



Course Specification for Phytochemistry-I

I. Course Identification and General Information:					
1	Course Title:	Phytochemistry-I			
2	Course Number & Code:	Ph374			
3	Credit hours:	C.H			Total
		Theoretical	Practical	Training	
		2	2		3
4	Study level/ semester at which this course is offered:	4 th level /1 st semester			
5	Pre –requisite (if any):	Botany, pharmacognosy			
6	Co –requisite (if any):	None			
7	Program (s) in which the course is offered:	Bachelor of Pharmacy			
8	Language of teaching the course:	English			
9	The department in which the course is offered:	Department of Pharmacognosy			
10	Location of teaching the course:	Faculty of Pharmacy			
11	Prepared by:	Dr. Bushra Moharam			
12	Date of approval:				

II. Course description:

This course provides information and discuss of naturally occurring products from their chemical, pharmaceutical and therapeutic applications. It deals with their extraction, isolation, detection, pharmacological and toxicological effects. Phytochemical components in this course including; alkaloids, terpenoids, and steroids are demonstrated.

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ا.د. القاسم محمد عباس

عميدة مركز التطوير وضمان الجودة
ا.م.د. هدى العماد

عميد الكلية
د. خالد الشوية

رئيس القسم
د. سلوى راوح

نائب العميد لشؤون الجودة
ا.د. محمود البريهي

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I. Intended learning outcomes (ILOs) of the course:

1. Identify different phytochemicals of biologically active compounds of natural origin and their distribution in nature and classification.
2. Clarify physico-chemical properties of substances
3. Recognize the methods of extraction, separation and purification of the constituents of natural products
4. Describe the chemical structure of phytochemical substances of different alkaloids, steroids and terpenes, their biological properties and contraindications of them.
5. Propose the possible leads to new drugs depending on natural product templates
6. Correlate the chemical structure of natural products with their pharmacological activity and predict of structural changes that modify the biological activity
7. Determine suitable methods for extraction; isolation of different compounds from natural origin
8. Perform suitable methods for extraction; isolation of alkaloids, terpenoids and steroids
9. Carry out different methods for quantitative determination of alkaloids, terpenoids and steroids in their origin or preparations
10. Identify different groups of alkaloids, terpenoids, steroids,
11. Collaborate in the write reports about the chemistry natural products such as alkaloids, terpenoids, steroids and their isolation and present them.
12. Collaborate effectively with other people, work in teamwork, team planning and manage times
13. Evaluate information from different sources, demonstrate critical thinking, problem solving and decision making abilities.

II. Intended learning outcomes (ILOs) of the course:

(A) Knowledge and Understanding:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: **Knowledge and Understanding.**

Program Intended Learning Outcomes (Sub- PILOs) in: Knowledge and Understanding		Course Intended Learning Outcomes (CILOs) in: Knowledge and Understanding	
After completing this program, students will be able to:		After completing this course, students will be able to:	
A1-	Recognize the principles of physical, chemical, clinical, social, behavioral, health and pharmaceutical sciences.	a1-	Identify different phytochemicals of biologically active compounds of natural origin and their distribution in nature and classification.

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A4-	Recognize the pharmaceutical dosage form design and the quality control of pharmaceutical formulations according to GMP and pharmacopeial requirements to support the pharmaceutical industries and research.	a2-	Clarify physico-chemical properties of substances
		a3-	Recognize the methods of extraction, separation and purification of the constituents of natural products
		a4-	Describe the chemical structure of phytochemical substances of different alkaloids, steroids and terpens, their biological properties and contraindications of them.

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Knowledge and Understanding to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Knowledge and Understanding		Teaching strategies/methods to be used	Methods of assessment
completing this course, students will be able to:			
a1-	Identify different phytochemicals of biologically active compounds of natural origin and their distribution in nature and classification.	Lectures tutorial and group discussion.	Written exam, Quizzes, homework and participation.
a2-	Clarify physico-chemical properties of substances		
a3-	Recognize the methods of extraction, separation and purification of the constituents of natural products		
a4-	Describe the chemical structure of phytochemical substances, their biological properties and contraindications of them.		

(B) Intellectual Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Intellectual skills

Program Intended Learning Outcomes (Sub-PILOs) in Intellectual skills	Course Intended Learning Outcomes (CILOs) of Intellectual Skills
After completing this program, students will be able to:	After completing this course, students will be able to:

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B3-	Design different types of safe and effective pharmaceutical dosage forms and develop novel methods of qualitative and quantitative analytical and biological analysis for pharmaceutical and biopharmaceutical products that support pharmaceutical research.	b1-	Propose the possible leads to new drugs depending on natural product templates
B4-	Plan a modern system for administration of medical foundations and merge the ethics to business during the drug marketing .	b2-	Correlate the chemical structure of natural products with their pharmacological activity and predict of structural changes that modify the biological activity
		b3-	Determine suitable methods for extraction; isolation of different compounds from natural origin

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Intellectual Skills to Teaching Methods and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Intellectual Skills.		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures, Solving Problem, Discussions, methods	Oral presentation, Written exam, Quizzes, and participation
b1-	propose the possible leads to new drugs depending on natural product templates		
b2-	Correlate the chemical structure of natural products with their pharmacological activity and predict of structural changes that modify the biological activity		
b3-	determine suitable methods for extraction; isolation of different compounds from natural origin		

(C) Professional and Practical Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: Professional and Practical Skills

Program Intended Learning Outcomes (Sub-PILOs) in Professional and Practical Skills	Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills
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After completing this program, students will be able to:		After completing this course, students will be able to:	
C2-	Handle and dispose chemicals and pharmaceutical preparations safely and effectively.	c1-	Perform suitable methods for extraction; isolation of alkaloids, terpenoids and steroids
C3-	Extract, isolate, purify, identify and formulate the natural products and assure their rational use.	c2-	Carry out different methods for quantitative determination of alkaloids, terpenoids and steroids in their origin or preparations
		c3-	Identify different groups of alkaloids, terpenoids and steroids

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of Professional and Practical Skills to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in Professional and Practical Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures ,Laboratory work, independent study.	Practical works and reports and presentations based on their experimental work.
c1-	Perform suitable methods for extraction; isolation of alkaloids, terpenoids and steroids		
c2-	Carry out different methods for quantitative determination of alkaloids, terpenoids and steroids in their origin or preparations		
c3-	Identify different groups of alkaloids, terpenoids and steroids		

(D) General / Transferable Skills:

Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) in: **General and Transferable skills**

Program Intended Learning Outcomes (PILOs) in General / Transferable skills	Course Intended Learning Outcomes (CILOs) in General / Transferable skills
After completing this program, students will be able to:	After completing this course, students will be able to:

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D1-	Practice independent learning needed for continuous professional development	d1-	Collaborate in the write reports about the chemistry natural products such as alkaloids, terpenoids, steroids and their isolation and present them.
D3	Develop financial, market management, writing, presentation and time management skills as well as creativity, critical thinking, problem solving and decision making abilities.	d2-	Collaborate effectively with other people, work in teamwork, team planning and manage times
		d3-	Evaluate information from different sources, demonstrate critical thinking, problem solving and decision making abilities.

Teaching And Assessment Methods For Achieving Learning Outcomes:

Alignment of Learning Outcomes of General and Transferable skills to Teaching and Assessment Methods:

Course Intended Learning Outcomes (CILOs) in General and Transferable Skills		Teaching strategies/methods to be used	Methods of assessment
After completing this course, students will be able to:		Lectures, small group discussions and practical classes	Reports, presentations and communication with the lecturer and his colleagues.
d1-	Collaborate in the write reports about the chemistry natural products such as alkaloids, terpenoids, steroids and their isolation and present them.		
d2-	Collaborate effectively with other people, work in teamwork, team planning and manage times		
d3-	Evaluate information from different sources, demonstrate critical thinking, problem solving and decision making abilities.		

III. Course Content:

1 – Course Topics/Items:

a – Theoretical Aspect

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Number of weeks	Contact hours
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1	Alkaloids	a1-4, b1-4, c1-3, d1-3	Definition, classification, distribution, functions, function in plant, properties, extraction, uses. Phenylalkylamine alk.; Ephedra, khat . Capsicum. Tropolone alk.; Colchicum,	3	6
2	Alkaloids	a1-4, b1-4, c1-3, d1-3	Pyridine and piperidine; tobacco, Pepper, Pomegranate Tropane alk.; Belladonna, Coca, Quinoline alk.; cinchona alk, Isoquinoline alk; opium alk, (Phenanthrene): morphine, Codeine, thebaine; benzylisoquinoline alk: papaverine;	2	4
3	Alkaloids	a1-4, b1-4, c1-3,	phthalidisoquinoline; ipecacuanha alk. Indol alk; phystostigma,, ergot , Nux	2	4
		d1-3	vomica, Vinca, Rauwolfia		
4	Mid exam	a1-4, b1-3		1	2
5	Alkaloids	a1-4, b1-4, c1-3, d1-3	Purine alk.; caffeine, theophylline, theobromine imidazol alk; pilocarpus alk, Terpenoid alk; aconitine, taxol alk	2	4
6	Steroids	a1-4, b1-4, c1-3, d1-3	Definition, Classification, Structures, Sterols, Vitamin D, Bile acids: Sources, structure, action, clinical uses Steroid hormones: (sex hormones and adrenocortical hormones)	2	4

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7	Terpenoids	a1-4, b1-4, c1-3, d1-3	Definition, classification, distribution, extraction, functions Monoterpenes ; Classification, extraction & characterization, plant containing regular monoterpene , valerian, olea eurropae, Irregular monoterpene , pyrethrum.	2	4
8	Terpenoids	a1-4, b1-4, c1-3, d1-3	Sesquiterpene ; Structure, chemical and biological properties; gossypol compound, sesquiterpene lactones; arnica, sweet wormwood Diterpene Structure, chemical and biological properties; yews, coleus.	1	2
9	Final exam	a1-4, b1-4, d1-3		1	2
Number of Weeks /and Units Per Semester				16	32

b-Practical Aspect :				
Order	Training Tasks	CILOs (symbols)	Number of weeks	Contact hours
1	Introduction and lab direction	c2-3, d1-3	1	2
2	Extraction and identification of alkaloids derived from Phenylalkylamine (khat)	c2-3, d1-3	2	4
3	Extraction and identification of Caffeine from Tea Leaves	c2-3, d1-3	1	2
4	Isolation and Identification of Nicotine- Identification of Atropine and Ephedrine	c2-3, d1-3	2	4
5	Extraction and Identification of Tropolone Alkaloids e.g. Leek Leaves	c1-3, d1-3	1	2

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6	Mid exam	c1-2	1	2
7	Extraction and Chemical Identification of Quinoline Alkaloids from Cinchona bark	c1-3, d1-3	2	4
8	Extraction and identification of alkaloids derived from piperidine (Pomegranate)	c1-3, d1-3	1	2
9	Identification of Datura Alkaloids by TLC	c1-3, d1-3	1	2
10	Extraction and identification of terpenoids	c1-3, d1-3	1	2
11	Extraction and identification of steroids	c1-3, d1-3	1	2
12	Revision	c1-3	1	2
13	Final exam	c1-2	1	2
Number of Weeks /and Units Per Semester			16	32

IV. Teaching strategies of the course:

- Lectures, Practice session, solving problem, Small group discussions, Tutorials and Practical classes

3-Assessment Methods:

Written and Oral exams, Quizzes, homework, participation, Reports , and Practical examination, practical reports, Practical works and presentations

V. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes (CILOs symbols)
1	Attendance ,Participation and quizzes	1-16	20	13%	a1,a3, a4, b1-2
2	Attendance, Practical Reports and Practical mid-semester exam	8-16	30	20%	a2, a4, b1-3

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3	Theoretical Mid-semester exam	8	30	20%	c1-3
5	Final Exam (practical)	16	20	13%	a1-4, b1, b2
6	Final Exam (Theoretical)	16	50	33%	c1-3
Total		150		100%	

VI. Students' Support:

Office Hours/week	Other Procedures (if any)
Two contact hours per week	None

VII. Learning Resource (MLA style or APA style)S:

1- Required Textbook(s) (maximum two)

- Jarald E.E. and Jarald S. E., (2009); "Textbook of Pharmacognosy and Phytochemistry" CBS Publishers & Distributors, New Delhi
- Evans W.C., Evans D. & Trease E., Saunders "Trease and Evans(2009); 'Pharmacognosy" 16th ed. Elsevier, New York

2- Recommended Readings and Reference Materials

- Steven M. Colegate and Russell J. Molyneux. (2008); "Bioactive natural products : detection, isolation, and structural determination" 2nd ed.,
- Cordell G.A. (2002); "The alkaloids: Chemistry and Biology" Volume 59, Elsevier, New York

3- Lectures Notes and Practical Manual.

3- Essential References

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4- Electronic Materials and Web Sites etc.	
	www.biomedcentral.com www.medscape.com http://www.sciencedirect.com/ http://www.ncbi.nlm.nih.gov/
5- Other Learning Material:	
	-
VIII. Facilities Required:	
1 - Accommodation:	- Well-equipped lecture halls with data show facilities, whiteboards, net connection, etc. - Well-equipped laboratories with all required equipment and reagents.
2 - Computing resources:	- Computer laboratory with internet facilities.
IX. Course Improvement Processes:	
1- Strategies for obtaining student feedback on effectiveness of teaching	
	<ul style="list-style-type: none"> Student-based assessment of the effectiveness of teaching using a questionnaire designed by the Quality Assurance Unit at the end of the semester. Meeting with students and faculty (once per semester).
2- Other strategies for evaluation of teaching by the instructor or by the department.	
	<ul style="list-style-type: none"> Assessment of the course syllabus and contents by the teachers using a questionnaire designed by the Quality Assurance Unit of the university at the end of the semester. Regular meeting and discussion of the course content between the Head of Department and the teaching staff of the course (for theory and practice).
3- Processes for improvement of teaching.	
	<ul style="list-style-type: none"> Revision of the course specification and its teaching strategies every three academic years after consideration of all issues raised by the teachers and/or students during regular meetings and



	<p>discussions.</p> <ul style="list-style-type: none"> ▪ Exploring any possible defects in the course that might be encountered by the teaching staff and their mitigation in subsequent improved versions of course specification.
<p>4- Processes for verifying standards of students' achievement</p>	
	<ul style="list-style-type: none"> ▪ Checking of a sample of students' work by an independent faculty member. ▪ Periodic exchange and check marking of a sample of students' assignments with a faculty member from another institution. ▪ Adoption of scoring rubrics to assess the students' achievement (both for ongoing or summative assessments). ▪ Regular follow-up of laboratory logbooks to assess the practical achievement of students.
<p>5- Procedures for periodically reviewing of course effectiveness and planning for improvement</p>	
	<ul style="list-style-type: none"> ▪ Student rating and feedback ▪ Peer rating and feedback ▪ Regular meeting of the Curriculum Committee of the faculty.
<p>6- Course development plans</p>	
	<ul style="list-style-type: none"> ▪ Conducting regular workshops for the staff for improving their course specification skills. ▪ Regular revision of course specification and syllabus items.

VIII. Course Policies: (including plagiarism, academic honesty, attendance etc)

The University Regulations on academic misconduct will be strictly enforced. Please refer to -----

1 Class Attendance:

- Attendance of all lectures and practical sessions is required. Unexcused absence exceeding 25% of the lectures or practical sessions will disqualify the student from entering the final exam.

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2	<p>Tardy:</p> <p>- Roll will be called in the very beginning of each lecture and practical class. Retardation for more than three weeks without a reasonable excursion, the student involved shall not be allowed to attend the class any longer and consequently shall be considered to be absent.</p>
3	<p>Exam Attendance/Punctuality:</p> <ul style="list-style-type: none"> ▪ Exam attendance is obligatory unless being excused by the department and faculty. ▪ Absence from assignments or exams will be dealt with according to the general policy of the university.
4	<p>Assignments & Projects:</p> <ul style="list-style-type: none"> ▪ Assignments: Written and oral; Laboratory logbook signed by the responsible demonstrator. ▪ Projects: Not applicable.
5	<p>Cheating:</p> <ul style="list-style-type: none"> ▪ Punishment of cheating will be according to the general policy of the university in this respect.
6	<p>Plagiarism:</p> <ul style="list-style-type: none"> ▪ Plagiarism in written essays, reports, etc. is not accepted, and students who plagiarize the works of others will be punished according to the general policy of the university.
7	<p>Other policies:</p> <ul style="list-style-type: none"> ▪ General policies of the Students' Affairs of the University and the Quality Assurance Unit.

Course Plan of Phytochemistry-I

I. - Information about Faculty Member Responsible for the Course:

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Name of Faculty Member	Bushra Moharam	Office Hours					
Location & Telephone No.	730010755	SAT	SUN	MON	TUE	WED	THU
E-mail	bushramoharam@yahoo.com.	1		1			

II. Course Identification and General Information:						
1-	Course Title:	Phytochemistry-I				
2-	Course Number & Code:	Ph374				
3-	Credit hours:	C.H				Total
		Th.	Seminar	Pr.	F. Tr.	
		2	-	2	3	
4-	Study level/year at which this course is offered:	4 th level /1 st semester				
5-	Pre –requisite (if any):	Botany, pharmacognosy				
6-	Co –requisite (if any):	None				
7-	Program (s) in which the course is offered	Bachelor of Pharmacy				
8-	Language of teaching the course:	English				
9-	System of Study:	Semesters				
10-	Mode of delivery:	Regular				
11-	Location of teaching the course:	Faculty of Pharmacy- Sana`a university				

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III. Course Description:

This course provides information and discuss of naturally occurring products from their chemical, pharmaceutical and therapeutic applications. It deals with their extraction, isolation, detection, pharmacological and toxicological effects. Phytochemical components in this course including; alkaloids, terpenoids, and steroids are demonstrated.

IV. Intended learning outcomes (ILOs) of the course:

After completing this course, students will be able to:

1. nature and classification.
2. Clarify physico-chemical properties of substances
3. Recognize the methods of extraction, separation and purification of the constituents of natural products
4. Describe the chemical structure of phytochemical substances of different alkaloids, steroids and terpenes, their biological properties and contraindications of them.
5. Propose the possible leads to new drugs depending on natural product templates
6. Correlate the chemical structure of natural products with their pharmacological activity and predict of structural changes that modify the biological activity
7. Determine suitable methods for extraction; isolation of different compounds from natural origin
8. Perform suitable methods for extraction; isolation of alkaloids, terpenoids and steroids
9. Carry out different methods for quantitative determination of alkaloids, terpenoids and steroids in their origin or preparations
10. Identify different groups of alkaloids, terpenoids and steroids
11. Collaborate in the write reports about the chemistry natural products such as alkaloids, terpenoids, steroids and their isolation and present them.
12. Collaborate effectively with other people, work in teamwork, team planning and manage times
13. Evaluate information from different sources, demonstrate critical thinking, problem solving and decision making abilities.



V. Course Content:

1 – Course Topics/Items:

a – Theoretical Aspect

Order	Topic List / Units	CILOs (symbols)	Sub-topic List	Week Due	Contact hours
1	Alkaloids	a1-4, b1-4, c1-3, d1-3	Definition, classification, distribution, functions, function in plant, properties, extraction, uses. Phenylalkylamine alk.; Ephedra, khat . Capsicum. Tropolone alk.; Colchicum,	1-3	6
2	Alkaloids	a1-4, b1-4, c1-3, d1-3	Pyridine and piperidine; tobacco, Pepper, Pomegranate Tropane alk.; Belladonna, Coca, Quinoline alk.; cinchona alk, Isoquinoline alk.; opium alk, (Phenanthrene): morphine, Codeine, thebaine; benzylisoquinoline alk.; papaverine;	4,5	4
3	Alkaloids	a1-4, b1-4, c1-3, d1-3	phthalidisoquinoline; ipocacuanha alk. Indol alk.; phystostigma., ergot , Nux vomica, Vinca, Rauwolfia	6,7	4
4	Mid exam	a1-4, b1-3		8	2

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محرم

الموصف



5	Alkaloids	a1-4, b1-4, c1-3, d1-3	Purine alk.; caffeine, theophylline, theobromine imidazol alk; pilocarpus alk, Terpenoid alk; aconitine, taxol alk	9,10	4
6	Steroids	a1-4, b1-4, c1-3,	Definition, Classification, Structures, Sterols, Vitamin D, Bile acids:	11-12	4
		d1-3	Sources, structure, action, clinical uses Steroid hormones: (sex hormones and adrenocortical hormones)		
7	Terpenoids	a1-4, b1-4, c1-3, d1-3	Definition, classification, distribution, extraction, functions Monoterpenes; Classification, extraction & characterization, plant containing regular monoterpene , valerian, olea eurropae, Irregular monoterpene , pyrethrum.	13-14	4
8	Terpenoids	a1-4, b1-4, c1-3, d1-3	Sesquiterpene; Structure, chemical and biological properties; gossypol compound, sesquiterpene lactones; arnica, sweet wormwood Diterpene Structure, chemical and biological properties; yews, coleus.	15	2
9	Final exam	a1-4, b1-4, d1-3		16	2
Number of Weeks /and Units Per Semester				16	32

b-Practical Aspect :

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Order	Training Tasks	CILOs (symbols)	Week Due	Contact hours
1	Introduction and lab direction	c2-3, d1-3	1	2
2	Extraction and identification of alkaloids derived from Phenylalkylamine (khat)	c2-3, d1-3	2,3	4
3	Extraction and identification of Caffeine from Tea Leaves	c2-3, d1-3	4	2
4	Isolation and Identification of Nicotine- Identification of Atropine and Ephedrine	c2-3, d1-3	5,6	4
5	Extraction and Identification of Tropolone Alkaloids e.g. Leek Leaves	c1-3, d1-3	7	2
6	Mid exam	c1-2	8	2
7	Extraction and Chemical Identification of Quinoline Alkaloids from Cinchona bark	c1-3, d1-3	9,10	4
8	Extraction and identification of alkaloids derived from piperidine (Pomegranate)	c1-3, d1-3	11	2
9	Identification of Datura Alkaloids by TLC	c1-3, d1-3	12	2
10	Extraction and identification of terpenoids	c1-3, d1-3	13	2
11	Extraction and identification of steroids	c1-3, d1-3	14	2
12	Revision	c1-3	15	2
13	Final exam	c1-2	16	2
Number of Weeks /and Units Pr Semester			16	32

VI. Teaching strategies of the course:

Lectures, Practice session, Small group discussions, Tutorials and Practical classes

VII. Assessment Methods:

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No.	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Attendance ,Participation and quizzes	1-16	20	13%
2	Attendance, Practical Reports and Practical mid-semester exam	8-16	30	20%
3	Theoretical Mid-semester exam	8	30	20%
5	Final Exam (practical)	16	20	13%
6	Final Exam (Theoretical)	16	50	33%
	Total		150	100%

VIII. Learning Resources:

□

1- Required Textbook(s) (maximum two).

- Jarald E.E. and Jarald S. E., (2009); "Textbook of Pharmacognosy and Phytochemistry" CBS Publishers & Distributors, New Delhi
- Evans W.C., Evans D. & Trease E., Saunders "Trease and Evans(2009); 'Pharmacognosy" 16th ed. Elsevier, New York

2- Essential References.

3- Electronic Materials and Web Sites etc.

www.biomedcentral.com www.medscape.com
http://www.sciencedirect.com/ http://www.ncbi.nlm.nih.gov/

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IX. Course Policies:	
The University Regulations on academic misconduct will be strictly enforced. Please refer to -----	
1	<p>Class Attendance:</p> <ul style="list-style-type: none"> Attendance of all lectures and practical sessions is required. Unexcused absence exceeding 25% of the lectures or practical sessions will disqualify the student from entering the final exam.
2	<p>Tardy:</p> <p>- Roll will be called in the very beginning of each lecture and practical class. Retardation for more than three weeks without a reasonable excursion, the student involved shall not be allowed to attend the class any longer and consequently shall be considered to be absent.</p>
3	<p>Exam Attendance/Punctuality:</p> <ul style="list-style-type: none"> Exam attendance is obligatory unless being excused by the department and faculty. Absence from assignments or exams will be dealt with according to the general policy of the university.
4	<p>Assignments & Projects:</p> <ul style="list-style-type: none"> Assignments: Written and oral; Laboratory logbook signed by the responsible demonstrator. Projects: Not applicable.
5	<p>Cheating:</p> <ul style="list-style-type: none"> Punishment of cheating will be according to the general policy of the university in this respect.
6	<p>Plagiarism:</p> <ul style="list-style-type: none"> Plagiarism in written essays, reports, etc. is not accepted, and students who plagiarize the works of others will be punished according to the general policy of the university.
7	<p>Other policies:</p> <ul style="list-style-type: none"> General policies of the Students' Affairs of the University and the Quality Assurance Unit.

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