

Basic course 4-8: Linear Algebra - Blok B

About the course

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| Subject | Den Naturvidenskabelige Bacheloruddannelse / Den internationale naturvidenskabelige bacheloruddannelse |
| Activitytype | basic course |
| Teaching language | English |
| Registration | <p>Tilmelding sker via stads selvbetjening indenfor annonceret tilmeldingsperiode, som du kan se på Studieadministrationens hjemmeside</p> <p>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.</p> <p>Registration is happening through stads selvbetjening within the announced registration period, as you can see on the Studyadministration homepage.</p> <p>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.</p> |
| Academic prerequisites | A certain level of knowledge in mathematics obtained during upper secondary school corresponding to A-level in mathematics in the Danish Gymnasium. |
| Objectives description (assessment criteria) | <p>The course gives the student: - familiarity with the central concepts and processes of fundamental linear algebra; - ability to activate these concepts and processes on mathematical and extra-mathematical problems; - understanding the possibility, the importance, and the range of the construction of a rigorous and coherent mathematical topic, applicable to a variety of apparently different problems.</p> <p>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.</p> |
| Overall content | Linear algebra in the real number space \mathbb{R}^n and subspaces thereof, linear transformations, basis and dimension, matrices, eigenvalues, systems of linear equations. |
| Detailed description of content | We will start from basic matrix algebra and build up from there a knowledge base about \mathbb{R}^n and subspaces there of and of linear transformations, basis and dimension, matrices, eigenvalues, systems of linear equations. |
| Teaching and working methods | The teaching will be a mixtures of lectures and exercise-solving classes. |
| Expected work effort (ects-declaration) | Preparation : Before classes 20 hours Classes : 20 double classes Post class reading and exercises: 60 hours Preparation for Exam and Exam 15-20 hours |
| Course material and reading list | The text book for the course will be parts of (approx the first five chapters of) "Elementary Linear Algebra with Supplemental Applications 11th ed., International Student version" by Howard Anton and Chris Rorres, John Wiley & Sons Inc, ISBN: 9781118677452 |
| Form of examination | The course grade is 50% based on the average grade of the hand-in exercises (a minimum of two of these must be passed) and 50% based on the grade at the oral exam. |
| Form of re-examination | Same as ordinary test. |
| Examination type | Individual examination |

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| Exam aids | Non-communicative devices, ie. Computer and written material can be used, but not mobil phones ect. | | |
| Assessment | 7-point grading scale | | |
| Moderation | None (i.e. course lecturer assesses) | | |
| Evaluation- and feedback forms | The course is evaluated according to the evaluation scheme developed by the study board for INM. This consists of a midterm evaluation and a final evaluation (both are discussions between the course professor and the class. The final evaluation is supplemented with a blinded written evaluation through survey exact. The teaching will be dialog based with ample possibilities for feed back both personally and as a class. | | |
| The responsible course lecturer | Carsten Lunde Petersen (lunde@ruc.dk) Morten Blomhøj (blomhoej@ruc.dk) | | |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) | | |
| Administration of exams | Natbach Studieadministration (natbach-studieadministration@ruc.dk) | | |
| STADS stamdata | Basic course | | |
| | Workload : 5 ECTS | Activitycode : U24751 | |
| | Exam form : Andet (ut) | Grading : 7-point grading scale | Censorship : ingen censur |

Course days:

Hold: 1

NATBACH: Basic course 4-8; Linear Algebra - Lecture 1

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|----------------------------|--|--|--|
| Time | 11-03-2019 13:15 til 11-03-2019 17:00 | | |
| Forberedelsesnorm | Ikke valgt | | |
| Forberedelsesnorm d-vip | Ikke valgt | | |
| Location | 27.1-089 - teorirum 27 (66) | | |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) | | |
| Content | A detailed program for the course will be available via Moodle. Below is a sample which shows the program for the first lecture. Read chapter 1.1-1.4 Set of exercises lecture 1: Chapter 1 Exercise set 1 p. 75 and forward: 6., 7., 9., 11., 13., 17., 19., 21., 27., 29., 31., 33., 59., 77., 79., 87., 91., 93., 95., 96., 119. | | |
| Reading list | Chapter 1.1-1.4 | | |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 2

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| Time | 14-03-2019 10:15 til 14-03-2019 12:00 |
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| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |
| Content | See, the previous class |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 3

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|-------------------------|--|
| Time | 18-03-2019 13:15 til 18-03-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 4

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|-------------------------|--|
| Time | 21-03-2019 10:15 til 21-03-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 5

| | |
|-------------------------|--|
| Time | 25-03-2019 13:15 til 25-03-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 6

| | |
|-------------------------|--|
| Time | 28-03-2019 10:15 til 28-03-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 7

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|-------------------------|--|
| Time | 01-04-2019 13:15 til 01-04-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 8

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|-------------------------|--|
| Time | 04-04-2019 10:15 til 04-04-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 9

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|-------------------------|--|
| Time | 08-04-2019 13:15 til 08-04-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 10

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|-------------------------|--|
| Time | 11-04-2019 10:15 til 11-04-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 11

| | |
|-------------------------|--|
| Time | 15-04-2019 13:15 til 15-04-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 12

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|-------------------------|--|
| Time | 25-04-2019 10:15 til 25-04-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 13

| | |
|-------------------------|--|
| Time | 29-04-2019 13:15 til 29-04-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 11.2-047 - gl. natfagsal (65) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

NATBACH: Basic course 4-8; Linear Algebra - Lecture 14

| | |
|-------------------------|--|
| Time | 02-05-2019 10:15 til 02-05-2019 12:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

Basic course 4-8; Linear Algebra - Examination

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|-------------------------|--|
| Time | 11-06-2019 08:15 til 12-06-2019 17:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |
| Location | 27.1-089 - teorirum 27 (66) / 27.2-054 - lokale 3 (40) |
| Teacher | Carsten Lunde Petersen (lunde@ruc.dk) |

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| Content | The course grade is 50% based on the average grade of the hand-in exercises (a minimum of two of these must be passed) and 50% based on the grade at the oral exam. |
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Basic course 4-8; Linear Algebra - Re-examination

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| Time | 06-08-2019 08:15 til 06-08-2019 18:00 |
| Forberedelsesnorm | Ikke valgt |
| Forberedelsesnorm d-vip | Ikke valgt |

Location (when shared activity) 27.1-052 - lokale 2 (20)

STADS Basic course

stamdata Workload : 5 ECTS

Exam form : Andet (uf)

Activitycode : U24751

Grading : 7-point grading scale

Censorship : ingen censur