

# Inorganic Chemistry

Title Inorganic Chemistry  
Semester F2024  
Master programme in Kemi / Chemical Biology

Type of activity Course

Teaching language English

Study regulation Read about the Master Programme and find the Study Regulations at [ruc.dk](https://ruc.dk)

Læs mere om uddannelsen og find din studieordning på [ruc.dk](https://ruc.dk)

## REGISTRATION AND STUDY ADMINISTRATIVE

Sign up for study activities at [stads selvbetjening](https://stads.selvbetjening.ruc.dk) within the announced registration period, as you can see on the [Studyadministration homepage](https://ruc.dk/studyadministration).

When signing up for study activities, please be aware of potential conflicts between study activities or exam dates.

### Registration

The planning of 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.

Number of participants

ECTS 5

Responsible for the activity William Goldring ([goldring@ruc.dk](mailto:goldring@ruc.dk))  
Anders Malmendal ([amalm@ruc.dk](mailto:amalm@ruc.dk))

Head of study Frederik Diness ([diness@ruc.dk](mailto:diness@ruc.dk))

Teachers

Study administration INM Registration & Exams ([inm-exams@ruc.dk](mailto:inm-exams@ruc.dk))

Exam code(s) U60045

## ACADEMIC CONTENT

|                                       |  |
|---------------------------------------|--|
|                                       | The course is offered for a short period of time and only to students who have passed the Bachelor Course Applied Spectroscopy   |
| Overall objective                     | <ul style="list-style-type: none"> <li>• General knowledge and understanding of the periodic system</li> <li>• Structure and binding conditions of inorganic chemical compounds and their coordination chemistry</li> <li>• Understanding of data related to analysis of inorganic compounds</li> </ul>  |
| Detailed description of content       | <p>Knowledge and concepts about structures of and bonding and coordination in inorganic molecules and complexes is generated and developed based on elements position in the periodic table combined with quantum chemistry and physical-chemical models and theories.</p> <p>In the laboratory sessions these effects are illustrated, syntheses will be performed by the students and quantitative analysis are performed. For each experiment a report must be prepared and submitted. The report addresses questions and the analytical data obtained during the experiment.</p> |
| Course material and Reading list      | <p>"Inorganic Chemistry" Fifth edition</p> <p>Catherine E. Housecroft &amp; Alan G. Sharpe</p> <p>(Pearson)</p>  |
| Overall plan and expected work effort | <p>5 ECTS corresponding to 135 hours of work</p> <p>Workload for the student: - Lectures: 26 hrs - Preparation for lectures and theoretical content: 26 hrs - Laboratory sessions: 24 hrs - Preparation for laboratory: 24 hrs - Exam: 3 hrs - Preparation for exam: 32 hrs</p>  |
| Format                                |  |
| Evaluation and feedback               | <p>The course includes formative evaluation based on dialogue between the students and the teacher(s).</p> <p>Students are expected to provide constructive critique, feedback and viewpoints during the course if it is needed for the course to have better quality. Every other year at the end of the course, there will also be an evaluation through a questionnaire in SurveyXact. The Study Board will</p>   |

handle all evaluations along with any comments from the course responsible teacher.

Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights from the course to the study board during or after the course.

|  |  |
|--|--|
| Programme  | 1) Four 4 hours lecture and problem solving sessions   |
|  | 2) One theoretical laboratory session  |
|  | 3) Three practical laboratory exercises which could be: Iron compounds in two oxidation states, Nickel(II) 1,2-ethanediamine complexes, Ion exchange separation of Chromium(III) complexes |
|  | Inorganic Chemistry includes lectures and problem solving in the class and some regular lab exercises.   |
| Program will be available on moodle prior to the start of the course |  |

## ASSESSMENT

After successful completion of the course the student will be able to:

|  |   |
|--|---|
| Overall learning outcomes  | • knowledge and understanding of the elements of the periodic table and their compounds |
|  | • knowledge and understanding of structures   |
|  | • knowledge and understanding of analysis methods for inorganic compounds               |
|  | • skills in the safe handling of inorganic and organometallic compounds                 |
|  | • skills in performing chemical synthesis following a precept                           |
| • skills in performing measurements and experiments involving inorganic chemical compounds |   |

- skills in performing measurements and experiments involving inorganic chemical compounds
- competences in interpreting measurements and outcomes of chemical experiments involving inorganic compounds.

Individual written invigilated exam

The duration of the exam is 3 hours.

Form of examination Permitted support and preparation materials for the exam: Computer without internet access during the exam, pocket calculator, course material and own notes.

Assessment: 7-point grading scale

Form of Re-examination Samme som ordinær eksamen / same form as ordinary exam  
Type of examination in special cases

The written exam consist of questions.

Examination and assessment criteria

- Knowledge and understanding of the elements of the periodic table and their compounds
- Knowledge and understanding of structures
- Knowledge and understanding of analysis methods for inorganic compounds
- Skills in the safe handling of inorganic compounds
- Skills in performing chemical synthesis following a precept
- Skills in performing measurements and experiments involving inorganic chemical compounds
- Skills in using knowledge and understanding of the composition of inorganic compounds

- Competences in interpreting measurements and outcomes of chemical experiments involving inorganic compounds

Exam code(s) Exam code(s) : U60045

## Course days:

**Hold: 1**

### Inorganic Chemistry (CB)

time 04-03-2024 10:15 til  
04-03-2024 12:00

location 28b.0-01 - store teorirum (30)

Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

### Inorganic Chemistry (CB)

time 05-03-2024 08:15 til  
05-03-2024 10:00

location 28b.0-01 - store teorirum (30)

Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

### Inorganic Chemistry (CB) - Laboratory 15.2

time 07-03-2024 14:15 til  
07-03-2024 18:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

location 15.2-002 - Åbent studiemiljø (26)

Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 11-03-2024 10:15 til  
11-03-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 12-03-2024 08:15 til  
12-03-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB) - Laboratory 15.2**

time 14-03-2024 14:15 til  
14-03-2024 18:00  
forberedelsesnorm ikke valgt  
forberedelsesnorm D-VIP ikke valgt  
location 15.2-002 - Åbent studiemiljø (26)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 18-03-2024 10:15 til  
18-03-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 19-03-2024 08:15 til  
19-03-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB) - Laboratory 15.2**

time 21-03-2024 14:15 til  
21-03-2024 18:00  
forberedelsesnorm ikke valgt  
forberedelsesnorm D-VIP ikke valgt  
location 15.2-002 - Åbent studiemiljø (26)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 25-03-2024 10:15 til  
25-03-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 26-03-2024 08:15 til  
26-03-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 02-04-2024 08:15 til  
02-04-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 04-04-2024 14:15 til  
04-04-2024 16:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 08-04-2024 10:15 til  
08-04-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 09-04-2024 08:15 til  
09-04-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 11-04-2024 14:15 til  
11-04-2024 16:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 15-04-2024 10:15 til  
15-04-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 16-04-2024 08:15 til  
16-04-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )



## **Inorganic Chemistry (CB)**

time 18-04-2024 14:15 til  
18-04-2024 16:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 22-04-2024 10:15 til  
22-04-2024 12:00  
location 28b.0-01 - store teorirum (30)  
Teacher William Goldring ( goldring@ruc.dk )  
Anders Malmendal ( amalm@ruc.dk )

## **Inorganic Chemistry (CB)**

time 23-04-2024 08:15 til  
23-04-2024 10:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry (CB)**

time 25-04-2024 14:15 til  
25-04-2024 16:00  
location 28b.0-01 - store teorirum (30)  
Teacher Anders Malmendal ( amalm@ruc.dk )  
William Goldring ( goldring@ruc.dk )

## **Inorganic Chemistry - Exam (CB)**

time 07-06-2024 10:00 til  
07-06-2024 13:00  
location 25.2-005 - teorirum 25.2 (80)

## **Inorganic Chemistry - Reexam (CB)**

time 13-08-2024 10:00 til  
13-08-2024 13:00

location 28b.0-01 - store teorirum (30) / 28b.0-05 - lille teorirum (20)