

COURSE SYLLABUS

Pathway Chemistry, 7.5 credits

Pathway Chemistry, 7.5 högskolepoäng

Course Code: P1PCRC	Education Cycle: First-cycle level
Confirmed: Jun 10, 2025	Disciplinary domain: Natural sciences
Valid From: Jan 12, 2026	Subject group: Other Subjects within Natural Science
	Specialised in: GXX First cycle, in-depth level of the course cannot be classified

Intended Learning Outcomes (ILO)

On completion of the course the student shall:

Knowledge and understanding

1. Display knowledge of the structure of the atom and chemical bonds
2. Show familiarity with some elementary acid-base reactions
3. Demonstrate comprehension of energy changes in chemical reactions
4. Demonstrate comprehension of oxidation-reduction reactions and of some of their applications
5. Show familiarity with risks of working in a laboratory

Skills and abilities

6. Show ability to search information about labelling and handling of chemicals
7. Show ability to handle laboratory equipment, to perform experiments and interpret and process the results
8. Demonstrate ability to perform calculations in stoichiometry
9. Demonstrate ability to perform simple pH calculations
10. Demonstrate ability to write and interpret chemical formulas for some chemical compounds and reactions
11. Demonstrate skills in using experimental methods in laboratory

Judgement and approach

12. Self and peer reflection on the development of skills and abilities.
13. Critical evaluation of relevant information related to the different parts of the course.

Content

The course includes the following elements:

The course includes basic chemical concepts about the structure and the functions of the matter, the transformations of the substances within chemical reactions and the importance of Chemistry to people and societies. The course content includes and corresponds to, but is not limited to, the Swedish upper secondary school course Kemi 1. The horizontal aim is to develop and strengthen student skills for participating in higher education, life-long learning and global citizenship through group work, social engagement, peer learning, reflective learning and autonomous learning whilst developing agency, ability to reconcile tensions and dilemmas, intercultural communication skills, metacognitive skills, information and digital literacy and critical thinking.

The course includes the following elements:

- The risks of work in a laboratory including labeling and handling of chemicals

- Matter and chemical bonding
- Chemical formulas and calculations
- Energy changes in chemical reactions
- Acids and bases
- Redox reactions and electrochemistry
- Analytical chemistry

Type of instruction

Lectures and tutorials, lab work and tutorial sessions.

Language of instruction is in English.

Entry requirements

General entry requirements and High School Diploma and English Language skills corresponding to: English IELTS 5.5 or the equivalent

Examination and grades

The course is graded Pass (G) or Fail (U).

The examination consists of one paper and one written exam. The course is graded pass or fail.

The ILOs are assessed by the following means:

Written exam

Laboratory report

Registration of examination:

Name of the Test	Value	Grading
Written exam	6.5 credits	G/U
Laboratory report	1 credit	G/U

Other information

Qualification Requirements

To obtain the Course Certificate the student shall complete the course requirements of 7.5 credits.

Title of qualification

The course gives you skills equivalent to the Swedish upper secondary school course Kemi 1 for eligibility to programmes at Jönköping University.

Course literature

Please note that changes may be made to the reading list up until eight weeks before the start of the course.