Quality Assurance Unit

Department of Pharmaceutics

QAU

وحدة ضمان الجودة

كلية الصيدلة ـ جامعة أسيوط

Course Specification

Assiut University
Faculty of Pharmacy

Course Specification

1-Basic Information

Title: **Nanomedicine**   Code:

Level: **Ph.D (Special courses)**   Department: **Pharmaceutics**

Unit: **Hour/week**

Lecture: Two hours per week   Tutorial: Practical: Total: 2hr/week

2- Aims of the Course

The aim of this course is to provide an overview of the concepts and applications of nanomedicine today and to discuss future directions in applying novel nanotechnological systems in medicine (e.g., for imaging, diagnosis and drug delivery).

3- Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:
The graduate should be able to:

al- List different classes of nanoparticles.

al - Define different materials (polymers) and methods used to make nanaoparticles.

a6- Enumerate nanoparticles as drug delivery systems and examples of successful nanoparticulate formulations.

al - Be aware of different classes of drugs that need new drug delivery systems (e.g., anticancer drugs) and different natural and synthetic polymers that can be used to make nanopaticles

b- Intellectual Skills:
The graduate should be able to:

b6- Design novel delivery systems that can enhance drug efficacy and reduce toxicity.

c- Professional and practical Skills:

The graduate should be able to:

    c2- Encapsulate a certain drug in a nano-delivery system and evaluate its properties.

d- General and Transferable Skills:

The graduate should be able to:

d2- Communicate efficiently with colleagues and coworkers.

d4- Offer counseling in all problems encountered in applying advanced preparation techniques.

Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction (the need of nanoparticulate drug delivery systems)	4		--
Polymers used to make nanoparticles	4		--
Methods used in nanoparticles preparation	4		--
Nanoparticles as imaging agents	4		--
Nanoparticles for passive and active targeting	4		--
Nanoparticles as delivery agents for anticancer drugs	2		--
Challenges that face nanoparticles and future directions	2		--
Total	24		--

4- Teaching and Learning Methods

    4.1-Lectures

    4.2- Discussion

    4.3- Essay writing and reports.

5- Teaching and learning methods for disables

    Extra time to help the disable students to understand the hard topics.

6- Student Assessment

a- Student Assessment methods

    6.1-Written exam to assess understanding and knowledge

b- Student Assessment Schedule

No.	Assessment	week
1.	Final written exam	In June
2.		
3.		
4.		

c- Weighting of Assessments

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

7- List of References

a- Course Notes

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b- Essential Books (Text Books)
1- The Handbook of Nanomedicine
2- Nanoparticulates as Drug Carriers
3- Biomaterials for Drug Delivery

c- Recommended Books
1- Nanoparticle technology for drug delivery
2- Polymers in drug delivery

d- Periodicals, Web Sites, …. Etc
1- Nanomedicine
2- Journal of Controlled Release
2- Molecular Pharmaceutics
4- Biomaterials

8- Facilities Required for Teaching and Learning
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Course Coordinator: Dr. Gareab Abdel- Aal Soliman

Head of Department: Professor Dr. Frgani Abdel-Hamid

Date: 12 / 10 /2010

University	Assiut		Course Title	Nanomedicine
Faculty	Pharmacy		Course Cod.	....
Department	Pharmaceutics			

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
Introduction (the need of nanoparticulate drug delivery systems)	1st, 2nd	a1, a6			d2, d4
Polymers used to make nanoparticles	3rd, 4th	a1,a6	b6	c2	d2,d4
Methods used in nanoparticles preparation	5th, 6th	a1, a6	b6	c2	d2,d4
Nanoparticles as imaging agents	7th, 8th	a1,a6	b6	c2	d2,d4
Nanoparticles for passive and active targeting	9th, 10th	a1,a6	b6	c2	d2,d4
Nanoparticles as delivery agents for anticancer drugs	11th	a1,a6	b6	c2	d2,d4
Challenges that face nanoparticles and future directions	12th	a1,a6	b6	c2	d2,d4

Course Coordinator: Dr. Gareab Abdel-Aal Soliman
Head of Department: Professor Dr. Frgani Abdel-Hamid
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