Basic Data
1. Course Title: Inorganic Chemistry (Main Groups and transition Elements).
2. Course Number: 221ch
3. Number of Hours: five credit hours
   Lectures: 2 credit hours
   Lab.: 2 hours

Professional Data
1) General goals of the course
   The course is designed to help student-teachers achieve the following goals:
   • Explain the tends and properties of s and p block elements and their most important compounds.
   • Identify the trends and properties of the first law transition elements and their most important compounds.
   • Describe the importance of transition elements in industrial and life processes.

2) Operational learning objectives of the course
   By the end of this course, student teachers are expected to achieve the following objectives:
A) Knowledge and Comprehension:
   A-1 Identify the main group elements.
   A-2 Identify the general trends of s and p block elements.
   A-3 Acquaintance with chemical reactions of some representative elements.
   A-4 Identify transition elements.
   A-5 Compare the general trends of the transition series.
   A-6 Explain industrial and biological applications of the concepts of inorganic chemistry.

B) Cognitive Skills:
   B-1 construct a correct mental model of chemical reactions
C) **Practical Skills:**
   C-1 Locate resources, design and conduct inquiry-based open-ended investigations in inorganic chemistry, interpret findings, communicate results, and make judgments based on evidence.
   C-2 Acquire hands on practical skills in inorganic Chemistry.

D) **Enabling Skills:**
   D-1 Construct new knowledge for themselves through research, reading and discussion, and reflect in an informed way on the role of science in human affairs.
   D-2 Relate the concepts of inorganic chemistry to contemporary, historical, technological, and societal issues; in particular, relate concepts of inorganic chemistry, to current controversies.

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<td>First</td>
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<tr>
<td>Second</td>
<td>*Chemistry of s: general trends and properties, chemistry of most important compounds</td>
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<td>Third</td>
<td>Chemistry of s general trends and properties, chemistry of most important compounds</td>
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<td>Fourth</td>
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**Activities, tasks and assignments:**

- Solves and discusses problem sets.
- Submission and class presentation of term papers.
- Computer aided and web based assignments and assessment.
- Molecular modeling to elucidate inorganic compounds and related structure – property – chemical reactivity relationships.
- Visits to relevant industrial and submission of subsequent reports chemical reactivity relationships.

**Assessment and Evaluation tools:**

- Quizzes.
- Hourly and midterm exams.
- Final Exam.
- Oral assessment.
- Assessment of term paper, reports and group discussions.
- Evaluation of performance in the lab, group projects, and reports.

**Summative Evaluation table**

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<th>Remarks</th>
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<td>امتحان نهاية الفصل الدراسي</td>
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<td>3. Final practical exam</td>
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<td>2.0</td>
<td>الامتحان العملي</td>
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<td>4. assignments</td>
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<td>3.0</td>
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<td>Total</td>
<td>100</td>
<td></td>
<td>المجموع</td>
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</table>

**References:**

**Students' Textbooks**

1. (Kitab al-Talab) كتاب الطالب

**Periodicals and websites**

2. مجلات علمية، وموارب الإنترنت

The Journal of chemical physics

The journal of physical chemistry. A.
The journal of physical chemistry. B,

Resources

- Chemistry library
- Textbooks
- Handouts and problem sets.
- Electronic, web, and multimedia based resources

Course coordinator:

Head of the Department:

Date
رؤية الكلية: انطلاقاً من رؤية جامعة الإسكندرية تسعى كلية التربية إلى تحقيق الجودة والحصول على الاعتماد الأكاديمي لتحقيق مكانة متميزة بين كليات التربية على المستوى القومي والعالمي ( مجلس الكلية 8 مارس 2009).

رسالة الكلية: إعداد المعلمين والكوادر المؤهلة القادرة على تطوير النظم التعليمية والإدارية بالتعليم العام والفنى، والباحثين القادرين على تطوير