

Course Specifications

University	Beni-Suef
Faculty	Pharmacy
Dept.	Pharmacognosy

1-Course Info.**Programme(s) on which the course is given:** Bachelor in Pharmacy**Course Name and code No.:** Phytochemistry 1/205**Academic year/ Level:** 2018-2019, level 3, semester 1**Credit hours:** Lecture (3) hour + Practical (1) hour**2-Overall Aim of the Course**

By the end of this course the student will acquire knowledge and skills necessary to analyze, identify and isolate different volatile oil constituents and different classes of carbohydrates from their natural sources. The students should also gain sufficient knowledge about using different chromatographic techniques in isolation of bioactive metabolites from natural sources.

3-Intended Learning Outcomes of the course (ILOs)**a. Knowledge and understanding**

At the end of this course students should be able to;

- a.1- Enumerate different natural sources and biological effects of volatile oils and carbohydrates.
- a.2- Identify physical and chemical properties of volatile oils and carbohydrates.
- a.3- Describe different methods for separation, qualitative and quantitative identification of volatile oils constituents and carbohydrates.
- a.4- Explain theory and practice of different chromatographic techniques used for isolation and purification of natural metabolites.

b. Professional and Practical Skills

At the end of this course students should be able to;

- b.1- Develop methods for extraction and isolation of volatile oils and carbohydrates from their natural sources.
- b.2- Use different chromatographic techniques in purification of different compounds.
- b.3- Detect unknown carbohydrates and mixture dyes using different chromatographic techniques as paper and chromatography, column chromatography and thin layer chromatograph.
- b.4- Draw chemical structure for volatile oil constituents using computer software program.

c. Intellectual Skills

At the end of this course students should be able to;

- c.1- Decide the appropriate chromatographic techniques for isolation and purification of active substances from natural sources.
- c.2- Compare between different chromatographic techniques used in isolation and analysis of natural products.
- c.3- Use volatile oils and carbohydrates in treatment of different human disorders.

d. General and Transferable Skills

At the end of this course students should be able to;

- d.1- Work effectively in a team.
- d.2- Perform written and oral communication and IT skills.

d.3- Develop plans of work and realistic timetables to meet targets within deadlines.

4-Course Contents

Topics	No. of hours	
	Tutorial / Practical	Lecture
General introduction of volatile secondary metabolites	-	3
Preparation methods of volatile oils	1	3
Biosynthetic pathways for the production of volatile oils	-	3
Common terpenoid volatile oils	-	3
Common aromatic volatile oils	-	3
Other important volatile oils	-	3
Carbohydrates introduction	-	3
Monosaccharides and oligosaccharides	1	3
Polysaccharides and artificial sweeteners	1	3
Chromatography theory and applications	2	6
Identification of volatile oils using Gas chromatography	1	3
Qualitative tests for different volatile oil constituents.	1	-
Quantative determination of eugenol. Quantative determination of Benzaldehyde and carvone.	1	-
Application of computer software program in drawing chemical structures. (2D & 3D)	1	-
Volatile oil activity (poster presentation)	1	-
Revision and practical assessments	2	-
Total	12	36

5- Teaching and learning Methods

- 5.1. Lectures
- 5.2. Practical sessions
- 5.3. Field visit
- 5.4. Research project

6- Student Assessment Methods

a-Methods

- Written exams to assess knowledge, understanding and higher intellectual skills of the student.
- Practical exam to assess professional skills acquired by the student.
- Oral exam to assess communication skills of the students.
- Project assessment to assess research and presentation skills.

b- Assessment Schedule

Type of Assessment	Weak
Assignments	7-12
Practical exam	12
Final Written exam	14-16
Final Oral exam	14-16

c- Weighting of Assessment Marks

Type of Assessment	Marks	Weight (%)
Practical exam	70	35%
Final Written exam	100	50%
Final Oral exam	30	15%
Total	200	100%

7-List of References**a. Notes**

- Course Notes "Notes on Phytochemistry 1" for third year pharmacy students by third year staff members.

b. Mandatory Books**c. Suggested Books**

- McCreath, Simone Badal, and Rupika Delgoda. Pharmacognosy: Fundamentals, Applications and Strategies. Academic Press, 2017.
<https://drive.google.com/file/d/0B523ZQMfG7rhdmFKMjAwUWg4Yk0/view?usp=sharing>
- Dewick, Paul M. Medicinal natural products: a biosynthetic approach. John Wiley & Sons, 2nd edition.

d. Journals and websites

Course Coordinator: Dr. Rabab Mohamed

Head of department: Prof. Dr. Sameh Abo Zaid...

Date: 9-2018...