

# Software and systems

732A60 - Seminar 4

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Before getting on to the hot stuff

Välkomna / Welcome!

# The programme of the week, so far

Seminar 1 Welcome!

Seminar 2 Equal opportunities

Seminar 3 Study advisor and stress management

Seminar 4 Software and systems

Seminar 5 Writing reports: (R)Markdown and L<sup>A</sup>T<sub>E</sub>X

Seminar 6 Library session. Search and find scientific publications

Seminar 7 Scientific method and data ethics

Seminar 8 Summaries and critical reviews. Introduction to the project work.

## What was changed from the previous year

Following (6) student feedback, and some personal initiative:

- Additional tools and activities: less lectures, and more quizzes (not graded)
- More resources for mathematical typesetting

- 1 Introduction
- 2 General softwares
- 3 Statistical and ML softwares

# Software and Systems at LiU

## General

- Lisam, TimeEdit, Teams, Zoom
- IT support at LiU
- Remote login
- LiU-ID and LiU-card

## Specific

- R, Rstudio

- 1 Introduction
- 2 General softwares
- 3 Statistical and ML softwares

# TimeEdit

- Timetable for courses
- <https://cloud.timeedit.net/liu/web/schema/>
  - Choose English
- Search for:
  - Courses
  - Rooms
  - Teacher, student groups, teaching activity
- When you have a schedule:
  - Subscribe to other calendar apps
  - Download
- [Maps](#)
  - Try to find: SU10, A2, S10, KEY1



# LISAM

What is LISAM?

- Learning platform
- Email, calendar, OneDrive, Office online, and more
- Course room: one for each course
- LISAM: <https://lisam.liu.se>
- [More info](#)

# LISAM starting page

The screenshot shows the LISAM starting page on a SharePoint site. The top navigation bar is blue with the 'liu' logo, 'SharePoint', and a search bar. Below this, a light blue header contains 'Start / Lisam' and 'Courses and programs'. The main content area has a left sidebar with icons for home, documents, and other site features. The main content is divided into two sections: 'Courses and programs' and 'Upcoming for you'. The 'Courses and programs' section lists several courses with their IDs, titles, and campus locations. The 'Upcoming for you' section shows a message indicating that the user has no courses to register for, exam registration, or course evaluation to do.

liu SharePoint Search across sites

Start / Lisam Courses and programs

LISAM Lisam Home Courses and programs Lisam news Upcoming English

### Courses and programs

Show all

732A64 - Master Thesis in Statistics VT25, Campus Valla	
DID_HA55A - 2501Supervision of independent (degree) projects VT25, Campus Valla	
DID_NY - 2502Higher Education Pedagogy for New Teachers VT25, Campus Valla	
732A99 - Machine Learning HT24, Campus Valla, <sup>CO</sup> Joined course	
TDD601 - Machine Learning HT24, Campus Valla	
SAK_LADOK - Ladok-Training and Test HT22	
LISAMINSPIEN - Lisam inspiration HT28	
ITUT8 - Lisam inspiration VT20	
IKTDEM02 - IKT-pedagogernas demorum VT19, Campus Valla	
LIUSEQUALCOURSE - LIU's Equal Opportunities Course VT19	

### Upcoming for you

Show all

You currently have no course to register for, exam registration or course evaluation to do.

# LISAM starting page

Log in as a student

- Courses and Programs: see all courses you are registered for
- News feed: you find comments from courses and program rooms you have chosen to follow
- About me (edit the profile) in my Microsoft 365-profile
- LISAM support
- Dots in the upper left corner: apps

## Lisam: Course room

- Home: course home page with news feed
- Course plan: compressed information about the course, teaching, examination and admission requirements
- Course documents: course materials (lectures) and other files uploaded by the teacher(s)
- Collaborative workspace: teachers and students can publish files there and make comments
- Members and groups
- Schedule: link to schedule
- Assessment record: the overview of your grades
- Submissions: you may find here your labs/assignments and submit your solutions.

# Teams

You may find it in Lisam, among the other apps (remember the dots in the upper left corner?)

- Software for collaboration and communication
- Chat, voice and video meetings, file sharing
- Team
  - Collaboration space
  - Uses channels for different topics
- Used in some courses
  - Can be connected to course rooms on Lisam
- Students can use it for labs and projects
  - Make sure to make your channels and documents private if you are using Teams for mandatory assignments to avoid plagiarism

# Zoom

- Software for video meeting
- [Information about Zoom](#)

- 1 Introduction
- 2 General softwares
- 3 Statistical and ML softwares

## Statistical and ML softwares

- Free of charge
  - R
  - Python, Julia
  - Stan, WinBugs, JAGS
  - Apache Spark
- Commercial
  - SAS
  - Minitab
  - SPSS
  - Matlab
  - Microsoft SQL Server

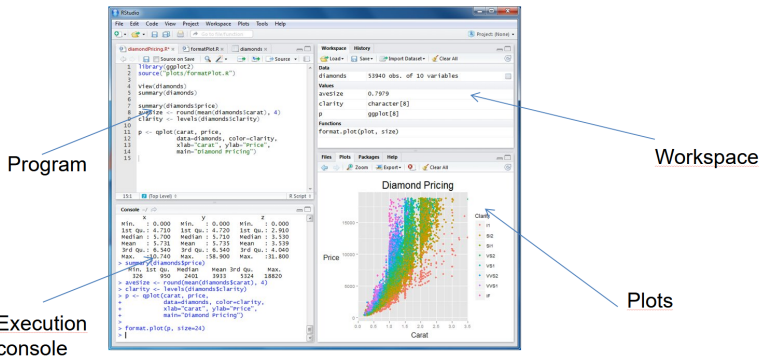


# R programming language

- Scope: data handling, visualisation, statistics, machine learning, scientific computing
- Open course and free
- High level interpreted language
- Popular within Statistics and Machine Learning
- Functional and object oriented language
- Installation: see CRAN ([The Comprehensive R Archive Network](#))

# Rstudio

- Recommended integrated development environment (IDE) for R
- Download: [here](#)
  - Choose **Download Rstudio Desktop: Open Source Edition**



## R demo

An R file is available at the [course homepage](#)

# R-packages

- CRAN
  - 22407 available packages (as of 2025-07-08)
  - Varying quality and documentation
- Other examples can also be found on [Github](#)

## More examples of R-packages!

- Data handling
  - [Tidyverse](#)
  - `dplyr`, `tidyr`
- Visualization (See course [765A98 Visualization](#))
  - `ggplot2`, `ggmap`
  - `plotly`, `shiny`
- Data
  - `readr`, `lubridate`, `stringr`, `pxweb`
- Modeling
  - `lm`, `glm`, `stan`, `bart`, `glmnet`, `xgboost`, `tensorflow`, `torch`
- Longer list of good packages: [here](#)
- CRAN [task views](#)
  - For example: [Machine Learning & Statistical Learning](#)

# Do you want some more R?

- Course: [732A94 Advanced Programming in R](#)
- Additional links:
  - [R for Data Science](#)
  - [Advanced R](#)
  - [R packages](#)

# Computer labs

- SU-rooms: Linux
  - Open terminal with `Ctrl + Alt + T`
  - Load course module
    - Write `module add courses/732A94` then press enter
  - Load R, Rstudio and packages
    - Write `module add prog/r-mega-edition/21.10` then press enter
  - After loading a module, write `rstudio` in the terminal, press enter
- PC-rooms: Windows
- Free to use when not booked
- Can be used [remotely](#)

Thank you for your attention!

[www.liu.se](http://www.liu.se)