Course Report

Post grad.

Pharmaceutical

Analytical

Chemistry

Department

2018-2019

Pre-master courses

2018-2019

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Medicinal chemistry

A – Basic Information:

1- Title and code: Good practice for analysis of drugs and quality control **ME-3**

2- Program(s) on which this course is given: master

3- Year / Level of programs: Pre-master

4- Credit hours:

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof.Dr/ Sobhy ElAdl
- Prof.Dr/Abd allah El shanawany
- Dr/ Mohammed Sebaiy

6- Course coordinator:

- Prof.Dr/ Sobhy ElAdl
- Prof.Dr/Abd allah El-shanawany

7- External evaluator:

- Prof. Dr. / Samir Elmoghazy (Cairo University)

B- Statistical Information:

No. of students attending the course	No. 9	100 %
No. of students completing the course	No. 9	100 %

Results:					
Passed	No. 8	88.89 %	Failed	1	11.12%

Grading of successful students:					
Excellent	2	22.22%	Very Good	No. 6	66.67 %
Good	-	-	Pass	-	-

C- Professional Information:

1- Course Teaching:

Topic	No of hours	Lecturers
Validation parameters in analysis	4	Prof.Dr/ Sobhy ElAdl
Application of quantitative analysis for different drugs.	4	
Quality control and how to minimize the synthesis errors.	4	
Quality assurance and basic requirement.	4	
Applications of Spectrophotometric analysis for dosage forms	4	

Activity		
H^1,C^{13},N^{15},F^{19}- NMR	4	Prof.Dr/Abdallah El-shanawany
Advanced techniques in mass spectroscopy	4	
Atomic absorption	4	
Fluorimetric analysis	4	
Radioimmune Assay	4	
Electrophoresis	4	Dr/Mahmoud sebaiy
Advanced GC-MS chemistry **Activity**	4	
Spectrodenistometric (TLC scanner)	4	
Forensic chemistry	4	
Final exam		

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√

Case study:	-
Other assignment / homework:	√

3- Student Assessment:

Method of Assessment	Percentage of total %
Written examination	75%
Oral examination	15%
Activity	10%

Members of examination committee:

- Prof.Dr/ Sobhy ElAdl
- Prof.Dr/abdallah el-shanawany
- Dr/Mahmoud elsebaiy

4- Facilities and Teaching Materials:

Totally adequate	
Adequate to some extent	√
Inadequate	

5- Administrative Constraints: No permenant lectures places.

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Internet services are inadequate	Internet services have been

	enhanced.
The course is too long.	The new system already applied from this year

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
Course is appropriately designed	------

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Updating course learning materials	Completed

9- Action plan for academic year 2019– 2020:

Action required	Completion date	Person responsible
Continuous development of course content to cope with program ILOS and labour market needs.	2019- 2020	Course coordinator & head of department

Course Coordinator:

- Prof.Dr/ Sobhy ElAdl
- Prof.Dr/ abdallah el shanawany

Head of department: Prof. Dr. / Kamel abd-elreheim metwally.

Signature:

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Medicinal chemistry

A – Basic Information:

1- Title and code: Drug Design **M109**

2- Program(s) on which this course is given: master

3- Year / Level of programs: Pre-master

4- Credit hours:

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof.Dr. / Mohammed Al-Hussany
- Prof.Dr. / Mohammed mohammed Baraka
- Prof.Dr/Kamel abd eireheim metwally

6- Course coordinators:

- Prof. Dr. / Mohammed Al-Hussany

7- External evaluator:

- Prof. Dr. / Samir El- Moghazy (Cairo University)

B- Statistical Information:

No. of students attending the course	**6**	100%
No. of students completing the course	**6**	100%

Results:					
Passed	6	100%	Failed	-	-

Grading of successful students:					
Excellent	0	0%	Very Good	2	33.33%
Good	2	33.33%	Pass	2	33.33%

C- Professional Information:

1- Course Teaching:

Topic	No of hours	Lecturers
Principles of drug design	4	Prof. Dr. / Mohammed Al-Hussany Prof. Dr. / mohammed mohammed Baraka
Combinatorial chemistry (combinatorial and parallel synthesis in medicinal chemistry projects)	4	
Combinatorial chemistry (solid phase techniques)	4	
QSAR (hydrophobicity, electronic effects)	4	

QSAR(steric factors, other physicochemical parameters)	4	Prof.Dr kamel abd elreheim metwally
Activity(Reports)	4	
Drug design and relationship of functional groups to biological activity (hydrophilic/ hydrophobic properties)	4	
Drug design and relationship of functional groups to biological activity (resistance to chemical and enzymatic degradation)	4	
Relationship between molecular structure and biological activity	4	
Docking (Introduction)	4	
Docking (procedures)	4	
Activity(Reports)	4	
Applications of drug design (self destruct drugs, peptidomimetics)	4	
Applications of drug design (targeting drugs)	4	

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student Assessment:

Method of Assessment	Percentage of total %
Written examination	75%
Oral Examination	15%
Activity	10%

Members of examination committee:

- Prof.Dr. Mohammed Al-hussany
- Prof.Dr. Mohammed mohammed Baraka
- Prof.Dr/kamel abdelreheim metwally

4- Facilities and Teaching Materials:

Totally adequate	
Adequate to some extent	√

Inadequate	

5- Administrative Constraints: No permanent places for lectures.

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Internet services are inadequate	Internet services have been enhanced.
The course is too long.	The new system already applied from this year

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
Well designed course	-------

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Updating course learning materilas	Completed

9- Action plan for academic year 2019-2020:

Action required	Completion date	Person responsible
Continuous development of course content to cope with	2019- 2020	Course coordinator & head

program ILOS and labour market needs.		of department

Course Coordinator:

Prof. Dr / Prof.Dr. Mohammed Al-Hussany

Head of department: Prof. Dr. / kamel abd elreheim metwally

Signature:

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Medicinal chemistry

A – Basic Information:

1- Title and code: Advanced instrumental analysis & chromatographyI
M101

2- Program(s) on which this course is given: Pre-master

3- Year / Level of programs: Pre-master

4- Credit hours:

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof.Dr. Elsayed Lashen (Medicinal chemistry department)
- Prof.Dr. Hisham Ezzet(Analytical chemistry department)

6- Course coordinators:

- Prof.Dr. Elsayed Lashen
- Prof.Dr. Hisham Ezzet

7- External evaluator:

- Prof. Dr. / Samir El-Moghazy(Cairo University)

B- Statistical Information:

No. of students attending the course	No. 10	100 %
No. of students completing the course	No. 10	100 %

Results:					
Passed	9	90 %	Failed	1	10%

Grading of successful students:					
Excellent	-	-	Very Good	2	22%
Good	4	44%	Pass	3	34%

C- Professional Information:

1- Course Teaching:

Topic	No of hours	Lecturers
Advanced Ultra-violet spectroscopy	4	Prof.Dr. Elsayed Lashen Prof.Dr. Hisham Ezzet
New aspects in vibrational spectroscopy (IR spectroscopy)	4	
Application of Nuclear magnetic resonance (NMR)	4	
Application of Mass spectrometry(MS)	4	

Medicinal application of spectroscopy in diagnosis of diseases	4	
Raman spectroscopy.	4	
Advanced HPLC. **Activity (Reports)**	4	
HPLC & its medicinal and pharmaceutical application	4	
High performance thin layer chromatography (HPTLC).	4	
Advanced Gas chromatography.	4	
GC & its medicinal and pharmaceutical application	4	
New aspects of Supercritical fluid chromatography (SFC) and ion exchange chromatography (IEC).	4	
Capillary electrophoresis(CE)	4	
Analytical application of dimeric and polymeric molecules. **Activity (Reports)**	4	

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student Assessment:

Method of Assessment	Percentage of total %
Written examination	75%
Oral examination	15%
Activities	10%

Members of examination committee:

- Prof.Dr. Elsayed Lashen
- Prof.Dr. Hisham Ezzet

4- Facilities and Teaching Materials:

Totally adequate	
Adequate to some extent	√
Inadequate	

5- Administrative Constraints: No permanent lectures places

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Internet services are inadequate	Internet services have been enhanced.
The course is too long.	The new system already applied from this year

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
Well designed course	----------

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Updating course learning materilas	Completed

9- Action plan for academic year 2019– 2020:

Action required	Completion date	Person responsible
Continuous development of course content to cope with program ILOS and labour market needs.	2019- 2020	Course coordinator & head of department

Course Coordinator:

- Prof.Dr. Elsayed Lashen
- Prof.Dr. Hisham Ezzet

Head of department: Prof. Dr. / kamel abdelreheim metwally

Signature:

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Analytical chemistry

A – Basic Information:

1- Title and Code Physical Chemistry **M106**

2- Program(s) on which this course is given: Master

3- Year / Level of programs: Pre-Master

4- Credit hours: -------

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr/ Magda Ayad
- Prof. Dr/ Mervat Hosny
- Prof. Dr/ Wafaa Hassan

Prof. Dr/ Hawaa Mohamed

6- Course coordinator:

- Prof. Dr. / Wafaa Hassan

7- External evaluator:

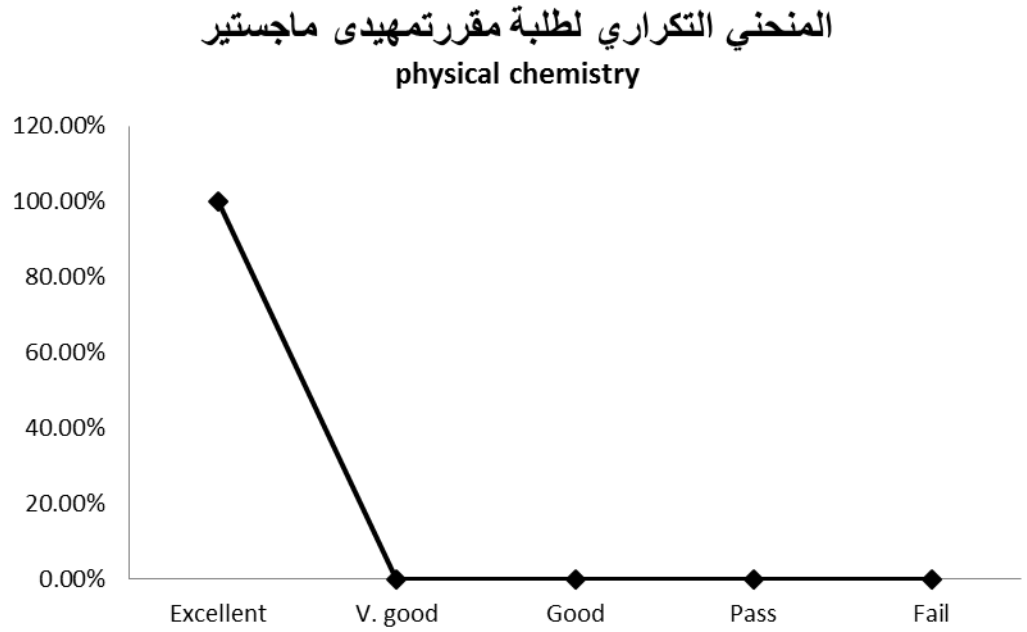
- Prof.Dr. / Gamal Saleh (Assuit University)

B- Statistical Information:

No. of students attending the course:	No. 9	100%
No. of students completing the course:	No. 9	100%

Results:					
Passed	No.9	100%	Failed	No.0	0%

Grading of successful students:					
Excellent	No.9	100%	Very Good	No.0	0%
Good	No.0	0%	Pass	No.0	0%



C- Professional Information:

1- Course Teaching:

Week number	Contents	lecturer
1	• Introduction of kinetics and rate of reactions	Prof. Dr/ Magda Ayad
2	• Molecular and order of	

	reaction.	
3	• Parallel and consecutive reactions.	
4	• Methods used for determination of the order of reactions	
5	• Theories of reaction rates and chain reaction	Prof. Dr/ Mervat Hosny
6	• Criteria of catalysis.	
7	• Homogenous and enzyme catalysis	
8	• Heterogeneous catalysis	
9	• Nature of electrolytes in solution.	Prof. Dr/ Wafaa Hassan
10	• Photochemistry and properties of electromagnetic radiations.	
11	• Laws of photochemical process, quantum yield and chain reaction.	
12	• Solutions: • Principles and concentration and solubility.	Prof. Dr/ Hawaa Mohamed
13	• Factors affecting solubility • Solute-solvent interaction. • Solubility and temperature.	

	• Effect of pressure on solubility.	
14	• Solutions of liquids in liquids • Solutions of solid in liquids (Colligative properties of solutions.)	
15	• Written Exam	•

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student assessment:

Method of Assessment	Percentage %
Written examination	75
Oral examination	15
Activity	10
Total	100

Members of examination committee:

- Prof. Dr/ Magda Ayad
- Prof. Dr/ Mervat Hosny
- Prof. Dr/ Wafaa Hassan

4- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	
Inadequate	

5- Administrative Constraints: no constrain

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Increase number of the practice cases within the course	The department will discuss this suggestion.

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
The course aims are clear, well designed and linked to program ILOS	----------

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Revision of the course with updating references used.	completed

9- Action plan for academic year 2019– 2020:

Action required	Completion date	Person responsible
Revision of the course content for the preparation of new post graduates by laws	2020	Course team

Course Coordinator: Prof. Dr. / Wafaa Hassan

Head of Department:

تم اعتماد التقرير في مجلس القسم بتاريخ 2019/10/8

COURSE REPORT

Drug Stability

2018/2019

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutics

A – Basic Information:

1- Title and code: Drug stability ME2

2- Program(s) on which this course is given: master

3- Year / Level of programs: pre-master

4- Credit hours:

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr/ Mahmoud Abdul Ghany
- Prof.Dr/Hanaa El-Ghamry

6- Course coordinator:

- Prof. Dr/ Mahmoud Abdul Ghany

7- External evaluator:

- Prof. Dr. / Osama Soliman (Mansoura University)

B- Statistical Information:

No. of students attending the course	3	100 %
No. of students completing the course	3	100%

Results:					
Passed	No.2	100%	Failed	-	-

Week number	**Lecture content (4 hr/w)**	**Lecturer**
1	• Drug stability (Overview – importance)	Prof. Dr/ Mahmoud Abdel Ghany
2	• Stability regulations (overview)	
3	• Critical regulatory requirements for a stability program	
4	• Global stability practices	
5	• Understanding and predicting pharmaceutical product shelf life	
6	• Stability methodologies (overview)	
7	• Development of stability indicating methods • **(Presentation)**	
8	• Overview of USP-NF requirements for stability	
9	• Non chromatographic methods for stability program	
10	• Vibrational spectroscopic methods for quantitative analysis	Prof.Dr/Hanaa El-Ghamry
11	• Evaluation of stability data	
12	• Qualification, calibration and maintenance of	

	stability chambers	
13	• **Stability operation practices**	
14	• Stability studies in biologics • **(Final Presentation)**	
15	• Written exam	

Grading of successful students:

Excellent	2	66.6%	Very Good	1	33.3%
Good	-	-	Pass	-	-

C- Professional Information:

1- Course Teaching:

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-

Other assignment / homework:	√

3- Student Assessment:

Method of Assessment	Percentage of total %
Written examination	75
Oral Exam	15
Activity	10

Members of examination committee:

- Prof. Dr/ Mahmoud Abdul Ghany
- Prof.Dr/Hanaa El-Ghamry

4- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	
Inadequate	

5- Administrative Constraints: no constrain

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Addition of practical cases and management strategies for stability	Will be considered

problems	

7- Comments from external evaluator(s):

Comments from external evaluator	**Response of course team**
The course needs some refining and update.	References are updated and course will include activities in course specification 2019- 2020.

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Updating learning materials	completed

9- Action plan for academic year 2019– 2020:

Action required	**Completion date**	**Person responsible**
Revision of course content and make required updates: practical cases of instability	2019- 2020	Course team
Updating postgraduate bylaws	2019- 2020	Head of department Vice dean for postgraduate studies

Course Coordinator: Prof. Dr/ Mahmoud Abdel Ghany

Head of department: Prof. Dr. / Nagia Ahmed El-Megarb


Master courses
2018-2019

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Analytical chemistry

A – Basic Information:

1- Title and Code: Spectrophotometery **Asp3**

2- Program(s) on which this course is given: Master

3- Year / Level of programs: Master

4- Credit hours: -------

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr/ Hanaa Saleh
- Prof. Dr/ Magda El Maamly
- Dr/ Rania Adel

6- Course coordinator:

- Prof . Dr/ Hanaa Saleh

7- External evaluator:

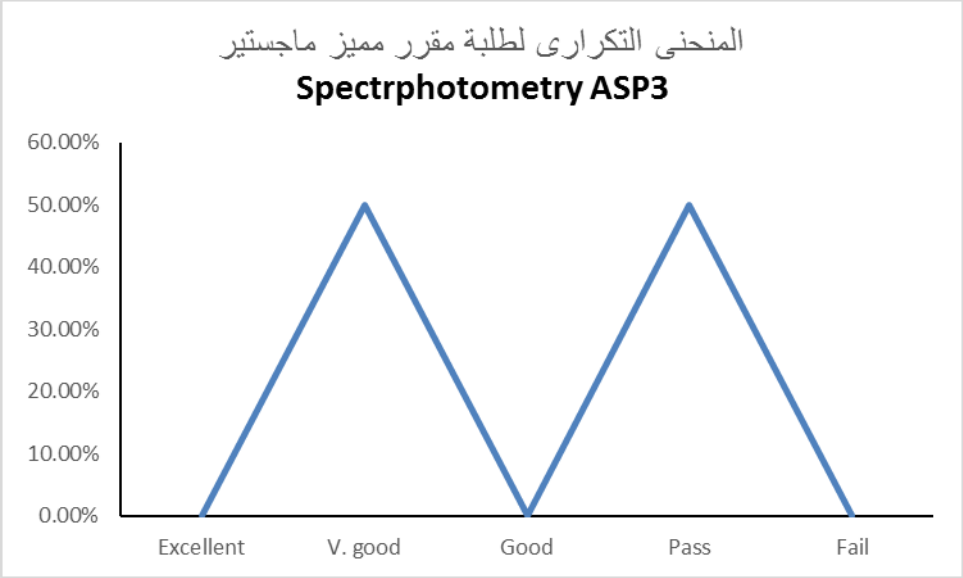
- Prof.Dr. / Gamal Saleh (Assuit University)

B- Statistical Information:

No. of students attending the course:	No. 2	100%
No. of students completing the course:	No. 2	100%

Results:					
Passed	No.2	100%	Failed	No.0	0%

Grading of successful students:					
Excellent	No.0	0%	Very Good	No.1	50%
Good	No.0	0%	Pass	No.1	50%



C- Professional Information:

1- Course Teaching:

Week number	Contents	Lecturer
1	Introduction to light absorption Electromagnetic spectrum Visible and ultraviolet spectra The Beer-Lambert law Deviation from Beer-Lambert law	Prof. Dr/ Hanaa Saleh

2	Spectra of some important naturally occurring chromophores	
3	Spectrophotometer configuration	
4	Choice of spectrophotometer operating conditions	
5	Use of spectrophotometer Baseline Isosbestic points Wavelength and absorbance calibration Choice and use of cuvettes Detailed examples	Prof. Dr/ Magda El Maamly
6	Derivative spectrophotometry Introduction Instrumentation	
7	Derivative spectrophotometry Practical Aspects Applications	
8	Spectrophotometric assays Introduction Assay Design Activity	
9	Spectrophotometeric assay of protein	Dr/ Rania Adel
10	Enzyme based spectrophotometric assay	

11	Luminescence based assay	
12	Flow-injection spectrophotometry	
13	Pharmaceutical and biological applications of spectrophotometry	
14	Revision & Open Discussion	
15	Written exam	

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student assessment:

Method of Assessment	Percentage %
Written examination	75
Oral examination	15

Activity	10
Total	100

Members of examination committee:

- Prof. Dr/ Hanaa Saleh
- Prof. Dr/ Magda El Maamly
- Dr/ Rania Adel

4- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	
Inadequate	

5- Administrative Constraints: no constrain ----------

6- Students Evaluation of the Course:

Students evaluation of the course	**Response of course team**
Practical sessions are required to carry out some experiments to clarify the theoretical content.	The department will discuss this suggestion.

7- Comments from external evaluator(s):

Comments from external evaluator	**Response of course team**
Other methods in addition to the previous	Evaluator's comments

teaching methods are required for increase the ability to solve problem e.g: practical analysis of drugs.	will be carefully considered.

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Revision of the course with updating references used.	Completed

9- Action plan for academic year 2019– 2020:

Action required	**Completion date**	**Person responsible**
Revision of the course content for the preparation of new post graduates by laws	2020	Course team

Course coordinator: -Prof.Dr/ Hisham Ezzat

Head of Department:

تم اعتماد التقرير في مجلس القسم بتاريخ 2019/10/8

Ph-D courses 2018-2019

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Analytical chemistry

A – Basic Information:

1- Title and Code: Chromatographic analysis of pharmaceuticals **ASP6**

2- Program(s) on which this course is given: PhD

3- Year / Level of programs: PhD

4- Credit hours: -------

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr/ Gamal Hassan
- Asssist Prof. Dr/ Hawaa Khalil
- Dr/ Sara Anis

6- Course coordinator:

- Prof. Dr/ Gamal Hassan

7- External evaluator:

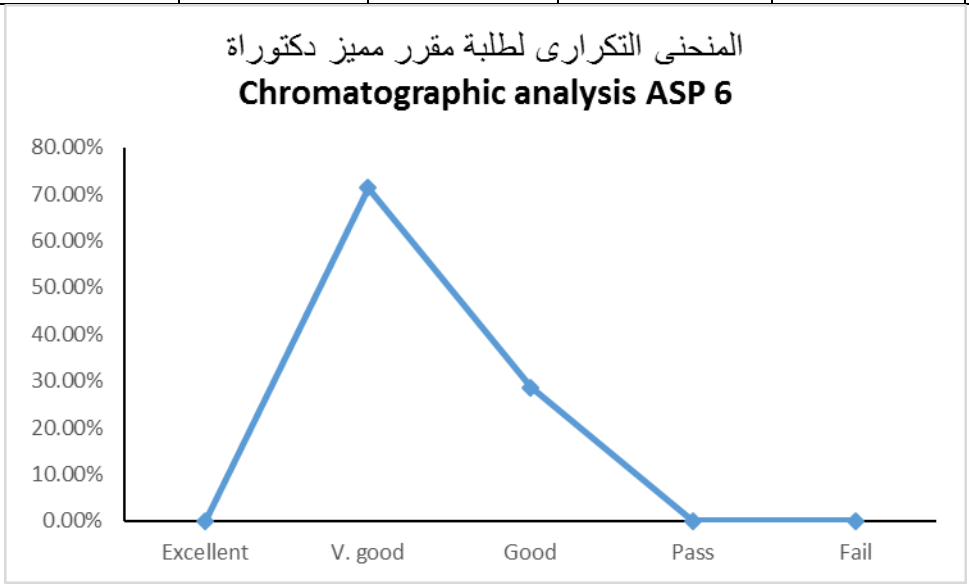
- Prof.Dr. / Gamal Saleh (Assuit University)

B- Statistical Information:

No. of students attending the course:	No. 7	100%
No. of students completing the course:	No. 7	100%

Results:					
Passed	No.7	100%	Failed	No.0	0%

Grading of successful students:					
Excellent	0	0%	Very Good	5	71.42%
Good	2	28.57%	Pass	0	0



C- Professional Information:

1- Course Teaching:

Topic	No of hours	Lecturers
General concept of analytical chromatography, The chromatogram, Column efficiency, Retention parameters Optimization of chromatographic analysis, Classification of analytical techniques.	20	Prof. Dr/ Gamal Hassan
Gas Chromatography High performance liquid chromatography Ion chromatography Thin layer chromatography	20	Asssist Prof. Dr/ Hawaa Khalil
Supercritical fluid chromatography Size exclusion chromatography Capillary electrophoresis and electrochromatography Planar chromatography	20	Dr/ Sara Anis

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student assessment:

Method of Assessment	Percentage %
Written examination	75
Oral examination	15
Activity	10
Total	100

Members of examination committee:

- Prof. Dr/ Gamal Hasan
- Asssist Prof. Dr/ Hawaa Khalil
- Dr/ Sara Anis

44- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	

Inadequate	

5- Administrative Constraints: no constrain

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Practical sessions are required to carry out some experiments to clarify the theoretical content.	The department will discuss this suggestion.

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
Other methods in addition to the previous teaching methods are required for increase the ability to solve problem e.g: practical analysis of drugs.	Evaluator's comments will be carefully considered.

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Revision of the course with updating references used.	completed

9- Action plan for academic year 2019– 2020:

Action required	Completion date	Person responsible
Revision of the course content for the preparation of new post graduates by laws	2020	Course team

- **Course coordinator**: -Prof.Dr/ Gamal Hassan
- **Head of Department:**

تم اعتماد التقرير في مجلس القسم بتاريخ 2019/10/8

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Analytical chemistry

A – Basic Information:

1- Title and Code: Chemometric Analysis **ASP4**

2- Program(s) on which this course is given: PhD

3- Year / Level of programs: PhD

4- Credit hours: -------

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr/ Hisham Ezzat
- Prof. Dr/ Hanaa Saleh
- Dr./ Rania Adel

6- Course coordinator:

- Prof. Dr/ Hisham Ezzat

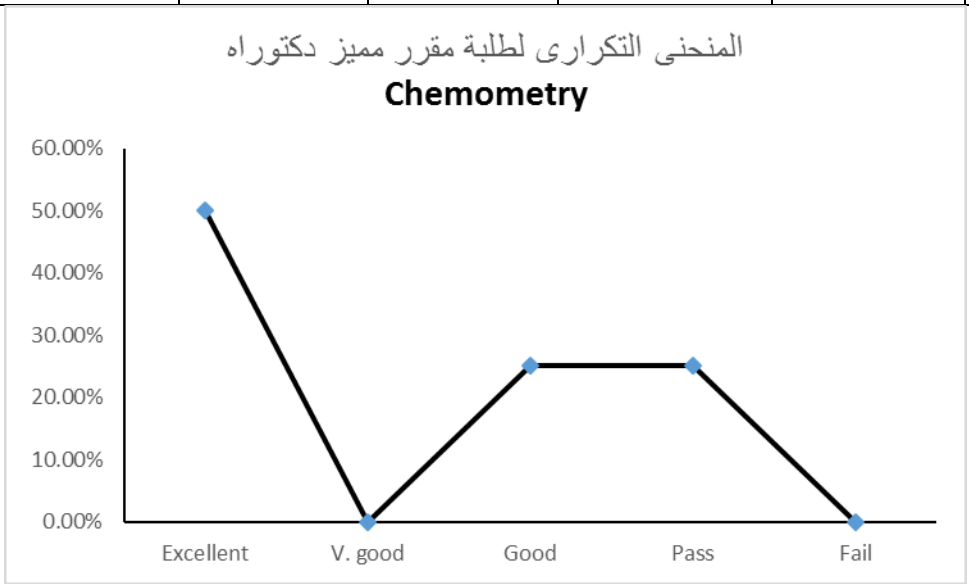
7- External evaluator:
Prof.Dr. / Gamal Saleh (Assuit University)

B- Statistical Information:

No. of students attending the course:	No. 4	100%
No. of students completing the course:	No. 4	100%

Results:					
Passed	No.5	100%	Failed	No.0	0%

Grading of successful students:					
Excellent	No.2	50%	Very Good	No. 0	0%
Good	No.1	25%	Pass	No.1	25%



C- Professional Information:

1- Course Teaching:

Topic	No of hours	Lecturers

Experimental Design and Optimization Calibration Methods in Instrumental Analysis	20	• Prof. Dr/ Hisham Ezzat
Multivariate Analysis Non-parametric and Robust Methods Errors in quantitative analysis	20	• Prof. Dr/ Hanaa Saleh
Statistics of Repeated Measurements Significance Tests The Quality of Analytical Measurements	20	• Dr./ Rania Adel

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student assessment:

Method of Assessment	Percentage %
Written examination	75
Oral examination	15

Activity	10
Total	100

Members of examination committee:

- Prof. Dr/ Hisham Ezzat
- Prof. Dr/ Hanaa Saleh
- Dr./ Rania Adel

4- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	
Inadequate	

5- Administrative Constraints: no constrain

6- Students Evaluation of the Course:

Students evaluation of the course	**Response of course team**
Practical sessions are required to carry out some experiments to clarify the theoretical content.	The department will discuss this suggestion.

7- Comments from external evaluator(s):

Comments from external evaluator	**Response of course team**
Other methods in addition to the previous teaching methods are required for increase the	Evaluator's comments will be carefully

ability to solve problem e.g: practical analysis of drugs.	considered.

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
.Revision of the course with updating references used.	Completed

9- Action plan for academic year 2019– 2020:

Action required	**Completion date**	**Person responsible**
Revision of the course content for the preparation of new post graduates by laws	2020	Course team

- **Course coordinator**: -Prof.Dr/ Hisham Ezzat
- **Head of Department:**

- **تم اعتماد التقرير في مجلس القسم بتاريخ 8/10/2019**

Annual Course Report

University: Zagazig **Faculty:** Pharmacy

Department: Pharmaceutical Analytical chemistry

A – Basic Information:

1- Title and Code: Advanced Spectroscopy of analytical chemistry **ASP5**

2- Program(s) on which this course is given: PhD

3- Year / Level of programs: PhD

4- Credit hours: -------

Lectures	4hrs/week

5- Names of lecturers contributing to the delivery of the course:

- Prof. Dr. / Wafaa Hassan
- Ass. Prof. Dr. / Manal El Masry

6- Course coordinator:

- Prof. Dr. / Wafaa Hassan

7- External evaluator:

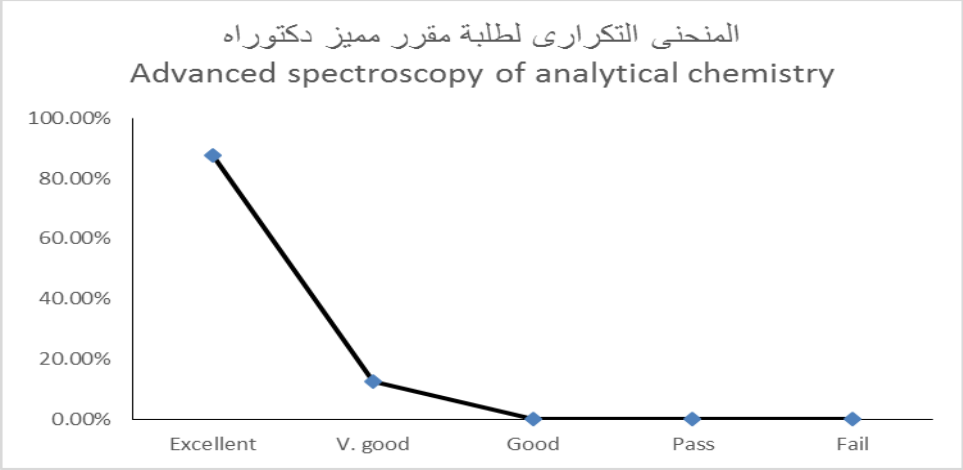
- Prof .Dr. / Gamal Saleh (Assuit University)

B- Statistical Information:

No. of students attending the course:	No. 8	100%
No. of students completing the course:	No. 8	100%

Results:					
Passed	No.8	100%	Failed	No.0	0%

Grading of successful students:					
Excellent	No.7	87.5%	Very Good	No.1	12.5%
Good	No.0	0%	Pass	No.0	0%



C- Professional Information:

1- Course Teaching:

Week number	Contents	lecturer
1	**Spectroscopy** Introduction Theory	Prof. Dr. / Wafaa Hassan
2	**Classification of spectroscopic techniques**	

3	**Nuclear magnetic resonance spectroscopy (NMR)** Principals Vector Model	
4	**Nuclear magnetic resonance spectroscopy (NMR)** Nuclear spin states Nuclear magnetic moments Absorption of Energy Resonance	
5	**Nuclear magnetic resonance spectroscopy (NMR)** Chemical shift Local diamagnetic shielding Spin-spin splitting	
6	**Nuclear magnetic resonance spectroscopy (NMR)** Typical ^{1}H NMR absorptions by type of compound	
7	**Nuclear magnetic resonance spectroscopy (NMR)** Carbon – 13 spectra, including heteronuclear coupling with other nuclei.	

8	**Mass Spectrometry** Principle Mass spectrometer Sample introduction **Activity**	Ass. Prof. Dr. / Manal El Masry
9	**Mass Spectrometry** Ionization methods: Electron ionization EI Chemical ionization CI Desorption ionization techniques (SIMS, FAB and MALDI) Electrospray ionization ESI	
10	**Mass Spectrometry** Mass analysis Detection and Quantification	
11	**Tandem Mass Spectrometry (MS/MS)** Introduction Scan modes Reactions studied in MS/MS	
12	**Tandem Mass Spectrometry (MS/MS)** Applications: Structure elucidation Selective detection	

	Ion-molecule reaction	
13	**Mass spectrometry/ Chromatography coupling** Coupling techniques: GC/MS, HPLC/MS, CE/MS Pharmaceutical, biological and environmental applications	
14	**Revision**	
15	**Written exam**	

Topics taught as a percentage of the content specified:

>90 %	√	**70 – 90 %**		**<70%**	

- **Reasons in detail for not teaching any topics:** ----------
- **If any topics were taught are not specified , give reasons in detail**: ----------

2- Teaching and learning Methods:

Lectures:	√
Seminar / Workshop:	√
Case study:	-
Other assignment / homework:	√

3- Student assessment:

Method of Assessment	Percentage %
Written examination	75
Oral examination	15
Activity	10
Total	100

Members of examination committee:

- Prof. Dr. / Wafaa Hassan
- Ass. Prof. Dr. / Manal El Masry

4- Facilities and Teaching Materials:

Totally adequate	√
Adequate to some extent	
Inadequate	

5- Administrative Constraints: no constrain **----------**

6- Students Evaluation of the Course:

Students evaluation of the course	Response of course team
Increase number of the practice cases within the course	The department will discuss this suggestion.

7- Comments from external evaluator(s):

Comments from external evaluator	Response of course team
The course aims are clear, well	----------

designed and linked to program ILOS	

8- Course Enhancement:

Action required	State whether or not complete and give reasons for any non-completion
Revision of the course with updating references used.	completed

9- Action plan for academic year 2019– 2020:

Action required	**Completion date**	**Person responsible**
Revision of the course content for the preparation of new post graduates by laws	2020	Course team

- **Course Coordinator**: Prof. Dr. / Wafaa Hassan
- **Head of Department**:

تم اعتماد التقرير في مجلس القسم بتاريخ 2019/10/8