Course Specification

1-Basic Information

Title: Screening, isolation and identification of the active constituents.
Code: MPG 042
Level: M. of Pharm. Sci. (Pharmacognosy) year 2
Department Pharmacognosy
Unit: 1
Lecture: 1 hrs Tutorial/Practical: Total: 1h

2- Aims of Course

Upon successful completion of this course, the graduates should have information about

1-The different methods for isolation of the active constituents from the natural sources.

2- Full data about the methods of identification of the isolated compounds by using different chemical, biological and spectral methods of identification.

3-The recent methods for purification of the isolated compounds.

-4-The biological effects of the isolated compounds.

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

after completion of this course, the graduates should be able to:

a1 Know the fundamentals of basic sciences of Pharmacognosy and the up to date knowledge and the scientific development in the field of screening, isolation and identification of the active constituents.

al- The composition of the medicinal plants.

- how to isolate the active constituents from other constituents in the medicinal plants.
- how to identify the isolated compounds.
- understand the pharmacological effects for these compounds.

a2.Knowle the lab, safety and disposal of waste

a3..Knowle the ethics in the scientific research and professional practice

b- Intellectual Skills:

after completion of this course, the graduates should be able to:

b1.Make a research study and write scientific methodology when dealing with problems, according to the available information.

b2-Analyse and evaluate information in the field of specialization as benchmarks and extrapolation.

- select the best method for isolation of the different constituents of the medicinal plants.
- -Measure and conclude the activity of the isolated compounds.
- -conclude methods for identification and evaluation of the isolated compounds.

c- Professional and practical Skills: The graduates should:

c2- Master the basic, laboratory and modern skills in the field of specialization.

- Acquiring skills for isolation of pure compounds from the different plant extracts.
- have skills for evaluation of the isolated compounds for the medical applications.
- -Acquiring skills to detect adulteration of any supplied natural drugs and the expiring of the exported drugs.

c3-Write and design a good scientific reports and publications

c4.Know how to keep environmental safely

c5- Applications of quality basics in laboratory practice and hospitals.

d- General and Transferable Skills: The graduate should :

d1- Use information technology skills including word processing, power point presentation and spreadsheets, in addition to online net search.

d2- Improve his communication and time management skills

d3- Work effectively in team.

d4- Writing reports and effectively present his work

4- Course Contents

Topic	No. of hrs	Lecture	Tutorial / Practical
Screening of the active constituents.	2	2	-
The biological screening, which include: a-pharmacological screening b-antimicrobial screening c-cytotoxic screening	3	3	-
The different methods for isolation of the chemical constituents, include;a-isolation methods b-the recent chromatographic methods for isolation.	5	5	-
Methods for purification of the compounds	2	2	-
The different spectroscopic methods for identification of the compounds.	8	8	-
Total	20	20	-

5- Teaching and Learning Methods

5.1- **Lectures**
5.1.1- Computer, data show, white board, marker and OHP
5.2- **Library**
5.3.electonic library.
5.4-Reports

6- student Assessment

a- Student Assessment methods

6.1- **Written** to assess the knowledge and understanding skills
6.2-**Reports**
6.3-presentation

7- List of References

a-Course Notes

Lecture notes

b- Essential Books

1-G.H.M. Lawrence,"taxonomy of vascular plants"The Macmillan Company, New York, 12th ed. (1968).
2-J.Hutchinson, "The genera of flowering plants"Clarendon press, Oxford (1964).
3-J.C.Willis and H.K.A.Shaw, "A Dictionary of the flowering plants and ferns" Cambridge University Press, Cambridge, London, New York, 8th ed. (1973).
4-J.Hutchinson, "The families of flowering plants"Oxford University press 2nd ed. (1959).
5-L.H.Baily'The standard cyclopedia of horticulture" The Macmillan Company, New York, 2nd ed. (1963).

c-Recommended Books

d- Periodicals, Web Sites, …. etc

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Phytochemistry, Fitoterapia and Pplanta Medica

Course Coordinator: Dr. Amany Sayed Ahmed

Head of Department: Dr. Azza Abas Khalifa

Program Coordinator: Dr. Amany Sayed Ahmed

Course Specification

1-Basic Information

Title: Advanced study in the natural products Code: MPG 041
Level : M. of Pharm. Sci. (Pharmacognosy) year 2
Department Pharmacognosy Unit:2
Lecture: 1 hrs Tutorial/Practical: 1 hrs Total: 2hrs

2- Aims of Course

The course aims to help students to know and understand the basic rules in treatment with plants and biosynthesis of the active constituents inside the plants, Also, the student will be able to know the appropriate methods for growing of plants by using the tissue culture technique for production of the active constituents by high percentages. Maintain the plants from extinction and the use of molecular biology

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

After completing the course, the student should be able to:

a1 Understand fundamentals of basic sciences of Pharmacognosy and the up to date knowledge and the scientific development in the field of specialization.

- Dealing with the fundamental methods of tissue culture.

- Understanding the basic rules in treatment with plants.

a2.Know about the lab safety, disposal of waste, security and safety precautions and avoid damage and hazards at work.

a4 -Know the suitable method for the cultivation of plants using tissue culture technique to obtain high percentages of active substances.

a5 -Use of molecular biology in the production of healthy plant varieties and capable of producing high rates of active substances.

- Manufacturing of bio-active compounds in plants

b- Intellectual Skills:

The student should be able to:

b1.Make a research study and write scientific methodology when dealing with

b2-Analyse and evaluate information in the field of specialization as benchmarks and extrapolation.
-Know the different ways to use plants as dietry supplements and as a catalyst in the treatment.
-Conclude appropriate method for tissue culture.

-Conclusion of the biosynthesis of active compounds similar to those studied in plants.

b3 Command Research and make decisions in the professional fields.

-To choose between alternatives that are available for production of high percentages of active substances.

b5-Self-learning according to the aim of the course.

b6- Deduce logic assignments from tissue culture experiments.

c- Professional and practical Skills:

After completing the course, the student should be

c1- Demonstrate critical thinking, problem solving and decision making abilities in a variety of theoretical and practical situations.

c2- Master the basic, laboratory and modern skills in the field of specialization.
c3-Write and design a good scientific reports and publications

-. Conduct research studies and analyze results.

d- General and Transferable Skills:

The student should have:

d1- Use information technology skills including word processing, powerpoint presentation and spreadsheets, in addition to online net search.
d2- Effective communication and time management skills
d3- Work effectively in team and gained ability to solve problems
d4- Writing reports and effectively present his work
d5.Lifelong learning.
d6-Independent study skills as preparation for continuing professional development.
d7-Time management

4- Course Contents

Topic	No. of hrs	Lecture	Tutorial / Practical
Treatment with plants, and choice of therapeutic alternatives	10	7	3
Principles of tissue culture	10	7	3
Biosynthesis of active constituents in plants	10	7	3
Uses of molecular biology	10	7	3

5- Teaching and Learning Methods

5.1- Lectures
5.1.1- Computer, data show, white board, marker and OHP
5.2. The internet and e-library
5.3- Posters of definite topics
5.4-Library

6- Teaching and learning methods for disables

6.1.Lectures on CD-ROM
6.2. The internet and e-library

7- student Assessment

a- Student Assessment methods

7.1- Written to assess the knowledge and understanding skills of students.
7.2- Presentation to assess the intellectual skills of students and evaluating the communication skills as it is an essential need for dealing with the society.
7.3- Posters to assess the ability to work in groups and using technology in preparing the posters.
7.4-Reports

b- Student Assessment Schedule

No.	Assessment	week
1.	Written exam	14
2.	Reports (presentation)	15

c- Weighting of Assessments

No.	Exam.	Mark	%
1.	Written exam	80	80
2.	Reports (presentation)	20	20

List of references

(Essential books, Text books):

-Medicinal natural products: a biosynthetic approach, Paul M. Dewick, 2nd ed. (2001)

-Gene cloning and DNA analysis an introduction, Terry A. Brown, 5th ed.

- Phytotherapy: A Quick Reference to Herbal Medicine (Paperback) (2003).Francesco Capasso and Timothy S. Gaginella , Giuliano Grandolini, Angelo A.

(Recommended books)

(Periodicals, Web sites……etc):

Phytochemistry	Pharmazie
Planta medica	Fitoterpia
Plant Molecular Biology	Chem.Biochem.

Course Coordinator: Dr. Amany Sayed ahmed

Head of Department: Dr. Azza Sayed ahmed

Program Coordinator: Dr. Amany Sayed ahmed

Course Specification

1-Basic Information

Title: Taxonomy of Medicinal plants Code: MPG 043
Level : M. of Pharm. Sci. (Pharmacognosy) year 2
Department Pharmacognosy
Unit: 2
Lecture: 1 hrs Tutorial/Practical: 1hrs Total: 2hrs

2- Aims of Course

Upon successful completion of this course, the graduates should have information about
1-how to identify all types of medicinal plants.
2- be able to arrange the plants taxonomically.
3-the chemotaxonomy of the plants and the distribution of some main classes for the metabolism of the higher plants.

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

The course represents the following aspects;
a1- the taxonomy of the medicinal plants and the different systems of nomenclature.
a2- the morphology and histological characters of the plants.
a3- genes and its role in plant taxonomy.
a4- the classification and distribution of the active constituents in the plant families.
a5-The role of chemotaxonomy in plant taxonomy.
a6-the classification and identification of the plants depending upon the difference and similarity of the chemical compositions.

b- Intellectual Skills:

after completion of this course, the graduates should be able to:
b1- continue his research program by himself.
b2-improve his teaching skills for the students.

c- Professional and practical Skills:

The graduates should :
c1- Acquiring skills for plant identification

c2- Identify the importance of the plant anatomy in its identification and the environmental relationship between the plant families.
c3- Diagnose the role of chemistry in plant taxonomy.

d- General and Transferable Skills:

The graduate should:

d1-Use of information technology in the field of specialization.
d2-Has good communication orally and in writing.
d3-Work in a team.
d4-have diversification of sources of knowledge with the building rules and self-evaluation indicators.
d5.Lifelong learning.
d6-Be able for independent study skills as preparation for continuing professional development.
d7-Have the ability for time management

4- Course Contents

Topic	No. of hrs	Lecture	Tutorial / Practical
Introduction, history of plant taxonomy	3	3	-
The system of nomenclature	1	1	-
The cellular composition of the different plant tissues	14	1	8
The relationship between the anatomy and taxonomy	2	2	-
The history of chemotaxonomy	2	2	-
The distribution of the chemical constituents in plants	4	4	-
The biochemical taxonomy of the plants	8	4	4
The distribution of the chemical constituents (according to the research of the graduate)	2	2	-
Total	36	24	12

5- Teaching and Learning Methods

5.1- **Lectures**
5.1.1- Computer, data show, white board, marker and OHP
5.2- **Library**
5.3.electonic library.

6- student Assessment

a- Student Assessment methods

6.1- **Written** to assess the knowledge and understanding skills
6.2- **Practical** to assess professional skills

7- List of References

a-Course Notes

Lecture notes

b- Essential Books

1-G.H.M. Lawrence,"taxonomy of vascular plants"The Macmillan Company, New York, 12th ed. (1968).
2-J.Hutchinson, "The genera of flowering plants"Clarendon press, Oxford (1964).
3-J.C.Willis and H.K.A.Shaw, "A Dictionary of the flowering plants and ferns" Cambridge University Press, Cambridge, London, New York, 8th ed. (1973).
4-J.Hutchinson, "The families of flowering plants"Oxford University press 2nd ed. (1959).
5-L.H.Baily'The standard cyclopedia of horticulture" The Macmillan Company, New York, 2nd ed. (1963).

c-Recommended Books

d- Periodicals, Web Sites, …. etc

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Phytochemistry, Fitoterapia and Planta Medica

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