Since 1976, SAS has provided training to our customers enabling them to utilize their SAS® software in the most expedient way. To ensure that our customers get the most out of their SAS investment, we offer a wide range of courses and other learning tools. We use our experienced and certified instructors and consultants to give our customers immediate and long-term value. On the following pages, you will find both basic and advanced courses as well as services that will help you on your SAS Education journey.

SAS Education Nordic

Our locations

**Copenhagen**
Købmagergade 7-9
1150 København K
Phone: + 45 33 96 99 61
E-mail: saskurser@sas.com
www.sas.com/denmark/training

**Oslo**
Parkveien 55
0256 Oslo
Phone: + 47 23 08 30 50
E-mail: kurs@nor.sas.com
www.sas.com/norway/training

**Stockholm**
Stora Frösunda Gård
169 70 Solna
Phone: + 46 08 522 170 00
E-mail: kurser@swe.sas.com
www.sas.com/sweden/training

**Espoo**
Tekniikantie 14
PL 85 Espoo
Phone: + 358 9 525 571
E-mail: koulutus@sas.com
www.sas.com/finland/training
Grow with SAS Education – on LinkedIn

Learn more SAS® and get the latest news from the SAS Nordic Education team

- Announcements about new or revised SAS training and services
- Latest certification program news and materials to help you prepare for exams
- News about seminars, special events and promotional offers, and tips for using SAS software
- Latest information on books and documentation to augment your learning
- Connect and network with other learners and SAS experts

Join us now at https://www.linkedin.com/groups/3660109/
What does Workforce Transformation do?

- Methodical support of staff development for the innovation process
- Effective use of SAS software
- Introduction of new tools, technologies and processes
- Talent/career development of staff
- Recruitment of new talent
- Increases staff satisfaction
- Lively community eradicates knowledge silos
- Better cooperation within and between teams
Analytics Value Training

Analytics Value Training for Data Science

The Analytics Value Training program helps you transform your organization to be more data-driven and obtain business value with analytics.

The program:

• Provides the basic skills needed to solve real business problems with analytics
• Accommodates the participants with special fields of interest
• Includes diploma after examination and final presentation

Content:
The program is built around the four main areas of expertise needed to attain business value from analytics

• Statistics and mathematics (predictive models, clustering, machine learning, etc.)
• Programming and databases (system knowledge, programming languages and Hadoop)
• Communication (visualization, storytelling and presentations)
• Business understanding (value and industry-related business benefits with ROI).

The program is delivered over 12 months as:

• 11 days of class workshops
• Online training, including workshops
• Reading of selected business concept references
• Presentations
• 7-14 days of deeper tools training (optional)

Contact

For more information
Patric Hellgren, Patric.hellgren@sas.com
Connected Classroom or Live Web Class?

Live and interactive like in the face-to-face course, but more flexible

Connected Classroom and Live Web Class are both teaching formats that allow you to take part in the training “live”, but from anywhere. This means you have the flexibility to take part from any location you like with your computer. You simply need internet access. This saves you time and travel costs.

In the Connected Classroom, you will be connected remotely to a face-to-face course and will be able to watch the trainer, via a video image in the classroom. The trainer, can involve their “virtual” participant just as much as their physical ones. Connected Classroom is lively and motivating.

What distinguishes Classroom, Connected Classroom and Live Web Class?

<table>
<thead>
<tr>
<th></th>
<th>Classroom</th>
<th>Connected Classroom</th>
<th>Live Web Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Event</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Auditory contact with the instructor</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Visual contact with the instructor</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Personal contact to the instructor</td>
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<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Practice environment is provided</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Networking</td>
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<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Full-time</td>
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<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Travel time required</td>
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<td>X</td>
</tr>
<tr>
<td>Travel expenses</td>
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</tr>
<tr>
<td>Internet access required</td>
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<td>✓</td>
</tr>
<tr>
<td>Own PC / laptop required</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Headset required</td>
<td>X</td>
<td>✓</td>
<td>X</td>
</tr>
</tbody>
</table>
SAS® Programming Master Class

A focused way of learning SAS Programming

The perfect start for those interested in a career as a SAS professional. SAS Programming Master Class is a structured way of learning SAS. The program is divided into two parts: Foundation and Advanced. In the program, you gain the skills that are needed to be a skilled SAS programmer. Learn how to write efficient SAS code and SAS programs, macro programs and SQL. You will earn knowledge to pass two certifications: SAS Base programmer and SAS Advanced programmer.

The program is intended for people with an interest in programming skills, such as:

- Business analysts
- Data scientists / statisticians
- IT professionals

The objectives of the program are to get experience in programming and data management using SAS 9 and be able to:

- Import and export raw data files
- Manipulate and transform data
- Combine SAS data sets
- Create basic detail and summary reports using SAS procedures
- Identify and correct data, syntax and programming logic errors

Program objectives

The program takes you through the fundamental to the advanced concepts of SAS programming as well as the different components and techniques required to succeed and create real value with programming and analytics.

The program focuses on comprehensive training using software products such as SAS Enterprise Guide® and SAS Studio to complete class assignments. Prior knowledge of these software products is not required.

Strategic and tactical program outcomes

For the organization

- Get your workforce into SAS programming fast
- Organizational SAS programming focus
- Talent management for analytical talents
- Modern way of learning (cost efficiency)

For the individual

- Invest in your future
- Strengthen your daily work with SAS
- Get the knowledge of SAS programming fast
- Network and skills sharing with compers
- Modern may of learning (flexible)

Learn how to

- Write SAS code from a beginner’s level to more advanced level
- Create programs and work more efficiently with SAS
- Solve your problems with SAS programming
- Get immediate analytic insights and programming knowledge to support and impact your organization
- Collect skills to get certified in SAS programming

Overview

This is a learning and networking program of 6 months’ duration with focus on everything that is needed for a SAS programmer.
# 6-Month Program Plan

<table>
<thead>
<tr>
<th>Duration</th>
<th>Session 1</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 2 days   | SAS Programming 1 | Introduction, program and data access  
Create reports and format data values  
Manipulate data and combine data |
| 2 days   | SAS Programming 2 | Control SAS data set input and output  
Summarize, read and write different types of data  
Perform DO loop and SAS array processing  
Transform character, numeric and data variables |
| Self-study | Homework Programming Lab Days | Extended Learning for Programming 1 + 2  
Base practice exam  
Case studies and exercises |
| ½ day | Certification Exam | Base SAS Certification Exam |

<table>
<thead>
<tr>
<th>Duration</th>
<th>Session 2</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 3 days   | SAS Macro Language 1 | Perform text substitution in SAS code  
Automate and customize the production of SAS code  
Conditionally or iteratively construct SAS code  
Use macro code variable and macro functions |
| 2 days   | SAS SQL 1 | Query and subset data  
Summarize and present data  
Combine tables, including complex joins and merges  
Replace multiple DATA and PROC steps with one SQL query |
| 2 days   | SAS Advanced Programming | Control memory, I/O and CPU resources  
Create and use indexes  
Combine data horizontally  
Create user-defined functions and formats |
| Self-study | Homework Programming Lab Days | Extended Learning for Macro 1, SQL 1 and Advanced Programming |
| ½ day | Certification Exam | Advanced Certification Exam |
SAS® Coaching and Mentoring Services

Hire a SAS instructor for on-the-job coaching and fast results

Interested in informal on-the-job coaching and consultation for you and your group? Mentoring Services allow users to learn with a coach by their side. Add mentoring after an on-site training to get more comfortable with what they learned in class and more quickly apply the new skills to your job.

Benefits
- Get even quicker results from your class
- Practice on your own data
- Gain insight into your data and code
- Get answers to your unique questions as they arise
- Become more comfortable with new skills

Types of Service
Our experts will work with you to develop a mentoring solution that is structured around your unique needs.
- Add mentoring to an on-site training or schedule as a stand-alone event
- Schedule 1-2 days or a multi-day session coaching event
- Bring the instructor to you or connect via phone or Web conference

For more information
To book your mentoring event or get a quote, contact us at
saskurser@sas.com
kurser@swe.sas.com
kurs@nor.sas.com
koulutus@sas.com
FANS & SAS® Learning Conference

Join FANS and get access to our popular network meetings

We currently have 120+ leading brands participating in five different networks across eight Nordic cities. Interact, learn and grow. www.sas.com/fans

Network groups:
- Platform
- Analytics
- Visual Analytics
- Programming
- Cross Topic Network

Activities:
- Webinars
- SAS® Support Community
- SAS Flagship Event
- SAS Intro Tour

SAS Learning Conferences - a different way of learning SAS

Experts at Your Service

The instructors at this event are some of our most knowledgeable colleagues in the Nordics having many years of experience in using SAS.

Develop your expertise in our short, focused presentations where you will be given handouts and hands-on exercises for selected sessions to underpin your learning ensuring that you can take away key learning back to your desk.

Become more efficient in your usage of SAS, we will be sharing Tips & Tricks throughout the day.

One day - two tracks and Ask-the-Experts Q&A.

For more information

SAS® Programming Series

Workshops with modern development environments and tools, SAS Enterprise Guide®, SAS Studio, SAS/GRAPH®, ODS and Reports

Over the years, our SAS instructors have received questions about extra functionality when writing programs in SAS. All these questions are the foundation for these workshops. They will give you new tools and knowledge that will help you write SAS programs in a more modern way.

Who should attend
People who want to know about useful components in creating reports, functions and other areas regarding programming in SAS.

Content

Workshop 1 - FCMP
• An easy way to create your own functions

Workshop 2 - Filename
• Doing more with filenames, e.g. read from web using URL, sending e-mails and create zipfiles, etc.

Workshop 3 - PROC IML basics and R interaction

Workshop 4 - Advanced data step features
• Advanced functions, e.g. PRXMATCH, PRXCHANGE and INTNX

Workshop 5 - ODS
• Data templates
• Style template

Workshop 6 - Macro
• How does it work?
• Samples, samples, samples

Before attending these workshops, you should have basic knowledge of and experience in SAS programming. Attendees should have completed ‘SAS® Programming 1: Essentials’ course or have equivalent skills.

Duration
Each workshop is 3 hours.
Free SAS Lab Days

Visit SAS and work in our Lab

Use this opportunity to join us at SAS and bring your SAS® work and SAS programs. You will meet our instructors, and you can discuss your questions with SME (subject matter experts).

Our programming curriculum and courses have been revised in 2018, and the content is now more compact. The SAS Programming 1: Essentials course has been shortened from 3 to 2 days, and many of our attendees like the structure of the course, but they have requested more time for exercises. Therefore, we would like to give our participants the opportunity to come to SAS for an extra free day.

Who can attend?

Users who have completed our course SAS Programming 1: Essentials and want to work more with their SAS programs.

Content

You can work with our programming case or just work with the exercises from the programming course. If you have challenges or questions with your own tasks at work, you are welcome to bring them as well.

Duration

You are welcome to stay 1-2 hours or the entire day.
Classroom courses

Our open course programme incorporates a range of courses on principles and specialist topics. The courses are carried out by expert and accredited instructors who will impart sound SAS expertise, and you will experience how learning can be fun. Communication with participants from other companies will enrich your personal network.

A company-specific course will be individually tailored to the requirements of the target group. Whether at your workplace or our modern classrooms, whether group training or face to face with the instructor, whether standard or customised – many variants are possible. The training content is precisely tailored to your company’s requirements.

Coaching

Coaching at SAS means making sure people can stand on their own feet for the long term. It is an individual and solutions-oriented form of learning whereby participants and instructors work together intensely on problem solving. This training would be put into practice when you are looking for a target-oriented way of solving this problem with SAS. Or, you have already attended an SAS course and are looking for a particularly efficient way of putting your newly acquired knowledge into practice.

E-Learning

Web-based learning at SAS means boundless learning. You open your preferred SAS software training straight from your computer and learn at your individual speed, wherever and whenever suits you best. The learning modules allow you to determine your progress yourself.

Live Web Classes and Connected Classroom

Bring the classroom to your workplace. The training is designed in such a way that a high level of interaction and direct communication takes place with the instructor and other course participants in real time in a “virtual classroom”. This saves you time and travel costs.

Certificates and SAS Digital Badges

When you take an eligible SAS course or earn an internationally recognized credential from SAS, you also earn a digital badge - SAS Learn Badge or SAS Certification Badge - that you can share on e-mail signatures, digital resumés and on your social media sites, including LinkedIn, Facebook and Twitter. The digital images contain verified metadata that confirms your accomplishments.
SAS® Learning Subscription

Complete and flexible so you can focus on learning

Our unlimited learning subscription is a convenient, flexible way for your organization to get training when and where it is needed - in one purchase.

Share the components - ranging from beginner to expert - with different teams, and let them choose the training that meets their needs and those of your organization.

Learn more at sas.com/ls - and get started today with a free trial option!

JMP® Learning Subscription

Complete and flexible so you can focus on learning

Looking to onboard new hires, expand employee knowledge or learn about the latest JMP technologies? Our unlimited e-learning subscription is a convenient, flexible way for you or your organization to get training when and where it’s needed - in one purchase!

What You Get

- E-learning
- Up-to-Date Content
- Help When You Need It
- Usage & Completion Reports

For more information

saskurser@sas.com
kurser@swe.sas.com
kurs@nor.sas.com
koulutus@sas.com
SAS® Training Points

Looking for a flexible way to get discounts on SAS Training?

SAS Training Points allow your organization to purchase training at a significant discount.

Save up to 30% with SAS Training Points

Ways to use SAS Training Points

SAS Training Points can be used for the following training services.

- Public and live web courses
- On-site training and mentoring
- Business Knowledge Series courses
- SAS Certification
- Selected conferences
- e-Learning
- SAS Books

Benefits

Big Savings
Take advantage of the best standard discount available for training.

Single Budget
Receive only one invoice for all your training needs.

Comprehensive Reporting
Receive monthly updates and access to online reports to track your training points.

Ongoing Support
Enjoy a personal relationship with your SAS education representative.
SAS® Customized Learning Portal

Custom learning portals (CLPs) are unique learning environments designed to provide everything needed to successfully implement and use SAS software.
Branded Sites
Each CLP is uniquely branded with company colors and logos. The CLP can even be customized for different groups within an organization.

E-Learning and Extended Learning Pages
Any course within the SAS e-Learning catalog can be added to a CLP. Extended learning pages containing course notes, white papers and other learning assets from instructor-based courses are also included.

Learning Paths
A CLP can be designed to display learning assets that are unique to different groups within an organization. Learning paths can include any training format: e-Learning, how-to videos, books and more. Learning paths provide access to customer-loaded materials located with their working environment.

Forums
A CLP can provide different forums for customers to discuss questions, answers and best practices with other SAS users within an organization or with SAS support staff.

Sign Up for On-Site Classes and Access to Other Learning
A CLP can be used to manage registration for on-site classes. Class size, student approval and wait lists can be monitored and managed by your team or SAS staff. This sign-up process can be used to request access to other learning resources (such as e-Learning and Live Web) not included in the portal.

Calendars
Each CLP shows upcoming events for an organization. The calendar can be managed on-site by the organization and can contain events planned for individual participants.

Digital Badging
All SAS e-Learning, instructor-based training and certifications are eligible for digital badges. Badges can be shared through social media or added to e-mail signatures, showing course completion or certification.

Robust Reporting
The CLP gives managers the ability to run reports on users’ interactions, time on-site and completion status. Reports can be scheduled and sent on a regular basis.

Want to learn more?
Contact us at:
saskurser@sas.com
kurser@swe,sas.com
kurs@nor.sas.com
koulutus@sas.com

To learn more, visit sas.com/training/clp
SAS® Global Certification Program

Make more of your SAS know-how

Analytical know-how is an important skill these days and is necessary in many companies. An SAS certificate is proof in black and white of your solid knowledge. This reassures your company that you work at the highest level and that you efficiently employ the SAS solution at your workplace. A competitive advantage for yourself and your company.

<table>
<thead>
<tr>
<th>Advantages for the user</th>
<th>Advantages for your company</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Documentation and recognition of your SAS know-how</td>
<td>• Staff members have more expertise in working with SAS software</td>
</tr>
<tr>
<td>• Confirmation of your own SAS software knowledge</td>
<td>• Increased productivity of staff members and teams</td>
</tr>
<tr>
<td>• Increased credibility as a SAS professional</td>
<td>• Clear criteria for development of staff and teams</td>
</tr>
<tr>
<td>• Improved career and market prospects</td>
<td>• Reliable inspection and documentation of SAS expertise</td>
</tr>
</tbody>
</table>

The SAS® Certifications

**SAS® Data Scientist**
- SAS® Certified Data Scientist Using SAS®9
  - SAS® Certified Big Data Professional Using SAS®9
  - SAS® Certified Advanced Analytics Professional Using SAS®9

**Advanced Analytics**
- SAS® Certified Predictive Modeler Using

**Foundation Tools**
- SAS® Certified Specialist: Base Programming Using SAS®9
- SAS® Certified Advanced Programmer for SAS®9
- SAS® Certified Clinical Trials Programmer Using SAS®9

**Business Intelligence and Analytics**
- SAS® Certified BI Content Developer for SAS®9

**SAS® Enterprise Miner™ 14**
- SAS® Certified Statistical Business Analyst Using SAS®9: Regression and Modeling

**Data Management**
- SAS® Certified Data Integration Developer for SAS®9
- SAS® Certified Data Quality Steward for SAS®9

**SAS® Administration**
- SAS® Certified Platform Administrator for SAS®9

**SAS® Certified Visual Business Analyst: Exploration and Design Using Visual Analytics**
- SAS® Certified Visual Modeler Using SAS® Visual Statistics 7.4
To run SAS® successfully, you need a team of individuals with different roles and different skill sets. But what skills do they need? And how can the skills they have already be considered?

Our Learning Needs Assessment (LNA) will help to clarify.

What does the LNA include?

In our competency assessment, you will get:

• Competency gap analysis to identify training requirements for each individual
• Identification of learning needs for each role within the team/organization
• Individuals’ current skills are measured against appropriate competencies
• Learning solutions that are tailored to specific skills and requirements
• Assessment of learning needs for employees at all stages of their careers as well as new hires to help plan their onboarding

Voucher for FREE intake - let us help develop your SAS team

We offer our first meeting at no cost. After this, you have a better idea about how to develop your SAS competencies, and whether a further task analysis and assessment of skills is needed.

Are you interested? Please contact us to arrange an individual appointment with your SAS education representative.
SAS® Certified Professional: AI & Machine Learning

Earn three specialist-level certifications and get a professional-level credential in artificial intelligence and machine learning automatically. It is a smart way to build your skill set and make yourself marketable in a field that is hungry for analytics and AI talent.

Includes:
- Five courses
  - Machine Learning Using SAS Viya
  - SAS Visual Text Analytics in SAS Viya
  - Deep Learning Using SAS Software
  - Forecasting Using Model Studio in SAS Viya 3.4
  - Optimization Concepts for Data Science and Artificial Intelligence
- Three certification exams
  - SAS Viya 3.4 Supervised Machine Learning Pipelines practice exam

SAS® CERTIFIED SPECIALIST - MACHINE LEARNING USING VIYA® 3.4
Find insights hidden in data without explicitly being told where to look or what to conclude with machine learning technology.

SAS® CERTIFIED SPECIALIST - NATURAL LANGUAGE AND COMPUTER VISION
Automatically extract critical business insights and emerging trends from large amounts of structured and unstructured content.

SAS® CERTIFIED SPECIALIST - FORECASTING AND OPTIMIZATION
Predict outcomes and find the best results given resource constraints with forecasting and optimization technology.
Build your own schedule over 12 months and save 50% on course and exam prices with the SAS AI and Machine Learning Professional Certification training package.
SAS® Academy for Data Science

Available as e-Learning - test 7 days for free!

Staff with analytical skills are very much in demand. They can research company data, discover business-relevant potential in large data quantities and present the results convincingly. The Academy is available in a self-paced format so that your learning can be very flexible in terms of time and place.

- Flexible learning with e-Learning allows on-the-job training
- Extended to one year
- Gain SAS Certified Data Scientist accreditation
- Face-to-face teaching available with 50% discount
- Intensive SAS training and introduction to R, Python, Pig, Hive and Hadoop

- Access to SAS software to learn and practice
- Case studies provide strong practical examples
- Exclusive community for participants and experts to exchange knowledge

Available as e-Learning - test 7 days for free!

Interested?
Contact us at
saskurser@sas.com
kurs@nor.sas.com
kurser@swe.sas.com
koulutus@sas.com

www.sas.com/sas/data-science-academy