Statistics and Data Analysis

Department of Statistics
Fall 2024

Website and course info

Course webpage

- Statistics and Data Analysis for Business Administration
- Statistics and Data Analysis for Computer and Systems Sciences
- Syllabus, schedule, etc.

Athena (almost all that you will need)

- Start the Athena app or log in here
- Log in $\Longrightarrow$ "Statistics and Data Analysis for..."
- All essential course documents and materials

Three documents

- **Syllabus (kursplan):**
  Course contents, learning goals, overall conditions and requirements (legally binding document).
- **Course description (kursbeskrivningen):**
  Specific for this semester (deadlines, teachers, etc.)
- **Teaching plan and reading list (läsanvisningar):**
  - Chapters and sections in the course literature for each lecture.
  - Exercises for each exercise session.
  - It may be adjusted along the course.

Contents of the course

The course is divided in two parts.

- Part 1:
  - Exploring and understanding data.
  - Exploring relationships between variables.
- Part 2:
  - Gathering data.
  - Randomness and probability.
  - Inference for one parameter.
  - Inference for relationships.

Examination

The course is examined through four tests:

- Part 1:
  - Test 1. Written exam (4.5 credits)
  - Test 2. Home assignment (3 credits)
- Part 2:
  - Test 3. Written exam (6 credits)
  - Test 4. Home assignment (1.5 credits)

Home assignments

- To be solved in groups of 3 or 4 students;
- Two chances for each assignments (check deadlines);
- If you fail on the first deadline, you can correct and revise your work and re-submit;
- You cannot revise and complete a failed assignment after the second deadline;
- Cooperation is allowed and encouraged...even between groups;
- **Plagiarism is not allowed!**
- Text matching software may be used;
- Using artificial intelligence tools (e.g. openAI) is not allowed.

Written exams

- To be solved individually. Cooperation is not allowed;
- Outline: Minimum 50 points of 100 for a pass;
  - Multiple choice questions (60% of total);
  - Problems with written solutions (40% of total);
- Approved aids:
  - Formula sheet provided by the department;
  - Calculator without stored text or data. Cell phones are not approved as calculators.
- For special requirements contact our Student counsellor (studievagledare@stat.su.se)

Grading

- Assignments: Pass or Fail (G or U);
- Exams:

Points	0—39	40—49	50—59	60—69	70—79	80—89	90—100
Grade	F	Fx	E	D	C	B	A

F and Fx are both failing grades that require re-examination. Supplementary assignments in order to raise an Fx to a passing grade is not permissible for this course.

Grading, cont.

- Course: A minimum grade of E on Tests 1 and 3 and a grade of G on Tests 2 and 4 is required for a passing grade.

		Grade Test 3				
		A	B	C	D	E
Grade Test 1	A	A	B	B	C	C
	B	A	B	C	C	D
	C	B	B	C	D	D
	D	B	C	C	D	E
	E	C	C	D	D	E

Learning goals

- Account for different data collection methods and data sources;
- Explain basic statistical concepts;
- Process data, describe data numerically and graphically and perform analyzes through basic programming in R;
- Formulate statistical models and solve basic problems in probability theory and inference;
- Perform regression and time series analysis and select the appropriate model for a few dif-ferent types of cases;
- Interpret, evaluate and critically review results with regard to relevant scientific aspects.

Course literature

- De Veaux, R., Velleman, p. and Bock, D. *Stats: Data and Models.* Pearson, Global Edition. Fifth edition.

  Pearson has a co–operation with Stockholms universitets studentkår (SUS) and Föreningen Ekonomerna (FEST) where members get 25% discount on digital material from Pearson. When you become a member you get your discount code which you apply at "check-out".

- Other course material such as lecture notes, exercises, instructions for submissions and more are posted on the course page in Athena. There you can also find some preliminary instructions of reading and exercises exercises for each teaching session.

Scheduled teaching sessions (BA)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10					
46	November 11—17					
47	November 18—24					
48	November 25—01					
49	December 02—08					
50	December 09—15					
51	December 16—22					
52	December 23—29					
01	January 30—05					
02	January 06—12					
03	January 13—19					

Scheduled teaching sessions (BA)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10		L1 08—10	L2 08—10		L3 15—17
46	November 11—17	L4 14—16	L5 10—12		L6 15—17	
47	November 18—24	L7 08—10	L8 09—11	L9 08—10	L10 13—15	
48	November 25—01					
49	December 02—08	L11 10—12	L12 10—12	L13 10—12	L14 10—12	
50	December 09—15	L15 10—12		L16 09—11 L17 12—14		L18 08—10
51	December 16—22	L19 08—10	L20 10—12		L21 15—17	
52	December 23—29					
01	January 30—05					
02	January 06—12		L22 08—10	L23 11—13	L24 10—12	
03	January 13—19					

Scheduled teaching sessions (BA)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10		L1 08—10	L2 08—10		L3 15—17
46	November 11—17	L4 14—16	L5 10—12 E1 15—17		E2 11—13 L6 15—17	E3 11—13
47	November 18—24	L7 08—10	L8 09—11 E4 15—17	L9 08—10	L10 13—15	E5 13—15
48	November 25—01	E6 14—16				
49	December 02—08	L11 10—12	L12 10—12	L13 10—12 E7 13—15	L14 10—12	
50	December 09—15	L15 10—12 10E8 15—17	E9 13—15	L16 09—11 L17 12—14		L18 08—10 E10 12—14
51	December 16—22	L19 08—10 E11 15—17	L20 10—12		L21 15—17	E12 10—12
52	December 23—29					
01	January 30—05					
02	January 06—12		L22 08—10	L23 11—13 E13 14—16	L24 10—12	E14 10—12
03	January 13—19	E15 10—12				

Scheduled teaching sessions (BA)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10		L1 08—10	L2 08—10 C1 10—14	C1 10—12	L3 15—17
46	November 11—17	C2 08—14 L4 14—16	L5 10—12 E1 15—17	C3 08—10,12—16	E2 11—13 L6 15—17	E3 11—13
47	November 18—24	L7 08—10	L8 09—11 E4 15—17	L9 08—10 C4 15—17	C4 08—12 L10 13—15	E5 13—15
48	November 25—01	E6 14—16				
49	December 02—08	L11 10—12	L12 10—12	L13 10—12 E7 13—15	L14 10—12 C5 15—17	C5 10—14
50	December 09—15	L15 10—12 10E8 15—17	E9 13—15	L16 09—11 L17 12—14	C6 08—10,12—16	L18 08—10 E10 12—14
51	December 16—22	L19 08—10 E11 15—17	L20 10—12	C7 08—10,12—16	L21 15—17	E12 10—12
52	December 23—29					
01	January 30—05					
02	January 06—12		L22 08—10 C8 12—16	C8 08—10 L23 11—13 E13 14—16	L24 10—12	E14 10—12
03	January 13—19	E15 10—12				

Scheduled teaching sessions (BA)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10		L1 08—10	L2 08—10 C1 10—14	C1 10—12	L3 15—17
46	November 11—17	C2 08—14 L4 14—16	L5 10—12 E1 15—17	C3 08—10,12—16	E2 11—13 L6 15—17	E3 11—13
47	November 18—24	L7 08—10	L8 09—11 E4 15—17	L9 08—10 C4 15—17	C4 08—12 L10 13—15	E5 13—15
48	November 25—01	E6 14—16			Exam 14—18	
49	December 02—08	L11 10—12	L12 10—12	L13 10—12 E7 13—15	L14 10—12 C5 15—17	C5 10—14
50	December 09—15	L15 10—12 10E8 15—17	E9 13—15	L16 09—11 L17 12—14	C6 08—10,12—16	L18 08—10 E10 12—14
51	December 16—22	L19 08—10 E11 15—17	L20 10—12	C7 08—10,12—16	L21 15—17	E12 10—12
52	December 23—29					
01	January 30—05					
02	January 06—12		L22 08—10 C8 12—16	C8 08—10 L23 11—13 E13 14—16	L24 10—12	E14 10—12
03	January 13—19	E15 10—12		Exam 08—13		

Scheduled teaching sessions (CS)

Week	Date	Monday	Tuesday	Wednesday	Thursday	Friday
45	November 04—10		L1 08—10	L2 08—10 C1 14—16		C2 08—12 L3 15—17
46	November 11—17	L4 14—16	L5 10—12 E1 15—17	C3 10—12	E2 11—13 L6 15—17	E3 11—13
47	November 18—24	L7 08—10	L8 09—11 E4 15—17	L9 08—10 C4 10-12,13-15	L10 15—17	E5 13—15
48	November 25—01	E6 14—16			Exam 14—18	
49	December 02—08	L11 10—12	L12 10—12	L13 10—12 E7 13—15	L14 10—12 C5 13—15	
50	December 09—15	L15 10—12 10E8 15—17	E9 13—15	L16 09—11 L17 12—14	C6 10—12	L18 08—10 E10 12—14
51	December 16—22	L19 08—10 E11 15—17	L20 10—12	C7 10—12	L21 15—17	E12 10—12
52	December 23—29					
01	January 30—05					
02	January 06—12		L22 08—10 C8 10—12	L23 11—13 E13 14—16	L24 10—12	E14 10—12
03	January 13—19	E15 10—12		Exam 08—13		

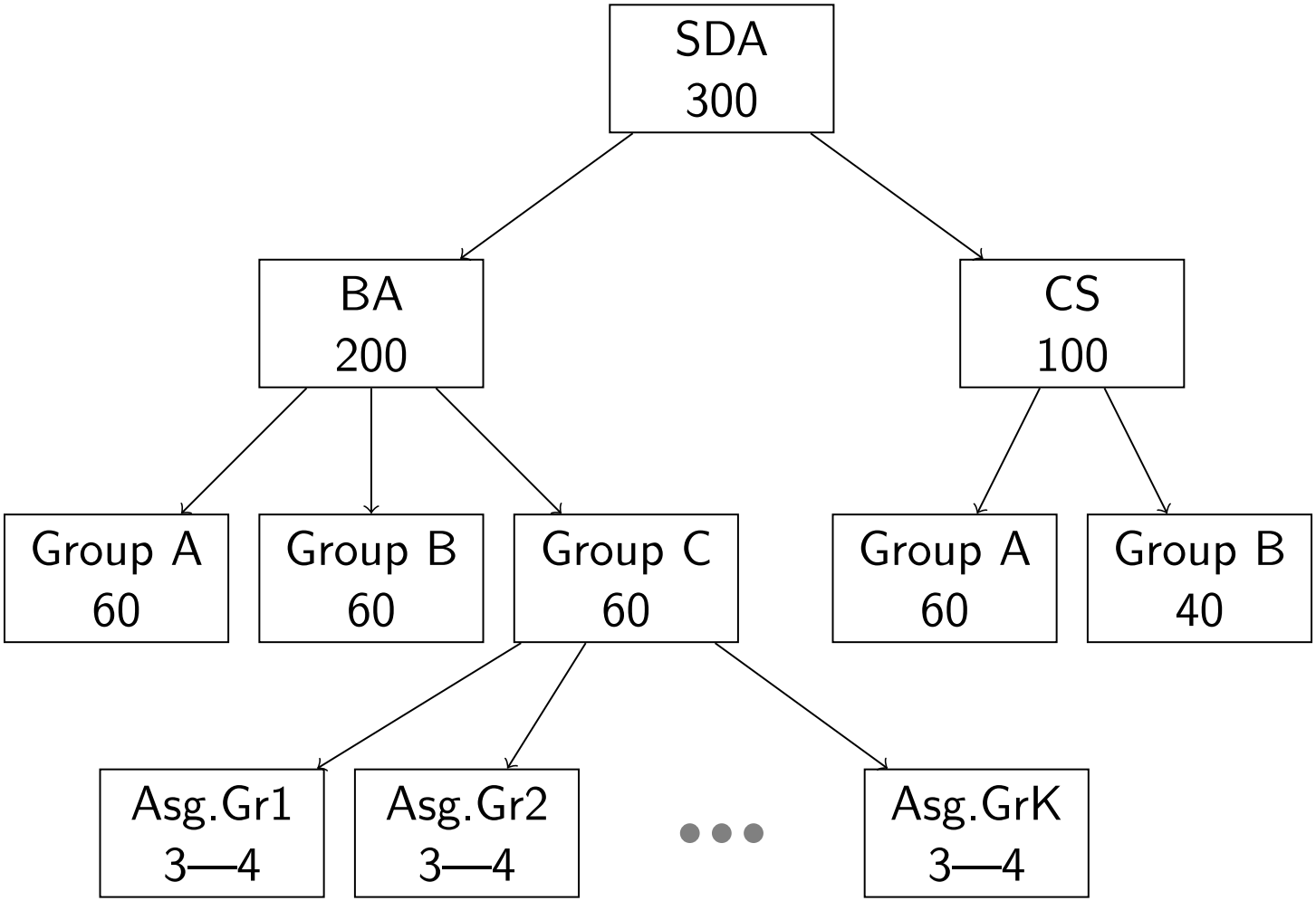
Scheduled teaching sessions

- In addition there are 11 recitations (jour) scheduled;
- Attendance to the first lecture is mandatory;
- Attendance to any other session in the course is voluntary but strongly recommended.

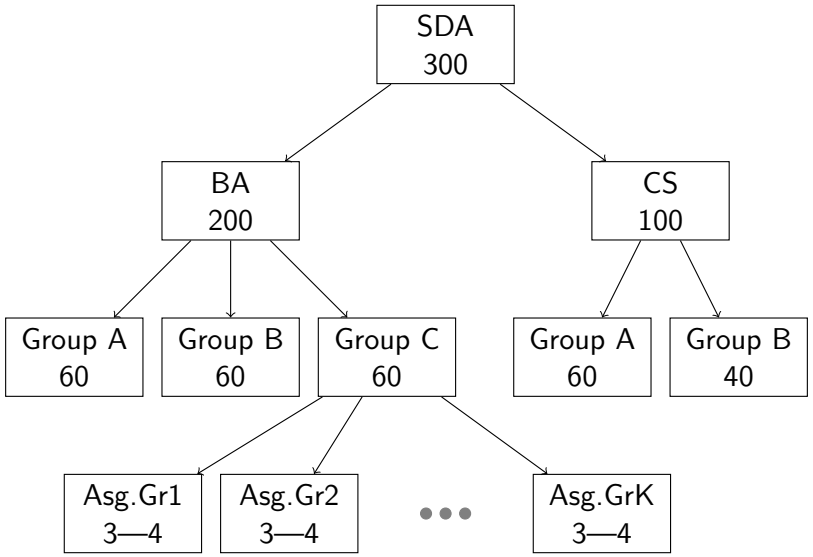
Teachers

Teacher	Role
Edgar Bueno	Examiner
	Lectures (Part 1)
	Exercise sessions (Part 1)
Ulf Högnäs	Lectures (Part 2)
	Home assignments
	Computer labs
Ralf Xhaferi	Exercise sessions (Part 2)
	Recitations (Jour)
	Home assignments
	Computer labs
Diana Djabang	Home assignments
	Computer labs
Fredrik Stenkvist	Home assignments
	Computer labs

Groups


SDA
300
BA
200
CS
100
Group A
60
Group B
60
Group C
60
Group A
60
Group B
40
Asg.Gr1
3—4
Asg.Gr2
3—4
Asg.GrK
3—4

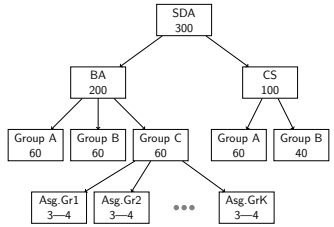
Groups, cont.



Choose your **group** no later than November 10 (Sunday), 23.59

- Resources/Group selection
- Used for: computer labs.

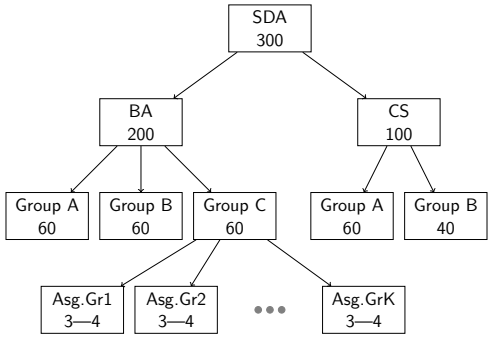
Groups, cont.



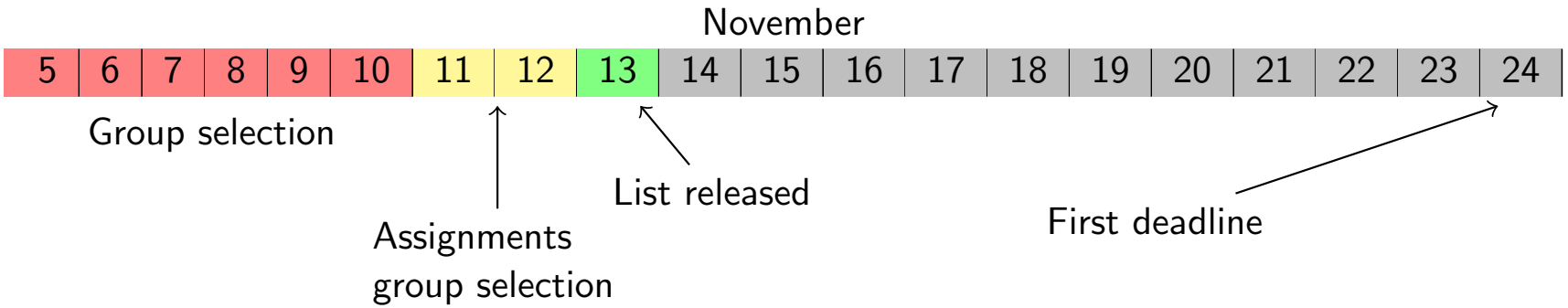
Once you have chosen a **group**, create an **assignments group** no later than November 12 (Tuesday), 23.59

- Resources/Assignments/AssignmentsGroup.xlsx (active from November 11, Monday, 00.00)
- Choose the sheet for your **group**
- Fill in the information of the members (3 or 4 students per **assignments group**)
- All members of the **assignments group** should belong to the same **group**
- If you don't have an **assignments group**, scroll down and fill in your information. We will find one for you.

Groups, cont.



On November 13 (Wednesday) we will publish the list of **assignments groups**.



Lectures

- Edgar Bueno (first part) and Ulf Högnäs (second part);
- 24 lectures (10 first part and 14 second part);
- Plenary, except of L10;
- Based on Stats, Data and Models.

Exercise sessions

- Edgar Bueno (first part) and Ralf Xhaferi (second part);
- 15 exercise sessions (6 first part and 9 second part);
- Plenary;
- Most exercises taken from Stats, Data and Models;
- Solutions to selected exercises are available.

Computer labs

- Ulf Högnäs, Ralf Xhaferi, Diana Djabang and Fredrik Stenkvist;
- Eight computer labs;
- Around 60 students in the same session;
- R

Recitations (Jour)

- Ralf Xhaferi;
- 11 recitations;
- “Plenary”;
- “Study room”;
- Unprepared. Not lectures;
- The teacher is there to clarify, not to solve exercises or impart theory.

Assignments

- Ulf Högnäs, Ralf Xhaferi, Diana Djabang and Fredrik Stenkvist;
- Two assignments;
- Assignments groups of 3 or 4 students;
- Deadlines on Sundays.

Week	Date	Activity
47	November 24	Assignment 1, First submission
48	December 01	Assignment 1, First feedback
49	December 08	Assignment 1, Second submission
50	December 15	Assignment 1, Second feedback
02	January 12	Assignment 2, First submission
03	January 19	Assignment 2, First feedback
04	January 26	Assignment 2, Second submission
05	February 02	Assignment 2, Second feedback