وزارة التعليم العالي و البحث العلمي

People’s Democratic Republic of Algeria

The Minister of Higher Education and Scientific Research

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| ABOU BEKR BELKAID UNIVERSITY TLEMCEN  FACULTY OF MEDICINE- Dr. B. BENZERDJEB  MEDICINE DEPARTMENT |  | جامعة أبو بكر بلقا يد - تلمسان  كلية الطب - د. ب. بن زرجب  قسم الطب |

**CHEMICAL SYLLABUS**

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| **Module:** Chemical  **Teaching year**: First year- Annuel  **Course coordinator**: Dr. CHIALI –BABA AHMED Nouria  **E.mail** : [nouriabdz@yahoo.fr](mailto:nouriabdz@yahoo.fr)  [nouria.babaahmed@univ-tlemcen.dz](mailto:nouria.babaahmed@univ-tlemcen.dz)  **Credits:** 03 Hours for theory courses + 01H30 for tutorials  **Cours type**: Fundamental science  **Setting: Amphitheater + Class room + Chemical laboratory** |

**Module objectives:**

Chemistry plays a central role in our daily life, both through its place within the natural sciences and knowledge, and through its economic importance and its omnipresence.

Its contributes decisively to humanity’s needs for food and medicine, etc..

For almost two centuries, molecular chemistry has built a vast collection in increasingly sophisticated molecules and materials.

The tasks of chemistry is to reveal the paths of self-organization and to trace the paths leading from inert matter, through a purely chemical probiotic evolution, to the caesura oh life, and beyond to living matter and then thinking.

**It thus provides means to question the past, explore the present and built to the future.**

* **ASSESSMENT**
* 01 exam
* Coefficient : 1
* **CREDIT HOURS**

Courses 03H **/** Week

Tutorials 01H30/Week

Practical works 1H30 / every Months (with 800 students)

* **PROGRAM**

1. **LECTURES  THEORY :**

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| **CHIMIE I (30H)**  **Generale** | | | |
| **CHAPTER** | | **AIMS / CONTENT** | **HOURLY AMOUNT** |
| 1. **Structure of matter** 2. The nucleus and radiation electronic structure of the atom 3. Periodicity of the physico-chemical properties of the elements (study of the Mendeleiv table) 4. Molecular geometry (VSEPR) | | -This first part of the course allows the students to understand what matter is made of.  -To understand and visualize the molecules constituting matter in three dimensions. | **10 H** |
| 1. **Chemical Bonds** | | **3H** |
| 1. **States of matter**     * Ordered    * Messy | | **1H30** |
| 1. **Chemical thermodynamiques**    * First principle    * second principle | | * + Thermochemistry helps the mediacl student to associate the chemical reactions with energy exchange.   + The human body is the best example of balance , so a medical student must master the exchanges during reactions in solutions.   + Kinetics studies the speed of reaction for a doctor it is essential to know the speed of reaction of a drug for exemple. | **5H** |
| 1. **Solutions chemisty**     * Physico-chemical equilibrium    * Acido-basic réactions    * Redox réactions | | **7H30** |
| 1. **Kinetic chemistry** | | **3H** |
| **CHIMIE II(20H)**  **Organique** | | | |
| 1. Organics fonctions (nomenclature) | -Chemistry plays an essential role in health, both from cognitive and therapeutic point of view. -Indeed, the mecanisms involved in numerous pathologies involve hormones, proteins and receptors. The study of organics chemistry, chemical structure and their reactivity allows to better understand them | | 3H  6H  6H  5H |
| 1. Stereochemistry and isomerism |
| 1. Structure and responsiveness |
| 1. reactions in organic chemistry 2. Addition 3. Nucleophilic substitution 4. Elimination 5. Electrophilic substitution |

**Nb : The hourly volume allocated to chemistry is insufficient.**

1. **TUTORIALS**

Application exercises linked to each chapter ( I and II)

1. **Practical work:**
2. Preparation of solutions
3. Acid-base dosage
4. Determination of acetic acid vinegar
5. Kinetic study of a second order reaction
6. Qualitative functional analysis
7. Study of geometry of molecules stereochemistry

* **REQUIRED PAPER**
  + One electronic handout is sent for each chapter.
  + A practical work handout is given in paper form tostudents
* **BIBLIOGRAPHY**
  + 1989, J. M. Smith, H. C. van Ness, A. M. Abbott, Introduction to chemical Engineering thermodynamics, 2nd ed., McGraw-Hill.

- 1992 , Chimie générale, P.Atkins

- 1997, Thermodynamique et équilibres chimiques, Paul Arnaud

- 1997, Chimie générale, 4ème édition corrigée, R.Ouahes et B.Devallez

- 1998, Cours de chimie physique, Paul Arnaud

- 2004,A. Gruger, Thermodynamique et équilibres chimiques, Cours et exercices corrigés, 2nd éd., Dunod, (2004).

- 2011, M. Chabanel et B. Illien, Thermodynamique chimique, Ed. Ellipses, Paris.

- 2019-2020, Cours de chimie organique, Dr Dehar Mokhtaria.

- Cours de chimie générale et organique ; http://elearning.univ-jijel.dz/cours