# Course specification

**University/Academy:** Damanhour University  
**Faculty/Institute:** Faculty of Science  
**Department:** Chemistry

### 1. Course Data:

<table>
<thead>
<tr>
<th>Course code:</th>
<th>Course title:</th>
<th>Academic year/level:</th>
</tr>
</thead>
</table>
| Chem. 410    | Inorganic chemistry 3 | 2010-2011  
|              |               | 4th year- 2nd term |

**Specialization:** Special Chemistry  
**No. of instructional units:**  
<table>
<thead>
<tr>
<th>lecture</th>
<th>tutorial</th>
<th>practical</th>
</tr>
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<tbody>
<tr>
<td>4</td>
<td>4</td>
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</table>

### 2. Course Aim

The course topics can be summarized as follows:

- Nuclear and Actinides chemistry.
- Solid state chemistry.
- Inorganic reaction mechanism.
- Organo-metallic chemistry

### 3. Intended learning outcome

#### Knowledge and understanding

By the end of the course, students will be able to:

**A1** Define the principles of nuclear chemistry.  
**A2** Mention the behavior of Actinides in different mediums.  
**B2** Describe s the inorganic reaction mechanism in different geometries and suggest the products.  
**A1** List methods of preparation of the organo-metallic compounds and their properties.

#### Intellectual skills

On completing this course, students will be able to:

**B1** Contrast between different nuclear models and write the sub-nuclear particles distributions.  
**B3** Interpret what happens in the different mechanisms of inorganic reactions step by step.
### Professional skills

By the end of the course, students will be able to:

- **C1** Interpret the behaviour of actinides in different mediums.
- **C2** Interpret the behaviour of nucleus due to the radioactivity.
- **C3** Interpret the inorganic reaction mechanism of Oh and square planar geometries.
- **C4** Calculate the binding energy of the nucleus.

### General skills

By the end of the course, students will be able to:

- **D1** IT and web search.
- **D2** Communication with the Lecturer and colleagues.
- **D3** Solving problems.

### 4. course content

- Nuclear chemistry
- Actinides chemistry
- Solid state chemistry
- Inorganic reaction mechanism
- Organo-metalllic chemistry

### Teaching and learning methods

1. Lectures and seminars using data show and board.
2. Assignment.
4. Reports.

### Teaching and learning methods for students with special needs

- **a.** Computer hall to be used in visual labs and simulation experiments.
- **b.** Data show, overhead projector,
- **c.** Changing to credit hours system, it is more effective.
### Student Assessment

| Assessment | 5.1. Mid term exam.  
|            | 5.2. Reports.  
|            | 5.3. Final term exam. |

### Procedures used:

<table>
<thead>
<tr>
<th>Assessment 1</th>
<th>Final-Term Examination Week 16</th>
</tr>
</thead>
</table>

### Schedule:

<table>
<thead>
<tr>
<th>Assessment 1</th>
<th>Mid term exam</th>
<th>Week: 8</th>
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<tbody>
<tr>
<td>Assessment 2</td>
<td>Reports</td>
<td>Week: 11</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Final term exam</td>
<td>Week: 15</td>
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</table>

### Weighing of Assessment:

<table>
<thead>
<tr>
<th>Weighing of Assessments</th>
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<tbody>
<tr>
<td>Mid-Term Examination:</td>
<td>-</td>
</tr>
<tr>
<td>Final-Term Examination:</td>
<td>100</td>
</tr>
<tr>
<td>Oral Examination:</td>
<td>-</td>
</tr>
<tr>
<td>Practical Examination:</td>
<td>-</td>
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<tr>
<td>Semester Work:</td>
<td>-</td>
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Total: 100
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### List of Textbooks and References:

- **Radioactivity Radionuclides Radiation**
- **Radiochemistry and Nuclear Chemistry**
- **Radioactivity, Ionizing radiation and Nuclear Energy**

### Course Notes

Course notes provided by the staff member of Math department, to be handed at the beginning of the semester.

### Required Books (Textbooks)

- **Radiochemistry and Nuclear Chemistry**

### Recommended

- **Radiochemistry and Nuclear Chemistry**
### Books

<table>
<thead>
<tr>
<th>b) Periodicals, web sites, etc</th>
<th><a href="http://www.Elesevier.com">www.Elesevier.com</a></th>
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**Course Instructor**

Dr. Alaa E. Ali

**Head of Department**

Dr. Medhat A. Shaker

**Date:** 20 / 9 / 2008