Course Specification

1-Basic Information

Title: Advanced Industrial Pharmacy Code: MIP 061
Level : M.Pharm.Sci (Industrial Pharmacy)
Department: Industrial Pharmacy
Unit:
Lecture: 2h/week Tutorial Practical: Total:

2- Aims of Course

Aims of course are to provide the students with the basic principles, concepts and theories of unit operations used in pharmaceutical manufacturing.

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

al- Application of different techniques in drug industry
a2-Understanding the basic fundamentals of various unit operations.
a3- Gaining information about the current good manufacturing practice.

b- Intellectual Skills:

b1- able to understand the application of mathematical knowledge.
b2- aware by physicochemical properties of drugs and excipients.
b3- think logically for industrial proceedings.

c- Professional and practical Skills:

c1- can handle with the bases of unit operations.
c2- acquire the ability to solve the problems during manufacturing.
c3- can develop the ability for formulation and testing of some solid dosage forms.

d- General and Transferable Skills:

d1- confirm the ability for training others.

d2- can do working in a team work.
d3-assure the skills of oral and theoretical communications.

4- Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Heat flow	4	2	
Evaporation	4	2	
Drying	6	3	
Tablets	12	6	
Crystallization	4	2	
Filtration	4	2	
Centrifugation	2	1	
Size analysis	4	2	
Size reduction	4	2	
cGMP	6	3	
Air purification	4	2	
Mixing	4	2	
Extraction	2	1	

5- Teaching and Learning Methods

5.1-Computer and data show.
5.2- Overhead projector.
5.3- Group discussion
5.4- Scientific trip

6- Teaching and learning methods for disables

None **..**

7- student Assessment

a- Student Assessment methods

7.1-Reports to assess data collection skills..
7.2- Final written exam to assess intellectual, professional and general skills.

b- Student Assessment Schedule

No.	Assessment	Week
1.	Reports	5 and 10
2.	Final Exam	30
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%

8- List of References

a-Course Notes

Department note book

b- Essential Books (Text Books)

1-…Pharmaceutical dosage forms (Tablets)

2- Pharmaceutics, the science of dosage form design, M. Aulton.

c- Recommended Books

Remington, Pharmaceutical sciences

d- Periodicals, Web Sites, …. etc

Relevant web sites .

Course Coordinator: Prof. Dr. Mahrous Osman Ahmed

Head of Department: Prof. Dr. Sayed Ibrahim Abdel-Rahman.

Program Coordinator: Prof.Dr. Mahrous Osman Ahmed
Prof.Dr. Ahmed Abu-Taleb

University **of Assiut**.....

Faculty **of pharmacy**....

Department **Industrial pharmacy**

Course Title: **Advanced industrial pharmacy** .....

Course Code. .....

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
Heat flow	**2**	**a2**	**b1, b3**	**c1, c2,c4**	**d2, d3**
Evaporation	**2**	**a2,a6**	**b1, b3**	**c1, c2,c4**	**d2, d3**
Drying	**3**	**a1, a2, a3,a5,**	**b2, b3,b6**	**c1, c2,c5**	**d1, d2,d3**
Tablets	**6**	**a1,a2, a3,a5,a7**	**b1,b2, b3,b4,b5**	**c1, c2, c3,c5,c6**	**d1, d2, d3,d5,d6**
Crystallization	**2**	**a1, a2**	**b1,b2,b3**	**c1, c3**	**d1, d2,d4**
Filtration	**2**	**a1,a2**	**b1,b2,b6**	**c1, c3**	**d1, d2,d4**
Centrifugation	**1**	**a1, a2**	**b1,b2**	**c1**	**d1, d2**
Size analysis	**2**	**a1,a2,a4**	**b1,b2,**	**c1, c2, c3**	**d2, d3**
Size reduction	**2**	**a1, a2**	**b1,b2,**	**c1, c3**	**d1,d2**
cGMP	**3**	**a3**	**b3,b4,b5**	**c3,c6,c7,c8**	**d2, d3,d4**
Air purification		**a2, a3,a6**	**b1,b2,**	**c1, c2,c8**	**d1, d2,d5**
Mixing	**2**	**a1,a2,a5,a7**	**b1,b2,b3**	**c1, c3,c4**	**d1, d2,d5**
Extraction	**1**	**a1, a2,a6**	**b1,b2,**	**c1, c3,c4**	**d1, d2,d5**

Course Coordinator : Prof. Dr. Mahrous Osman Ahmed and Prof Dr. Ahmed Abu-Taleb

Head of Department : Prof. Dr. Sayed Ibrahim abdel-Rahman.

Course Specification

1-Basic Information

Title: Recent drug delivery systems Code: MIP 062
Level: (M.Pharm.Sci) industrial Pharmacy
Department: Industrial Pharmacy
Unit:
Lecture: 2h/week Tutorial Practical: Total:

2- Aims of Course

Aims of course are to provide the students with knowledges and important information of the systems and recent
methods for drug delivery to different body organs.

3- Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

al- Define the physicochemical and biological factors affecting the sustained drug formulation
a2- explain the controlled release dosage forms through mouth, skin, vagina and injections.

b- Intellectual Skills:

b1- suggest the delivery of the drug to specific site in the human body.
b2- create the methods of drug delivery to specific organs e.g. eye, liver,….

c- Professional and practical Skills:

c1- design the formulation and testing of some solid dosage forms.

d- General and Transferable Skills:

d1- confirm the ability for training others.
d2- do working in a team work.
d3-assure the skills of oral and theoretical communications.

4- Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Extended drug delivery systems	16	8	
Targeted drug delivery systems	16	8	
Selected drug delivery systems	16	8	

5- Teaching and Learning Methods

5.1-Computer and data show.
5.2- Overhead projector.
5.3- Group discussion
5.4- Scientific trip

6- Teaching and learning methods for disables

None.

7- student Assessment

a- Student Assessment methods

7.1-Reports to assess data collection skills.
7.2- Final written exam to assess intellectual, professional and general skills.

b- Student Assessment Schedule

No.	Assessment	Week
1.	Final Exam	30
2.	Oral Exam	30

c- Weighting of Assessments

No.	Exam.	Mark	%
1.	Final-Term Examination	100	100
	Total	100	100%

8- List of References

a-Course Notes

Department note book

b- Essential Books (Text Books)

Modern Pharmaceutics. Ed. CT. Rodes

c- Recommended books

Sustained and controlled release medication by Robinson

d- Periodicals, Web sites……..etc

Course Coordinator: Prof. Dr. Mahrous Osman Ahmed

Head of Department: Prof. Dr. Sayed Ibrahim Abdel-Rahman.

Program Coordinator: Prof.Dr. Mahrous Osman Ahmed and Prof.Dr. Ahmed Abu-Taleb

University	**of Assiut.....**	**Course Title**	**.....**
Faculty	**of pharmacy....**	**Course Code.**	**.....**
Department	**Industrial pharmacy**		

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

Topic	Week	Knowledge and Understanding	Intellectual Skills	Professional and Piratical Skills	General and Transferable Skills
Extended drug delivery systems	**8**	**a1, a2**	**b1, b2**	**c1**	**d1, d2, d3**
Targeted drug delivery systems	**8**	**a1, a2**	**b1, b2**	**c1**	**d1, d2, d3**
Selected drug delivery systems	**8**	**a1, a2**	**b1, b2**	**c1**	**d1, d2, d3**

Course Coordinator: Prof. Dr. Mahrous Osman Ahmed and Prof Dr. Ahmed Abu-Taleb

Head of Department: Prof. Dr. Sayed Ibrahim abdel-Rahman.

Course Specification

1-Basic Information

Title: Stability of solutions Code: MIP 063
Level: M.Pharm.Sci (Industrial Pharmacy)
Department: Industrial pharmacy Unit:
Lecture:2h/week Tutorial:- Practical:-
Total:2h/week

2- Aims of Course

To provide students with basic fundamental elements about stability of pharmaceuticals in solution and methods of calculations of rates and orders of different reactions.

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

al- describe the principles and theories of industrial manufacturing of drugs.

a2-explain the factors affecting drug decomposition.

a4- define the methods of using statistic studies.

b- Intellectual Skills:

b5-suggest research study dealing with formulation of dosage forms .

b6- suggest solutions of different stability problems.

c- Professional and practical Skills:

C4- use specialized instruments in qualitative and quantitative evaluation.

c6- investigate the stability experiments necessary to predict the expiration of drug product.

d- General and Transferable Skills:

d1- transfer the gained experience to the new members.

d3- use data technology in the design of dosage forms.

4- Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction	2	1	N
Order of reactions	8	4	N
Half life and shelf life	4	2	N
Drug excipient interaction	6	3	N
Factors affecting drug degradation	10	5	N
Stabilization of drugs	10	5	N
Problems on stability	20	10	N

5- Teaching and Learning Methods

4.1-lectures
4.2- Data show and power point
4.3- Discussion

6- Teaching and learning methods for disables

……no……
……
……

7- student Assessment

a- Student Assessment methods

7.1-Reports to assess intellectual skills.
7.2- final written exam to assess knowledge and understanding skills

b- Student Assessment Schedule

No.	Assessment	week
1.	Reports	5 and 10
2.	Final exam	30
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%

8- List of References

a-Course Notes

b- Essential Books (Text Books)
Pharmaceutical stability by Conner.

c-Recommended Books
Physical pharmacy by Martin

d- Periodicals, Web Sites, …. etc
International journal of pharmaceutics
FDA org. stability program.

Course Coordinator: Dr. Jelan Abdel-Razik

Head of Department: Prof. Dr. Sayed Ibrahim Abdel-Rahman

Program Coordinator: Prof. Dr. Mahrous Osman Ahmed and Prof. Dr. Ahmed Abu-Taleb

University	.....	**Course Title**	.....
Faculty	.....	**Course Code.**	.....
Department	.....		

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

Topic	Week	Knowledge and Understanding	Intellectual Skills	Professional and Piratical Skills	General and Transferable Skills
Introduction	**1**	**A1**			
Order of reactions	**2-5**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**d1,d3**
Half life and shelf life	**6-7**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**d1,d3**
Drug excipient interaction	**8-10**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**d1,d3**
Factors affecting drug degradation rate	**11-15**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**d1,d3**
Stabilization of drugs	**16-20**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**-d1,d3**
Problems on stability(cont)	**21-30**	**a1,a2,a4**	**b5,b6**	**C4,c6**	**d1,d3**

Course Coordinator: Dr. Jelan Abdel-Razik

Head of Department: Prof. Dr. Sayed Ibrahim Abdel-Rahman

Annual Course Specification
Post Graduate

Programme(s) on which the course is given: M.Sc.
Major or Minor element of programmes: Major
Department offering the programme Industrial Pharmacy
Department offering the course: Industrial Pharmacy
Academic year / Level:2009-2010/M. Pharm Sci.
Date of specification approval:

A-Basic Information

Title:Tablet Technology	Code: MIP 064
Credit Hours: 2h/wk	Lecture: 2h/wk
Tutorial: NA	Practical: NA Total:2h/wk

B-Professional Information

1- Overall Aims of Course

1- Apply the concepts and theoretical basis of industrial processes during tablet dosage form manufacturing,
2- Ability to actively share in the scientific discussions concerned tablet technology.
3- Suggest solutions for industrial problems during tablet manufacturing.
4- Ability to contribute in a team work.

2- Intended Learning Outcomes of Course(ILOs)

After studying this course, the student must acquire the following skills:

a- Knowledge and Understanding:

a1- Define the concepts of tablet dosage form manufacturing.
a5- Be aware of the scientific development in the field of tablet manufacturing**.**

b-Intellectual Skills:

b1- Apply logical thinking to solve problems related to tablet dosage form manufacturing.
b5- Plan research study dealing with formulation of solid dosage forms.

c- Professional and practical Skills:

c1- Gain good practical skills in the field of pharmaceutical industries.

c2- Writing and presenting scientific reports.

c4- Using specialized equipment in the field of tablet technology.

d- General and Transferable Skills:

d2- Manage time effectively.

d4- Enhance scientific ability in the field through self learning.

d6- Participate in scientific seminars and specialized conferences.

3- Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Tablet preformulation.	4	4	NA
Tablet components and additives.	2	2	NA
Tablet making	2	2	NA
Tablet compression equipments.	2	2	NA
Types of tablets.	2	2	NA
Tablet coating.	3	3	NA
Problems in tablet making.	3	3	NA
Quality control for tablet dosage form.	3	3	NA
Scale-up and technology transfer.	4	4	NA

4- Teaching and Learning Methods

4.1- Lectures

4.2- Group discussion

4.3- Self-learning

5- Student Assessment Methods

5.1- Written final exam to assess a1,a5, b1,b5, c1,c4, d4

Assessment Schedule

Assessment 1 written final exam, week 15.

Assessment 2…….. week ……..

Assessment 3…….. week ……..

Assessment 4…….. week ……..

Weighting of Assessments

Mid-Term Examination	---	%
Final-Term Examination	100	%
Oral Examination.		%
Practical Examination		%
Semester Work		%
Other types of assessment		%
Total		100%

Any formative only assessment

6- List of References

6.1-Course Notes: NA

6.2- Essential Books (Text Books): Pharmaceutical dosage form, Tablets, vol: 1,2,3, 3rd ed., 1996

6.3-Recommended Books:

Remington Pharmaceutical Sciences, 21st ed., 2006

6.4- Periodicals, Web Sites, …. etc

Int. J. Pharm. Sci.

Relevant web sites.

7- Facilities Required for Teaching and Learning

Computer and data show

Course Coordinator: Prof. Sayed H. Khidr

Head of Department: Prof. Sayed I. AbdelRhman

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
Preformulation studies	**1-2**	**a1,a5**	**b1,b5**	**c1,c2**	**d2,d6**
Tablet components	**3**	**a1**	**b1,b5**	**c1,c2**	**d4,d6**
Tablet making	**4**	**a1,a5**	**b1,b5**	**c1,c2,c4**	**d2,d4,d6**
Tablet components	**5**	**a1,a5**	**b5**	**c1,c4**	**d4,d6**
Types of tablets	**6**	**a5**	**b5**	**c1,c2**	**d4,d6**
Tablet coating	**7-8**	**a1,a5**	**b1,b5**	**c1,c2,c4**	**d2,d4,d6**
Problems in tablet making	**8-9**	**a1,a5**	**b1**	**c2**	**d4,d6**
Quality control for tablet dosage form	**10-11**	**a1,a5**	**b5**	**c1,c2,c4**	**d2,d4,d6**
Scale-up and technology transfer	**11-13**	**a1,a5**	**b1,b5**	**c1**	**d2,d4,d6**

Course Coordinator: Prof./ Sayed H.Kheder

Head of Department: Prof./ Sayed I.Abdel-Alrhman