the z/OS operating system. The handling of the user interfaces is approached in a very practical way. The participants receive a lot of hints and tips from practice and can work efficiently with the z/OS after this module.

2 Information on the EMA's "Blended Learning"

The course content is divided into compulsory material and elective material. The compulsory material is relevant to the examination, i.e. the knowledge imparted must be available in tests, examinations and practical work and must be tested if a certificate is to be obtained at the end of the module.

The elective material can be worked through on a voluntary basis. Of course, qualified specialists are available to answer questions for all matters.
The average learning effort for the compulsory material is about 10 hours per week. For a

four-month course, this is about 160 hours of learning time.

Numerous videos are made available for content development. These are accompanied by learning server tasks (LSAs) in which theoretical and practical tasks are set, which are then discussed in the Virtual Classroom (VC) sessions.

All VC sessions are recorded and can be accessed as often as desired.

3 Description of Contents

The modules are described in detail below.

3.1 Kick-off Workshop

Kick-off Workshop
This kick-off lays the foundation for successful cooperation throughout the entire learning phase.

Duration
Approx. 3 hours in the Virtual Classroom

Date **Next date: see start dates**

Objectives of the workshop

This face-to-face workshop aims to achieve three things:

- The participants and the key lecturers get to know each other
- Participants will learn about the most important e-learning tools, especially the Virtual Classroom
- The participants get an initial overview of the seminar content

Content

Introduction Round of Introductions Introduction to the Topic

Learning efficiency
Learning and Insights in Neurobiology
Efficient Learning

E-Learning & Blended Learning
The Importance of E-Learning
The Benefits of Blended Learning
E-Learning Tools at a Glance

Learning platform Moodle
Overview of the learning platform
Structure of the learning platform

The Virtual Classroom
Objectives of a VC session
Differences to the conventional classroom
Use of the Virtual Classroom

Access to the mainframe
The EMA's infrastructure
Access to the IBM computer

Scheduling of VC Sessions, Exams and Dates

3.2 Mainframe Architecture

Goals
Attendees will understand the fundamentals and features that distinguish an IBM mainframe from other platforms.

Content

The IBM Mainframe Architecture
Quality Characteristics of the IBM Mainframe Mainframe History
Basic Architecture
Command Flow
Virtual Memory
Partitioning and Virtualization: Myths vs. Facts
Mainframe Performance

System z Hardware
What is a CEC?
From the /360 System to the z16 I/O Configurations
Peripherals

System z Software
Operating Systems on the Mainframe
From DOS to DOS/VSE to z/VSE
From PCP to MVS to z/OS
Virtualization (LPARs vs. z/VM)
Application Virtualization (Containers)

Sysplex and GDPS
The Importance of High Availability Sysplex and Parallel Sysplex
GDPS

Mainframes and New Technologies
UNIX System Services
Mainframe and Java
WebSphere on the Mainframe
SOA, APIs, and Cloud Computing

3.3 z/OS and Subsystems

Goals
The participants know the structure and the most important components of the z/OS.

Content

Basic components of the z/OS
Overview
Job Management and JES
Data Management
Supervisor

Databases and Transactions
Database Architectures
IMS (Hierarchical DB)
DB2 (Relational DB)
Transaction Monitor CICS
Message Queuing

Other Subsystems and Components
z/OS Security Server
Storage Management with SMS and HSM
Communication Server

3.4 Efficient work with TSO and ISPF

Goals
The participants know the possibilities of using TSO and ISPF efficiently under z/OS. You can set up a session with TSO / ISPF and create, view and edit files. You can use the utilities under ISPF efficiently. You can handle ISPF commands and functions efficiently, and you can also use advanced edit functions efficiently.

Content

TSO/E
TSO - the "shell" of the z/OS
Structure of a TSO session
Examples of TSO commands

Interactive System Productivity Facility (ISPF)
Components of ISPF ISPF
Settings
Files and Naming Conventions Creating Files
ISPF as editor
Primary ISPF Commands
Efficient handling of Line Commands ISPF Profile
Tabbing, Bounderies and Masks

ISPF Utilities
Dealing with Utilities under ISPF
DSLIST Utility
Copy, Search and Statistics
Transmitting files to other systems

TSO and Batch
The utility IKJEFT01 example scenarios and use

TSO and Networking
TSO and FTP
TSO and Telnet

Documentation and error analysis
Messages in z/OS
SYSLOG
IBM Mainframe Documentation

3.5 Job Control Language and SDSF

Goals
The participants know the possibilities and advantages of batch processing. You know the instructions and parameters of the Job Control Language (JCL) that are essential for practice.

You can track a batch job in SDSF and interpret the job and JES messages and troubleshoot them.

You can use dataset, system, and other utilities in batch processing.

Content

Introduction to JCL Batch Processing and the JES
Function and Flow
JCL Instructions

Dealing with Utilities
Data Set Utilities
IEFBR14
IEBGENER & IEBCOPY
TSO commands as batch job
SORT/MERGE

JES and SDSF
System Display and Search Facility (SDSF)
Overview
The JES phases and SDSF
Insight into the various job queues
Manipulation of jobs via SDSF

Handling Procedures Calling Procedures Job Log and Procedures
Symbolic parameters and their use Instructions Override and replace Create and use your own procedures