

Faculty of Economic, Social and Political Sciences



INGE1115 Chemistry (Part 1)

[40h+20h exercises] 5 credits

Teacher(s): Bernard Tinant
Language: French
Level: First cycle

Aims

The general objectives of this Chemistry course are to teach students the basic concepts of Chemistry and thus enable them to master the specialized language, understand the organisation of matter and the chemical transformations it can undergo and acquire an understanding of concepts applied in fields such as Metallurgy and Electrochemistry.

Main themes

The course aims to teach students the fundamentals of Inorganic Chemistry so that they can understand the specialized language used, the states of matter, the relationship between nature, structure and the properties of inorganic compounds, chemical balances in the aqueous phase (acid-base reactions, oxide-reduction reactions and precipitation reactions) and to show how they are linked to thermodynamics and chemical reaction kinetics.

Content and teaching methods

CONTENTS

1. Origins and symbols of the elements
Writing and understanding chemical equations and assessing reactions
2. Atomic Make-up
Electron configuration of the elements
Relation between electron structure and properties
3. types of connections (intra - and intermolecular) and their influence on properties
4. States of matter and changes of state
5. Chemical balances and reactions:
 - base-acid
 - oxide-reduction
 - precipitation
6. Elements of thermodynamics and kinetics in relation to chemical balances
7. Potential illustrations:
 - metallurgy of iron, of copper
 - batteries

METHOD

- Lectures with some exercises; a move towards a more active involvement on the part of the students, for example by approaching the subject through exercises or problems, would be envisaged if the Administration and Management Institute could provide more staff to supervise group work.
- Lab work directly related to the subject matter; this is essential to show the experimental nature of Chemistry

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Support : syllabus available at DUC

A reference book is advised but not compulsory: P. Atkins, L. Jones, Chimie molécules, matière, métamorphoses, De Boek Université

Other credits in programs

INGE11BA	Première année de bachelier en ingénieur de gestion	(5 credits)	Mandatory
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