# Basic course 4-8: Logic and Discrete Mathematics - Blok C

## About the course

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| subject | Den Naturvidenskabelige Bacheloruddannelse / Den internationale naturvidenskabelige bacheloruddannelse |
| Activity type | Basic course |
| Teaching language | English |
| Registration | Tilmelding sker via stads selvbetjening indenfor annonceret tilmeldingsperiode, som du kan se på Studieadministrationens hjemmeside<br><br>Når du tilmelder dig kurset, skal du være opmærksom på, om der er sammenfald i tidspunktet for kursusafholdelse og eksamen med andre kurser, du har valgt. Uddannelsesplanlægningen tager udgangspunkt i, at det er muligt at gennemføre et anbefalet studieforløb uden overlap. Men omkring valgfrie elementer og studieplaner som går ud over de anbefalede studieforløb, kan der forekomme overlap, alt efter hvilke kurser du vælger.<br><br>Registration is happing through stads selvbetjeningwithin the announced registration period, as you can see on the Studyadministration homepage.<br><br>When registering for courses, please be aware of the potential conflicts between courses or exam dates on courses. The planning of course activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/ or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose. |
| Foreign language reading proficiency | English at a level equivalent to the Danish gymnasium level B. |
| Objectives description (assessment criteria) | The goal of the course is that the student acquires: **Knowledge:** • Preliminary knowledge of logic and discrete mathematics and the understanding of what is going on in a given situation when it is applied. Skills: • Oral and written presentation of logical and algorithmic reasoning Kompetencies: • The use of logic and discrete mathematics as a means for modeling and as a tool for specification and communication in relevant scientific (not least computational) connections. ** CURRICULUM FOR THE BACHELOR STUDY PROGRAMME IN NATURAL SCIENCES § 19**. Courses BK 4 to BK 8: Courses in the natural sciences: The objectives of courses BK 4 to BK 8 are to give students a broad introduction to and basic knowledge of the natural sciences with the aim of enabling them to make a qualified choice of subject modules, and to complete these. |
| Overall content | The course will address propositional- and predicate logic (informal as well as formal), sets and functions, algorithms, mathematical induction, formal languages. |
| Detailed description of content | Please contact Torben Braüner (torben@ruc.dk) for more information.<br><br>Information about the previous edition of the course can be found here:<br><br>http://webhotel4.ruc.dk/~torben/Spring18DiscreteMath.html |
| Teaching and working methods | Survey lectures, group and individual work both with theory building problems and traditional exercises, and regular assignments (home work). |
| Course material and Reading list | Kenneth H. Rosen, Discrete Mathematics and Its Applications, International Version, 6th edition, Mc-Graw Hill.<br><br>ISBN-13: 978-0071244749, ISBN-10: 0071244743<br><br>The book can be bought a number of places, for example at Amazon: https://www.amazon.com/Discrete-Mathematics-Applications-International-Version/dp/0071244743/ref=sr_1_1?s=books&ie=UTF8&qid=1358745865&sr=1-1&keywords=9780071244749<br><br>Beware: The book comes in a number of different editions, it's important that you get hold of the correct version specified above - please check the ISBN number. |

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| | Further material will be made available at Moodle. |
| Form of examination | Individual oral exam with a duration of 15 minutes based on two or three individual mini projects |
| Form of re-examination | Individual oral exam with a duration of 15 minutes based on two or three individual mini projects |
| Examination type | Individual examination |
| Assessment | 7-point grading scale |
| Moderation | Internal (i.e. course lecturer and an internal examiner assess) |
| Evaluation- and feedback forms | All courses include formative evaluation during the course based on dialogue between the students and the teacher(s). All courses are also evaluated through a questionnaire in SurveyXact and oral evaluation at the end of the course. The Study Board will handle all evaluations along with any comments from the course responsible teacher. |
| Responsible for the activity | Morten Blomhøj (blomhoej@ruc.dk)<br>Torben Braüner (torben@ruc.dk) |
| teacher | Torben Braüner (torben@ruc.dk) |
| Administration of exams | Natbach Studieadministration (natbach-studieadministration@ruc.dk) |
| STADS stamdata | Basic course<br>workload : 5 ECTS activitycode : U24756 / U26571<br>exam form : Internal / Intern (ut) grading : 7-point grading scale censorship : ingen censur / Internal censor |

Course days:

## Hold: 1

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 1

| | |
|---|---|
| time | 12-03-2019 13:15 til<br>12-03-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 2

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|---|---|
| time | 14-03-2019 13:15 til<br>14-03-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |

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|---|---|
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 3

| | |
|---|---|
| time | 19-03-2019 13:15 til<br>19-03-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 4

| | |
|---|---|
| time | 21-03-2019 13:15 til<br>21-03-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 5

| | |
|---|---|
| time | 26-03-2019 13:15 til<br>26-03-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 6

| | |
|---|---|
| time | 28-03-2019 13:15 til<br>28-03-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |

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|---|---|
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 7

| | |
|---|---|
| time | 02-04-2019 13:15 til<br>02-04-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 8

| | |
|---|---|
| time | 04-04-2019 13:15 til<br>04-04-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 9

| | |
|---|---|
| time | 09-04-2019 13:15 til<br>09-04-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 10

| | |
|---|---|
| time | 11-04-2019 13:15 til<br>11-04-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |

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|---|---|
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 11

| | |
|---|---|
| time | 16-04-2019 13:15 til<br>16-04-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 12

| | |
|---|---|
| time | 23-04-2019 13:15 til<br>23-04-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 13

| | |
|---|---|
| time | 25-04-2019 13:15 til<br>25-04-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 14

| | |
|---|---|
| time | 30-04-2019 13:15 til<br>30-04-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |

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|---|---|
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Lecture 15

| | |
|---|---|
| time | 02-05-2019 13:15 til<br>02-05-2019 15:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 27.2-054 - lokale 3 (40) |
| Content | Please see Moodle |
| Reading list | Please see Moodle |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Examination

| | |
|---|---|
| time | 12-06-2019 13:15 til<br>12-06-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 28a.2-11 - mødelokale a2 (20) |
| Content | Individual oral exam with a duration of 15 minutes based on two or three individual mini projects |

## NATBACH: Basisc course 4-8; Logic and discrete mathematics - Re-examination

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|---|---|
| time | 15-08-2019 13:00 til<br>15-08-2019 17:00 |
| forberedelsesnorm | ikke valgt |
| forberedelsesnorm D-VIP | ikke valgt |
| location | 09.1-023 - mødelokale (8) |
| Content | Individual oral exam with a duration of 15 minutes based on two or three individual mini projects |

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| STADS stamdata | Basic course | | |
| | workload : 5 ECTS | activitycode : U24756 / U26571 | |
| | exam form : Internal / Intern (ut) | grading : 7-point grading scale | censorship : ingen censur / Internal censor |