

Inorganic Chemistry

Title	Inorganic Chemistry
Semester	F2023
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 Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	<p>Sign up for study activities at stads selvbetjening within the announced registration period, as you can see on the Studyadministration homepage.</p> <p>When signing up for study activities, please be aware of potential conflicts between study activities or exam dates.</p> <p>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.</p>
Number of participants	
ECTS	5
Responsible for the activity	Anders Malmendal (amalm@ruc.dk) Trine Holm Freiesleben (tholmf@ruc.dk)
Head of study	Anders Malmendal (amalm@ruc.dk)
Teachers	
Study administration	INM Registration & Exams (inm-exams@ruc.dk)
Exam code(s)	U60045

ACADEMIC CONTENT

Overall objective	<p>The course is offered for a short period of time and only to students who have passed the Bachelor Course Applied Spectroscopy</p> <ul style="list-style-type: none"> • General knowledge and understanding of the periodic system • Structure and binding conditions of inorganic chemical compounds and their coordination chemistry • Understanding of data related to analysis of inorganic compounds
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 & 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:</p> <ul style="list-style-type: none"> • 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>- Total: 135 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 handle all evaluations along with any comments from the course responsible teacher.</p> <p>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 form the course to the study board during or after the course.</p>
Programme	<p>1) Four 4 hours lecture and problem solving sessions</p>

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

Overall learning outcomes

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

- 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.

Form of examination

Individual written invigilated exam.

The duration of the exam is 3 hours.

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.
Moderation: Internal co-assessor.

Form of Re-examination

Samme som ordinær eksamen / same form as ordinary exam

Type of examination in special cases

Examination and assessment criteria

The written exam consist of questions.

- 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	07-03-2023 08:15 til 07-03-2023 12:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	28b.0-01 - store teorirum (30)
Teacher	Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time	09-03-2023 14:15 til 09-03-2023 18:00
location	28b.0-01 - store teorirum (30)
Teacher	Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time	15-03-2023 08:15 til 15-03-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	28b.0-01 - store teorirum (30)
Teacher	Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 16-03-2023 14:15 til
16-03-2023 18:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 28-03-2023 08:15 til
28-03-2023 10:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 30-03-2023 14:15 til
30-03-2023 18:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 04-04-2023 08:15 til
04-04-2023 10:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 11-04-2023 08:15 til
11-04-2023 10:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 13-04-2023 14:15 til
13-04-2023 18:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 18-04-2023 08:15 til
18-04-2023 10:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 20-04-2023 14:15 til
20-04-2023 18:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 25-04-2023 08:15 til
25-04-2023 10:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry (CB)

time 27-04-2023 14:15 til
27-04-2023 18:00

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

Teacher Trine Holm Freiesleben (tholmf@ruc.dk)

Inorganic Chemistry - Exam (CB)

time	06-06-2023 10:00 til 06-06-2023 13:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	07.2-008 - undervisningslokale (128)

Inorganic Chemistry - Reexam (CB)

time	08-08-2023 10:00 til 08-08-2023 13:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt