

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All information / news / exercises etc.pp. can be found online:

<https://kurser.math.su.se/> (Course: DA7065)

Lectures are weekly: WED 10-12am and FRI 1-3pm

Lectures in the week 11 Feb - 16 Feb 2024 will be replaced by video-lectures (more detail will be announced)

Course examination:

- ▶ 3 home assignments (total 6 credits)
- ▶ 1 oral or written exam (1.5 credits, P/F)

You pass the course, if you have in total at least 50% of the home assignments correct and if you pass the oral exam

For those taking this course as PhD-course, additional assignment(s) are required [will be specified at homepage]

Q: How many Phd-students?

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! **NOTE algorithms as for finding genes can easily be applied to find plagiarism ;)** (Exercise!)

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! NOTE algorithms as for finding genes can easily be applied to find plagiarism ;) (Exercise!)

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! NOTE algorithms as for finding genes can easily be applied to find plagiarism ;) (Exercise!)

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! NOTE algorithms as for finding genes can easily be applied to find plagiarism ;) (Exercise!)

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! **NOTE algorithms as for finding genes can easily be applied to find plagiarism ;)** **(Exercise!)**

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

All solutions must be provided in English

Team work to discuss the exercises is allowed and also recommended, **BUT:**

- ▶ everyone has to hand in an individual and independent solution of the exercises
- ▶ you must be able to explain your solutions upon request
- ▶ no copies of solutions
- ▶ never forget name + student number

The deadlines when to hand-in are specified at DA7065 web page.

When handing in programming exercises, always document how to compile and run your program (if needed). Well-commented source code is required.

Do NEVER copy source-code from WWW! **NOTE algorithms as for finding genes can easily be applied to find plagiarism ;)** (**Exercise!**)

Upload the files (as pdf / zipped source code of prgs) at the DA7065 web page under the respective assignment link.

And now: “Happy Computational Biology!”

Questions?

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

From a general point of view, the aim of this course is to learn about:

- ... common problems in molecular biology
- ... to formalize biological problems (i.e.: how to turn a fuzzily described problem to a mathematical/computational problem)
- ... algorithmic techniques for solving common problems in molecular biology
- ... function and implementation of important bioinformatics software

All these need (some) knowledge in computer science and mathematics.

The knowledge about biology you need here, will be provided in this course.

Putative outline:

- 1 Some history (Warm Up + Cracking the genetic code)
- 2 DNA sequencing
- 3 String matching (Z-Alg and Suffixtrees)
- 4 Comparing sequences (Alignments and Co)
- 5 RNA structures
- 6 Phylogenomics
- 7 Homology Relations
- 8 Phenotypespaces and Graph Products