



Quality Assurance Unit



Department of Pharmaceutical  
Analytical Chemistry

Course Specification

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## Course Specification

### 1-Basic Information

Title: Laboratory safety and waste disposal

Code:

Level: Master (General Courses)

Departments: Pharmaceutical Analytical Chemistry  
Pharmaceutics

Unit: one hour/ week

Lecture: 16 hr

Tutorial

Practical:

Total:16 hr

### 2- Aims of Course

To provide the students with suitable practical information to carry out the in-vitro and in-vivo experiments in a correct manner and in a safety procedure and to minimize the potential risks.

### 3- Intended Learning Outcomes of Course (ILOs)

#### **a- Knowledge and Understanding:**

**The graduate should be able to:**

- a1- Describe possible risks and general precautions on dealing with chemicals and ways to avoid them.
- a2- List the general safety tools in laboratories and other precautions.
- a3- Illustrate the best approach to be protected from health risks when dealing with biological samples.

#### **b- Intellectual Skills:**

**The graduate should be able to:**

- b1- Carrying out researches and the ability to think and how to solve potential risks.

#### **c- Professional and practical Skills:**

**The graduate should be able to:**

- c1- Dealing with chemical and laboratory samples and carrying out experiments according to good laboratory practice (GLP).

#### **d- General and Transferable Skills:**

**The graduate should be able to:**

- d1- Expand the general basic knowledge and information from different sources for master students.
- d2- Identify new technologies for waste disposal and operation of safety devices
- d3- Dealing with hazardous materials and how to behave when subjected to laboratory risks.

### Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
- Precautions and recommendations required during research studies.	1		
- Procedures required dealing with materials causing chronic and acute toxicity. - Precautions and how to deal with highly toxic drugs in experimental animals.	2		
- Tools which should be adopted during sampling and analyzing biological samples, like blood and biological fluids.	2		
- General instructions for staff assistants.	1		
- Recommended methods to work in student and research labs.	1		
- Introductory to dealing with risks chemicals.	1		
- Safety lab equipment in labs and the followed steps in case of emergency.	0.5		
- Personal safety means and safety system to work in labs.	2		
- General procedures that adopted to get hazard chemicals.	1		
- Procedures should be adopted in distribution of hazard chemicals from stores to labs.	1		
- General methods should be followed during storage of hazard chemicals.	1		
- General methods should be adopted for dispensing hazard chemicals.	0.5		
- Methods adopted during working with dangerous materials.	0.5		
- Methods used during dealing with explosive materials.	0.5		

- Safety requirements for working with electrical instruments.	0.5		
- Some considerations should be followed during working in labs.	0.5		

#### **4- Teaching and Learning Methods**

- 4.1- Teaching lectures
- 4.2- Discussions
- 4.3- Reports

#### **5- Teaching and learning methods for disables**

Extra hours to help the disable students to understand the hard topics

#### **6- Student Assessment**

##### **a- Student Assessment methods**

- 6.1- Final written exam to assess understanding and knowledge.

##### **b- Student Assessment Schedule**

No.	Assessment	week
1.	Final written exam	In June

##### **c- Weighting of Assessments**

No.	Exam.	Mark	%
1.	Mid-Term Examination	----	----
2.	Final-Term Examination	50	100%
3.	Oral Examination	----	----
4.	Practical Examination	----	----
5.	Semester Work	----	----
6-	<u>Other types of assessment</u>	----	----
	<u>Total</u>	50	100%

#### **7- List of References**

##### **a-Course Notes**

##### **b- Essential Books (Text Books)**

- 1- Purdent practice for handling hazard chemicals in laboratories. Reproduced with permission from a booklet published, by the American Conference of Governmental Hygienist, Inc. Cincinnati, Ohio, USA (1990).
- 2- Safety in academic chemistry laboratories published by the American chemical society, Committee on chemical safety, 5<sup>th</sup> edition, USA, (1991).
- 3- Biosafety in microbiological and biomedical laboratories. U.S. Dept. of health and human service center for disease control and national institutes of health. 2<sup>nd</sup> edition, U.S. government (1988).

##### **c-Recommended Books**

None

**d- Periodicals, Web Sites, .... etc**

None

**8- Facilities Required for Teaching and Learning**

None

**Course Coordinator:**

**Head of Department:**

**Program Director**

**Date: / /**

University    Assiut  
 Faculty        Pharmacy  
 Department    Pharm. Anal. Chem.  
                     Pharmaceutics

Course Title    Laboratory safety and waste disposal  
 Course Cod.    .....

### Matrix of the Intended Learning Outcomes (ILOs) of the Course

Topic	Week	Knowledge and Understanding	Intellectual Skills	Professional and Practical Skills	General and Transferable Skills
- Precautions and recommendations required during research studies.	1	a1,a2	b1		
- Procedures required dealing with materials causing chronic and acute toxicity. - Precautions and how to deal with highly toxic drugs in experimental animals.	2-3	a3		c1	d3
- Tools which should be adopted during sampling and analyzing biological samples, like blood and biological fluids.	4	a3		c1	d2
- General instructions for staff assistants.	5	a1,a2,a3			d1
- Recommended methods to work in student and research labs.	6		b1		d1

- Introductory to dealing with risks chemicals.	7	a1	b1		d3
- Safety lab equipment in labs and the followed steps in case of emergency.	8	a2			d2
- Personal safety means and safety system to work in labs.	9	a1			
- General procedures that adopted to get hazard chemicals.	10	a1			d2,d3
- Procedures should be adopted in distribution of hazard chemicals from stores to labs.	11	a1			d2,d3
- General methods should be followed during storage of hazard chemicals.	12	a1,a2,a3		c1	d2,d3
- General methods should be adopted for dispensing hazard chemicals.	13	a1,a2,a3		c1	d2,d3
- Methods adopted during working with dangerous materials.	13	a1,a2,a3		c1	d2,d3
- Methods used during dealing with explosive materials.	14	a1,a2,a3		c1	d2,d3
- Safety requirements for working with electrical instruments.	14	a1,a2,a3		c1	d2,d3
- Some considerations should be followed during working in labs.	15	a1,a2,a3	b1		d2,d3

- Methods adopted during working with dangerous materials.	15	a1,a2,a3		c1	d2,d3
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Course Coordinator

Head of Department

Date: / /