Republic of Iraq
Ministry of Higher Education & Scientific Research Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Dept.

Academic Program Specification Form for The Academic

University: Alnahrain university
College: collage of pharmacy
Number Of Departments In The College: Date of Form Completion:

Dean 's Name
Date : / /

Signature

Dean 's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager
Date : 20/ 7 / 2023
Signatur

Quality Assurance And University Performance Manager Date : / /
Signature

TEMPLATE FOR PHARMACOGNOSY I PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	College of pharmacy
2. University Department/Centre	Al-Nahrain University
3. Program Title	Pharmacognosy I Theory.
4. Title of Final Award	B.Sc pharmacy
5. Modes of Attendance offered	Course (Theory Lectures and practical laboratory
6. Accreditation	
7. Other external influences	Practical laboratory training
8. Date of production/revision of this specification	1/7/2023
9. Aims of the Program	
Provide excellent education and research in pharmacognosy and natural products chemistry.	
Be aware and updated regarding the present and future needs of pharmacy practice.	
Give better information regarding health claims for nutraceuticals, the validation of traditional medicines and the widespread use of phototherapeutics	
To provide appropriate information for a wide range of natural products for researchers and students involved in pharmacognosy research. To make the	

natural products as the model for synthesis of new compounds that can contribute to drug discovery and treatment of diseases.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. identify semi- manufactured medications that are extracted from natural sources.

A2. The vision of the pharmacognosy department to enable undergraduate students to extract, isolate and identify phytochemicals derived from natural sources

- A3. Provide excellent education and research in pharmacognosy and natural products chemistry.
- A4. Give better information regarding health claims for nutraceuticals, the validation of traditional medicines and the widespread use of phytotherapeutics

B. The skills goals are special to the program.

B1. Understand pharmacognosy importance.
B2. Be able to identify phytochemicals, extract medicinal plants.
B3. To be able to isolate and purify active ingredients in order to treat diseases,
B4. Be able to use their knowledge to prescribe medicinal supplements , lmow their classification , mechanism and side effects

Teaching and Learning Methods

- Lectures
- Laboratory practical Experiments
- Phytochemical medicinal garden inspection
- Group reports
- Educational conversations and dialogue

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

C. Affective and value goals

C1.
C2.
C3.
C4.

Teaching and Learning Methods

• Lectures • Laboratory practical Experiments • Phytochemical medicinal garden inspection • Group reports • Educational conversations and dialogue
Assessment methods
• Quizzes • Oral examinations • Mental and in-lecture assessment • Assignments • Seminars • Final examination • Laboratory practical examination

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Teamwork skills
D2. Phytochemical analysis practical skills
D3. Seminar and presentation skills

Teaching and Learning Methods

- Lectures
- Laboratory practical Experiments
- Phytochemical medicinal garden inspection
- Group reports
- Educational conversations and dialogue

Assessment Methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd	10303227	Pharmacognosy I	4	Bachelor Degree Requires (x) credits
3rd	10303333	Pharmacognosy II	3	
3rd	10306342	Pharmacognosy III	3	

13. Personal Development Planning

D1. Teamwork skills to work in groups.
D2. Phytochemical analysis practical skills (extraction and chromatography)
D3. Seminar and presentation skills

14. Admission criteria.

Central Admission Committee in the higher education & Scientific Research Ministry according to students marks

15. Key sources of information about the programme

- The Pharmacy Dean's Committee
- College of pharmacy syllabus

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
2nd year 2nd course	10303227	Pharmacognosy I	C	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
3rd year 1st course		Pharmacognosy II	C	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
3rd year 2nd course		Pharmacognosy III	C	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

TEMPLATE FOR PHARMACOGNOSY I
COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	College of Pharmacy
2. University Department/Centre	Al-Nahrain University
3. Course title/code	Pharmacognosy Theory I.
4. Modes of Attendance offered	Theory Lectures and practical laboratory
5. Semester/Year	First semester / 2nd year
6. Number of hours tuition (total)	4
7. Date of production/revision of this specification	1/7/2023
8. Aims of the Course	
Study the scope of pharmacognosy, medicinal plants and nomenclature	
Study the classification of natural products and phytochemistry	
Study the chromatographic techniques	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals .
A1. To understand importance of pharmacognosy and phytochemistry
A2. To be able to classify different medicinal plants and natural products.
A3. To understand the chemistry of natural products.
A4. To understand the chromatographic techniques and mechanisms.
A5. To be able to choose the appropriate chemical solvents for chromatography.
A6. To understand the factors that affect quality and quantity of natural products

B. The skills goals special to the course.
B1. Chromatography skills and methods
B2. Solvent systems choice and elution
B3. Phytochemical analysis

Teaching and Learning Methods

- Lectures
- Laboratory and Experiments
- Phytochemical medicinal garden inspection and visits

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

C. Affective and value goals
C1. Medicinal plant evaluation
C2. Teamwork skills
C3. Presentation skills
C4. Chromatography practical skills

Teaching and Learning Methods

- Lectures
- Laboratory practical Experiments
- Phytochemical medicinal garden inspection
- Group reports
- Educational conversations and dialogue

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. Teamwork skills
D2. Phytochemical analysis practical skills
D3. Seminar and presentation skills

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2		General Introduction: The Scope of Pharmacognosy, definitions and basic principles.	Lectures Laboratory and Experiments	• Quizzes • Oral examinations • Mental and in-lecture assessment • Assignments • Seminars • Final examination • Laboratory practical examination • HomeWorks
2	1		Drugs from natural sources, crud drugs, official and non-official drugs.	Lectures Laboratory and Experiments	
3	1		Classification of natural products.	Lectures Laboratory and Experiments	
4	1		Plant nomenclature and taxonomy	Lectures Laboratory and Experiments	
5	3		Production of crude drugs: Cultivation, collection, drying and storage.	Lectures Laboratory and Experiments	
6	1		Deterioration of crude natural products.	Lectures Laboratory and Experiments	
7	2		Pharmacological activities of natural products.	Lectures Laboratory and Experiments	
8	3		Chemistry of natural drug products.	Lectures Laboratory and Experiments	
9	4		Quality control: Evaluation of natural	Lectures	

			products; macroscopical evaluation; physical evaluation; chemical evaluation; biological evaluation; spectroscopical evaluation.	Laboratory and Experiments	
10	3		Phytochemical investigation of herbal products: Extraction of the plant material; Separation and isolation of constituents; characterization of the isolated compounds.	Lectures Laboratory and Experiments	
11	7		Separation technique: Introduction; Mechanisms of separation and classification based on the type of technique; paper chromatography; Thin layer chromatography; lon-exchange chromatography; Gel filtration chromatography; Column chromatography; Gas chromatography; HPLC; Electrophoresis; Affinity chromatography.	Lectures Laboratory and Experiments	
12	2		Traditional plant medicines as a source of new drugs	Lectures Laboratory and Experiments	

11. Infrastructure	
1. Books Required reading:	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
2. Main references (sources)	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
A- Recommended books and references (scientific journals, reports…).	British pharmacopeia United states pharmacopeia European pharmacopeia Wagners
B-Electronic references, Internet sites…	Electronic up to date WHO
12. The development of the curriculum plan	
In addition to 100% completing the syllabus , further practical extraction methods and chromatography techniques are shown to and administered to students to prepare them to next courses.	

TEMPLATE FOR PHARMACOGNOSY II
COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	College of Pharmacy
2. University Department/Centre	Al-Nahrain University
3. Course title/code	Pharmacognosy II Theory.
4. Modes of Attendance offered	Theory Lectures and practical laboratory
5. Semester/Year	3rd stage 1st semester
6. Number of hours tuition (total)	3 credits
7. Date of production/revision of this specification	1/7/2023
8. Aims of the Course	
Study the chemistry of natural products, namely glycosides, flavonoids, volatile oils, fixed oils, and tannins.	
Study the phytochemistry and pharmacology of secondary medicinal plant constituents.	
Study the uses of these constituents and the plants containing these constituents.	
Understand nature and role of hormones and vitamins	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals .
A1. To understand chemistry of natural secondary active compounds, like glycosides, flavonoids, volatile oils, fixed oils, and tannins.
A2. To be able to classify different medicinal plants and active ingredients.
A3. To understand the chemistry of natural products.
A4. To identify the medicinal and pharmacological uses of natural active ingredients.
A5. Understand nature and role of hormones and vitamins.
A6. Study the chemistry and pharmacology of toxic non-medicinal plants.

B. The skills goals special to the course.
B1. Chromatography skills and methods of extracting specific active ingredients.
B2. Separation, identification, and isolation of active ingredients
B3. Phytochemical analysis and detection of pharmacologically active ingredients.

Teaching and Learning Methods

- Lectures
- Laboratory and Experiments
- Phytochemical medicinal garden inspection and visits

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

C. Affective and value goals
C1. Medicinal plant evaluation
C2. Teamwork skills
C3. Presentation skills
C4. Chromatography practical skills

Teaching and Learning Methods

- Lectures
- Laboratory practical Experiments
- Phytochemical medicinal garden inspection
- Group reports
- Educational conversations and dialogue

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination

- Laboratory practical examination

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. Teamwork skills
D2. Phytochemical analysis practical skills
D3. Seminar and presentation skills

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2		Introduction, carbohydrates, and Biosynthetic pathways of secondary metabolites	Lectures Laboratory and Experiments	Quizzes Oral examinations Mental and in-lecture assessment Assignments Seminars Final examination Laboratory practical examination
2	2		Glycoside introduction, biosynthesis, chemical properties, Cardiac glycosides, Anthraquinone glycosides	Lectures Laboratory and Experiments	
3	2		Flavonoid glycosides	Lectures Laboratory and Experiments	
4	2		Saponin glycosides	Lectures Laboratory and Experiments	
5	2		Alcoholic, Phenolic, Aldehyde and Lactone glycosides	Lectures Laboratory and Experiments	
6	2		Coumarins lactone glycosides and Isothiocyanate and Cyanogenic glycosides	Lectures Laboratory and Experiments	
7	2		Tannins	Lectures Laboratory and Experiments	

8	2		Fixed oils and volatile oils: chemistry / biosynthesis / hydrocarbons as volatile oils/ alcohol as volatile oils/aldehydes	Lectures Laboratory and Experiments	
9	2		Volatile oils; Ketones/ phenol/oxides/ ester/ phenolic ester	Lectures Laboratory and Experiments	
10	2		Vitamins and hormones	Lectures Laboratory and Experiments	
11	2		Non-medical toxic plants	Lectures Laboratory and Experiments	

11. Infrastructure	
1. Books Required reading:	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
2. Main references (sources)	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
A- Recommended books and references (scientific journals, reports…).	British pharmacopeia United states pharmacopeia European pharmacopeia Wagners
B-Electronic references, Internet sites…	Electronic up to date WHO
12. The development of the curriculum plan	
In addition to 100% completing the syllabus , further practical extraction of several medicinal plants to extract and isolate phytochemicals to further examine and understand their chemistry and medicinal activity.	

TEMPLATE FOR PHARMACOGNOSY III
COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	College of Pharmacy
College of Pharmacy	Al-Nahrain University
Al-Nahrain University	Pharmacognosy III Theory.
Pharmacognosy Theory II.	Theory Lectures and practical laboratory
Theory Lectures and practical laboratory	3rd stage 1st semester
3rd stage 2nd semester	3 credits
3 credits	1/7/2023
1/7/2023	
Study the chemistry of natural products, namely alkaloids	
Study the phytochemistry and natural sources of antibiotics	
Study phytotherapy in pharmacy and medicine	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals .

A1. To understand chemistry of natural secondary active compounds, like alkaloids, antibiotics, and antifungals.

A2. To be able to classify different types of alkaloids and their pharmacological uses and importance.

A3. To understand the chemistry of different types of antibiotics and antimicrobials.

A4. To identify the medicinal and pharmacological uses of phytotherapy in different medical conditions.

B. The skills goals special to the course.

B1. Chromatography skills and methods of extracting specific active ingredients.

B2. Separation, identification, and isolation of active ingredients

B3. Phytochemical analysis and detection of pharmacologically active ingredients.

Teaching and Learning Methods

- Lectures
- Laboratory and Experiments
- Phytochemical medicinal garden inspection and visits

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

C. Affective and value goals

C1. Medicinal plant evaluation

C2. Teamwork skills

C3. Presentation skills

C4. Chromatography practical skills

Teaching and Learning Methods

- Lectures
- Laboratory practical Experiments
- Phytochemical medicinal garden inspection
- Group reports
- Educational conversations and dialogue

Assessment methods

- Quizzes
- Oral examinations
- Mental and in-lecture assessment
- Assignments
- Seminars
- Final examination
- Laboratory practical examination

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. Teamwork skills
D2. Phytochemical analysis practical skills
D3. Seminar and presentation skills

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5		Alkaloids: Introduction; Physical and chemical properties; pyridine,	Lectures Laboratory and Experiments	Quizzes Oral examinations Mental and in-lecture assessment Assignments Seminars Final examination Laboratory practical examination
2	5		piperidine alkaloids; tropane alkaloids.	Lectures Laboratory and Experiments	
3	4		Alkaloids: Quinoline tropane alkaloids; iso-quinoline alkaloids;	Lectures Laboratory and Experiments	
4	6		Antibiotics: Natural sources; biosynthetic pathways, isolation, and purification.	Lectures Laboratory and Experiments	
5	10		phytotherapy: Introduction, principles, medicinal plants in selected	Lectures Laboratory and Experiments	

11. Infrastructure

1. Books Required reading:	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
2. Main references (sources)	• Robbers JE, Speedie MK, • Tyler VE(Eds); • pharmacognosy and pharmaco-biotechnology.
A- Recommended books and references (scientific journals, reports…).	British pharmacopeia United states pharmacopeia European pharmacopeia Wagners
B-Electronic references, Internet sites…	Electronic up to date WHO
12. The development of the curriculum plan	
In addition to 100% completing the syllabus, further practical extraction of several medicinal plants to extract and isolate phytochemicals to further examine and understand their chemistry and medicinal activity. Antibacterial and antifungal agents can be demonstrated to students. Practical medicinal uses of in pharmacy medicinal supplements regarding dosing , mechanisms and side effects.	