







Course title	Classroom	Online	Contents
For more information scan QR code			
SC-S-EXBA	0,5 day BAS 	0,5 day BAS 	<p>Explosion protection basic Basics of an explosion: Preconditions for an explosion / Potential sources of ignition / Protection against explosions</p> <p>Types of protection: Overview</p> <p>Types of protection: Flameproof enclosure Ex d / Pressurized enclosure Ex p / Increased safety Ex e / Intrinsic safety Ex I / Encapsulation Ex m / Zone separation, Zone 0 / Type of protection for Zone 2 Ex n / Protection by enclosure (dust) Ex t / Protection of non-electrical devices</p> <p>Explosion protection in North America (special features): Special features of the Class Division model</p> <p>Application in hazardous location: Selection of equipment / Zone 0</p>
SC-S-EXUS	0,5 day BAS 	0,5 day BAS 	<p>Explosion protection for user Basics: Overview types of protection / Definitions and characteristic quantities / Marking</p> <p>Requirements for application: Preconditions for application / Explosion protection document / Zone separation / Device selection</p> <p>Application of equipment: Flameproof enclosure (Ex d) and increased safety (Ex e) / Pressurized enclosure (Ex p) / Intrinsic Safety (Ex i)</p> <p>Exercises</p>
SC-I-ASM	2 days BAS 	2 days BAS 	<p>Analyzer System Manager (ASM) Industrial Ethernet: MAC address, TCP/IP, subnets, topologies / Redundance protocols (RSTP, MRP, HRP) / Scalance hardware configuration</p> <p>ASM Architecture</p> <p>General ASM handling: Alarm- and message handling / Gas bottle management / calibration module / Validation module / Diagnostic values / Maintenance module / Schedule module / Reporting module</p> <p>Requirement: Basic knowledge in Windows / Basic knowledge in industrial gas analyzers / Knowledge in evaluating results of process analyzers.</p>

Training for process analytics

From individual analyzers up to customized system solutions, Siemens offers a complete bandwidth of modern process analytics for all kinds of industries, processes and applications. However, the performance and availability of modern analyzers and systems can only be fully utilized and turned into economic success in association with knowledgeable and application-oriented exploitation. Therefore, Siemens process analytics supplements its device and system offering by a comprehensive training program for planning, operating and maintenance personnel.

The courses are modular and cover the complete range of analytical devices used in process gas chromatography and continuous gas analysis. In general, the courses cover the physical measuring technology as well as the constructive design and practical use of the devices, including extensive practical exercises on the devices and their components. The contents of the courses are additionally supported by systematic recapping and checking of success.

The main training site is Siemens Training Center Europe in Karlsruhe but we also offer training at the customer's site. Since the courses are limited to a small number of participants, there is room for individual topics that may not be covered in the set program.

State-of-the-art and convenient – Interactive live online trainings.

We are happy to announce a new offering. Interactive live online training with hands-on exercises transmitted via live streaming in HD quality.

The trainings are done online via camera-streaming supported by interactive software. During the interactive live session, no pre-recorded videos will be used. The aforementioned training content will be demonstrated live by a trainer and participants see and learn exactly the same content as they would in a face-to-face training session. Of course, the interactive session offers the same advantages as the classroom trainings: Exchange with the other course participants or clarification of questions.

This leaflet provides an overview of our courses.

The prices quoted include the course itself, the course documentation as well as drinks and catering during the event.

Other costs such as for travel and accommodation are not included. The prices are subject to VAT.

Please note that some courses are the prerequisite for taking follow-up courses.

Additional information around our training program can be found at:

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PROCESS ANALYTICS

Process gas chromatography

Trainings
siemens.com/processanalytics

SIEMENS

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SC-C-MAX1	4,5 days BAS 	10 days BAS 	<p>MAXUM Ed. II operation and maintenance Introduction into chromatography / Physical structure and electronic design of MAXUM Ed. II process gas chromatograph / Analytical functions, hardware modules, electronic and analytical / Workstation and structure of the software; devices for networking and prepare the PC / Networking: addresses, IP, Loop, Unit Ethernet, DataNet, CAN boards / MAXUM database: MAXUM table editor, HMI, online operation / I/O tables, alarms, the AMD-File, backup and restore</p> <p>Operation with GCP: application, sequences, methods / Peak tables and integration parameters / Data sheet and nomenclature / Valves: Model 50 and liquid injection valve / Applets and use of detectors / Column switching, electronic pressure regulators and flow adjustment / Development of a method</p> <p>Requirement: Basic knowledge in process analytics.</p>
SC-C-MAX2	3 days ADV 	5 days ADV 	<p>MAXUM Ed. II advanced user Create and configure input/output functions / Alarms and limits / I/O functions and alarms / What is necessary to create an alarm / Results, limits and messages/alarms / Read MaxBasic programs / Parameter links to MaxBasic programs / Structure of OPC and Maxum Modbus address table / Client/server and host / Install and use of ODBC (Open Data Base Communication) / Hyper terminal / Text file and software upgrade</p> <p>Requirement: successful participation of course SC-C-MAX1.</p>
SC-C-MPGM	3 days ADV 		<p>MAXUM Ed. II. Programming Programming with MaxBasic, Visual Basic / MaxBasic programming language / Create MaxBasic programs / MAXUM interface to SQL data base</p>
SC-C-SAM	2,5 days BAS 		<p>MICROSAM Hardware: Physical structure and connections / Application module / Supply gas, sample and injection elements pressure controllers</p> <p>Electronics, boards and functions: Real time signal processing and connections / CAC board / Electronic pressure regulator / Standard I/Os</p> <p>The PC, workstation and software: Setting up the workstation / Networking, structures and addresses / Table editor, gas chromatograph portal</p> <p>Dialog with the MicroSAM: Method developing, GCP / HMI software, menu structure / types of calibration / DL datalogger, *.sdf files / Backup and restore / Analyzer offline</p> <p>Requirement: Basic knowledge of process analytics and instrumentation.</p>
SC-C-CV	2,5 days BAS 		<p>SITRANS CV Hardware: Physical structure and connections / Analysis module / Supply gas, sample, injection elements pressure controllers / Standard I/Os / CAC board / Electronic pressure regulator and EPC board</p> <p>The PC, the CV Control Computer: Configurator tables / Method tables, EZChrom utilisation</p> <p>Dialog with Sitrans CV: calibration of a Calorific Value Analyser / Data logging and Modbus</p> <p>Analytical functions: Use of the injection circuit with Live Injection / Six detections and use of the TC-detectors / Chromatograms of Sitrans CV</p> <p>Requirement: Basic knowledge of process analytics and instrumentation.</p>

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SC-C-MMO1	3 days BAS 		<p>MAXUM Ed. II. Modular Oven (MMO) Basics of chromatography / Maxum Ed. II MMO physical structure / Ovens, oven components, disassembly and reassembly / Electronic compartment / Electronic components / Physical and analytical components / Valves, injection / Leakage test / Applications and methods / SW tools, connecting to networks / GCP / Backup, restore</p> <p>Requirement: Basic knowledge of process analytics, gas chromatography and sampling systems / General knowledge of electrical engineering.</p>
SC-C-MA1R		5 days ADV 	<p>MAXUM Ed. II. Operation and maintenance Refresher Latest changes on Maxums</p> <p>Recap of the basics: Calibration / Column treatment / FID vent / How to open a "Support Ticket" / PIA & SIOS</p> <p>Course Specific recap: Recap valves (Mod50, LIV) / Saving AMDs / Samplebottle treatment</p> <p>Requirement: The participants are required to have attended the GC basic course SC-C-MAX-1.</p>
SC-C-MA2R		5 days ADV 	<p>MAXUM Ed. II. Advanced user Refresher Latest changes on Maxums</p> <p>Recap of the basics: Calibration / Column treatment / FID vent / How to open a "Support Ticket" / PIA & SIOS</p> <p>Course Specific recap: Analog outputs / Limits & alarms & programs / Evaluating chromatograms</p> <p>Requirement: The participants are required to have attended the GC basic course SC-C-MAX-2.</p>
SC-C-LIVE	3 days ADV 		<p>MAXUM Ed. II. Valveless column switching Technology and use of valveless column switching for capillary columns for Maxum Ed. II / Adjustment of Back-T Switching / Adjustment of LIVE Switching / Columns, restrictors, replace Live-T-piece / Failure diagnosis and correction / Extending the knowledge of the Siemens chromatography technology / Extensive hands-on</p> <p>Requirement: Attendance at training SC-C-MAX1.</p>
SC-S-MAEX	1 day ADV 	2 days ADV 	<p>MAXUM Ed. II. Explosion protection Safety Protection Principles: Intrinsically safe devices / Purged enclosures / Flameproof and explosion proof enclosures / Temperature classifications / Temperature control</p> <p>Maxum Ed. II Safety Systems – Purged Enclosure: Electronics purging system without APU, fast purge switch, pressure sensor, purge alarm LED / Electronics purging system with APU, proportional valve, automatic purge unit, maintenance switch / Power disconnect relay, signal disconnect relay / Maintenance panel safety features / Maintenance considerations for purged system</p> <p>Maxum Ed. II Safety System – Oven : Heater circuit identification tags / Isothermal airbath oven heater system: heater assembly, temperature limiting, temperature control / Program temperature airbath heater system, IS barrier and probe / Isothermal airless oven heater system / Maintenance considerations airbath & airless / Modular oven heater system / Maintenance considerations modular oven</p> <p>Maxum Ed. II Safety System – Valves, Detectors and External Systems: Siemens Liquid Injection Valve (SLIV) heater / Detectors, overview, thermal conductivity detector, FID/FPD heater assembly, flame ionization detector / Flame photometric detector, air treater, methanators, detector maintenance considerations</p> <p>Safe Operation: Read safety information / Leak testing / Monitoring analyzer status / Steps for safe startup of Maxum Ed. II</p> <p>Requirement: Basic computer skills / Basic process chromatography skills / Basic Understanding of the Maxum Process gas chromatograph system / Maxum Operation Level 1 Course (SC-C-MAX1).</p>