COURSE SPECIFICATIONS

aculty of Pharmacy

Bachelor of pharmacy

(Clinical Pharmacy)

Fifth level – Semester 10

2019-2020

CONTENTS:

| 1. | Therapeutics-2 | 3 |
|-----------|---|-----------|
| 2. | Treatment of dermatological and reproductive diseases | 15 |
| 3. | Treatment of Pediatric Diseases | 35 |
| 4. | Treatment of Cardiovascular Diseases | 50 |
| 5. | Gastroenterology | 73 |
| 6. | Treatment of Respiratory System Diseases | 88 |
| 7. | Drug information | 107 |



Course specification of Therapeutics-2

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program (s) on which the course is given: Bachelor of Pharmacy (Clinical

pharmacy).

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Pharmacology and Toxicology

Academic year Level: Fifth Level – 10th semester

Date of specification approval: January 2020

B- Basic information:

Title: Therapeutics-2 Code: PO 007

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 1hr/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1- Overall aim of the course

On completion of the course, the student will be able to explain the basis of therapeutics including etiology, clinical features, diagnosis and treatment of different disease as oncology supportive care, osteoporosis, gout, pituitary disorders, adrenal disorders, obesity, polycystic ovary syndrome, multiple sclerosis and headache disorders.

2- Intended Learning Outcomes (ILOs)

| A- ŀ | (nowledge and Understanding |
|------|--|
| a1 | Describe the etiology, symptoms, diagnosis and treatment of osteoporosis, oncology supportive care, gout, pituitary disorders, adrenal disorders, obesity, polycystic ovary syndrome, multiple sclerosis and headache disorders. |
| a2 | Summarize the possible therapeutic interventions |
| a3 | Describe the possible drug-disease interaction and their mechanisms |
| a4 | Identify drug-drug, drug-food and drug-disease interactions |
| B- F | Professional and Practical skills |
| b1 | Evaluate different therapeutic protocols. |
| b2 | Present different therapeutic cases as a written report. |
| C- I | ntellectual skills |
| c1 | Evaluate prescribed drugs and the different alternatives according to the case |
| c2 | Suggest the most suitable drugs for each studied disease conditions |
| D-G | Seneral and Transferable skills |
| d1 | Communicate effectively with others. |
| d2 | Develop critical thinking and problem solving skills. |

D- Contents:

| Week | Lecture contents (2 hrs/lec.) | Practical session (1hrs/lab) | | | | | |
|------|--------------------------------|----------------------------------|--|--|--|--|--|
| No. | | | | | | | |
| 1 | Osteoporosis | Case studies on osteoporosis | | | | | |
| 2 | Oncology supportive care: CINV | Case studies on CINV | | | | | |
| 3 | Oncology supportive care: Pain | Case studies on pain | | | | | |
| | management | management | | | | | |
| 4 | Oncology supportive care: | Case studies on febrile | | | | | |
| | Febrile neutropenia, | neutropenia and | | | | | |
| | Thrombocytopenia | thrombocytopenia | | | | | |
| 5 | Oncology supportive care: | Case studies on anemia, chemo- | | | | | |
| | Anemia, Chemo-protectants | protectants and oncologic | | | | | |
| | and oncologic emergencies | emergencies | | | | | |
| 6 | Gout | Case studies on gout | | | | | |
| 7 | Pituitary disorders | Case studies on Pituitary | | | | | |
| | Periodical exam | disorders | | | | | |
| 8 | Adrenal disorders | Case studies on adrenal | | | | | |
| | | disorders | | | | | |
| 9 | Obesity | Case studies on Obesity | | | | | |
| 10 | Polycystic ovary syndrome | Case studies on polycystic ovary | | | | | |
| | | syndrome | | | | | |
| 11 | Multiple sclerosis | Case studies on multiple | | | | | |
| | | sclerosis | | | | | |
| 12 | Headache | Case studies on headache | | | | | |
| 13 | Revision | Practical exam | | | | | |
| 14 | Revision | | | | | | |
| 15 | Final exam | | | | | | |

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Think/pair/share
- Case study, Open discussion, self-learning

F- Student Assessment methods:

- 1- Written exams (Periodical and final) to assess: a1 to a4; c1 and c2.
- 2- Practical exam and lab activity to assess: b1 and b2; d1 and d2.
- 3- Oral exam to assess: a1 to a4; c1 and c2.

Assessment schedule

| Assessment (1): Mid-term exam | Week 7 |
|------------------------------------|--------------|
| Assessment (2): Lab Activity | Week 1 to 12 |
| Assessment (3): Practical exam | Week 13 |
| Assessment (4): Final written exam | Week 15 |
| Assessment (5): Oral exam | Week 15 |

Weighting of Assessment

| Assessment method | Marks | Percentage |
|---------------------------------|-------|------------|
| Mid-term exam | 10 | 10% |
| Practical exam and lab activity | 25 | 25% |
| Final written exam | 50 | 50% |
| Oral exam | 15 | 15% |
| TOTAL | 100 | 100% |

G- Facilities required for teaching and learning:

a. For lectures: Black (white) board, data show, air conditioned

classroom

b. For practical: Well-equipped labs

H- List of References:

1. Course Notes: Student book of therapeutics-2 approved by the

Pharmacology and Toxicology department (2019) and practical notes

of therapeutics-2 approved by the Pharmacology and Toxicology

department (2019).

2. Essential Books:

a. American collage of clinical pharmacy updates in therapeutics

pharmacotherapy preparatory review and recertification course

(2017)

3. Recommended **Books:** Pharmacotherapy, pathophysiological

approach (tenth edition); DePero J., (2016).

4. Periodicals and websites: Medscape clinical guidelines updates

Course Coordinator: Prof. Dr. Mona Fouad

Head of Department: Prof. Dr. Mona Fouad

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ / 2019 م: Date

8

| Matrix I | | | | | | | | | | | | |
|-----------------|--|--------------------------------------|----|----|--|----|------------------------|----|---------------------------------|----|----|--|
| | | ILOs of Clinical Pharmacology course | | | | | | | | | | |
| Course Contents | | Knowledge and understanding | | | Professional and practical skills | | Intellectual skills | | Transferable and general skills | | | |
| Lectures | | a1 | a2 | a3 | a4 | b1 | b2 | c1 | c2 | d1 | d2 | |
| 1 | Osteoporosis | х | х | х | х | | | х | Х | | | |
| 2 | Oncology supportive care: CINV | x | x | x | х | | | х | X | | | |
| 3 | Oncology supportive care: Pain management | х | х | x | x | | | х | х | | | |
| 4 | Oncology supportive care: Febrile neutropenia, Thrombocytopenia | х | х | х | х | | | х | х | | | |
| 5 | Oncology supportive care: Anemia, Chemoprotectants and oncologic emergencies | x | x | х | x | | | х | х | | | |

| 6 | Gout | х | х | х | х | | | x | X | | |
|----|--|---|---|------|----------|--------|---|---|---|---|---|
| 7 | Pituitary disorders Periodical exam | x | х | х | x | | | x | x | | |
| 8 | Adrenal disorders | х | х | х | х | | | х | Х | | |
| 9 | Obesity | х | х | х | х | | | х | х | | |
| 10 | Polycystic ovary syndrome | х | x | х | х | | | х | х | | |
| 11 | Multiple sclerosis | х | х | х | х | | | х | Х | | |
| 12 | Headache | х | х | х | Х | | | х | Х | | |
| | | | | Prac | tical se | ession | | | | | |
| 1 | Case studies on osteoporosis | | | | | x | x | | | х | Х |
| 2 | Case studies on CINV | | | | | х | х | | | х | Х |
| 3 | Case studies on pain management | | | | | x | х | | | x | Х |
| 4 | Case studies on febrile neutropenia and | | | | | х | х | | | х | X |

| | thrombocytopenia | | | | | | |
|----|---|--|---|---|--|---|---|
| 5 | Case studies on anemia, chemo-protectants and oncologic emergencies | | X | х | | х | Х |
| 6 | Case studies on gout | | х | х | | х | Х |
| 7 | Case studies on Pituitary disorders | | х | X | | х | X |
| 8 | Case studies on adrenal disorders | | х | х | | х | Х |
| 9 | Case studies on Obesity | | х | х | | х | Х |
| 10 | Case studies on polycystic ovary syndrome | | X | х | | х | Х |
| 11 | Case studies on multiple sclerosis | | X | X | | х | X |
| 12 | Case studies on headache | | Х | х | | х | Х |

Matrix II Teaching and Method of assessment learning methods **National Academic Reference** Program Course **Practical Course contents** Sources **ILOs Standards NARS ILOs Practical** Written exam and Oral Lecture session exam lab exam activity Etiology, epidemiology, **Disorders of** osteoporosis, laboratory diagnosis and oncology supportive care, clinical features of different Student 2.12 A21 a1 gout, endocrine book and diseases and their X X system and CNS essential pharmacotherapeutic books approaches. 2.13 Disorders of Pharmacological properties of A22 a2 to drugs including mechanisms of

| | action, therapeutic uses, dosage, contra-indications, ADRs and drug interactions. | | a4 | osteoporosis, oncology supportive care, gout, endocrine system and CNS | Student book and essential books | x | | x | | x |
|------|---|--------|----|---|---|---|---|---|---|---|
| 3.5 | Select medicines based on understanding etiology and pathophysiology of diseases. | B7, B8 | b1 | Case studies on disorders of osteoporosis, oncology supportive care, gout, endocrine system and CNS | Practical note | | x | | х | |
| 3.12 | Employ proper documentation and drug filing systems. | B18 | b2 | Case studies on disorders of osteoporosis, oncology supportive care, gout, endocrine system and CNS | Practical note | | x | | x | |
| 4.9 | Utilize the pharmacological basis of therapeutics in the proper | C11 | c1 | Disorders of osteoporosis, oncology supportive care, gout, endocrine | Student book, Essential books | x | | х | | x |

| | | selection and use of drugs in | | | system and CNS | | | | | |
|-----|----|---|-----|-----------|---|--|---|---|---|---|
| | | various disease conditions. | | | | | | | | |
| 4,1 | 11 | Assess drug interactions, ADRs and Pharmacovigilance | C13 | c2 | Disorders of osteoporosis, oncology supportive care, gout, endocrine system and CNS | Student book, Essential books | x | x | | x |
| 5.1 | L | Communicate clearly by verbal and written means | D1 | d1 | Lab activity | Different sources | | | x | |
| 5.1 | LO | Implement writing and thinking, problem- solving and decision- making abilities | D12 | d2 | Lab activity | Different sources | | | x | |

Course Coordinator: Ass. Prof. Dr. Waleed Barakat

Head of Department: Prof. Dr. Mona Fouad Date:

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ / 2020م

COURSE SPECIFICATIONS

Treatment of dermatological and reproductive diseases

Fifth level –Semester 10

2019-2020

Course Specification of Treatment of dermatological and reproductive diseases

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy (Clinical

pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Dermatology &Venereology

department , Faculty of medicine

Academic year/Level: Fifth year/tenth semester

Date of specification approval September 2019

B- Basic information:

Title: Treatment of dermatological and reproductive diseases

Code: PP010

Credit Hours:

Lectures: 1 hr/weekPractical: 1 hrs/week

• Tutorials: ---

Total: 2 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain the basic medical knowledge of dermatology, venereology and andrology.

2-Intended Learning Outcomes of Treatment of dermatological and reproductive diseases (ILOs):

| A- K | Cnowledge and Understanding |
|-------|--|
| a1 | Outline the normal structure of the human skin and reproductive systems |
| a2 | Describe the primary and secondary skin lesions. |
| a3 | Illustrate the clinical manifestations of allergic skin diseases, papulosquamous disorders and dermatitis. |
| a4 | Mention the dermatologic manifestations of systemic diseases. |
| a5 | Enumerate common skin and male genitourinary system infections (Bacterial, viral, fungal). |
| B- P | rofessional and Practical skills |
| b1 | Use dermatological expressions effectively. |
| b2 | Diagnose common illnesses of the body related to dermatology, venereology and andrology. |
| b3 | Conduct research studies and analyze the results. |
| C- II | ntellectual skills |
| c1 | Interpret experimental results as well as published literature in dermatology. |
| c2 | Recognize basic Dermatological, Venereal and Andrological problems. |
| D- 6 | General and Transferable skills |
| d1 | Retrieve information from different sources related to basic skin &venereal diseases and common andrologic problems. |
| d2 | Implement critical thinking and decision making skills. |

D- Contents:

| Week | Lecture | Practical session |
|------|---|--|
| No. | (1 hr/ week) | (2 hrs/week) |
| 1 | - Structure and functions of skin | - International standards and ethics. |
| 2 | - Dermatological lesions-(Primary & Secondary) | - Case study for dermatological lesions |
| 3 | - Bacterial skin diseases (Impetigo, Erysipelas, Cellulitis, Leprosy) | - Case study for bacterial skin diseases |
| 4 | - Fungal skin diseases: Diseases due to dermatophytes, Diseases due to yeasts (P.versicolor & candidiasis). | - Case study for fungal skin diseases |
| 5 | - Viral skin diseases (Herpes simplex, Varicella zoster infection, Warts "Verrucae" of skin) | • |
| 6 | - Parasitic skin infestations: scabies | - Case study for parasitic skin infestations |
| 7 | Eczema (Dermatitis): Definition of eczema Classification:exogenous&endogene ous types Atopic dermatitis - Periodical exam | - Case study for eczema |

| | - Urticaria | - Case study for Urticaria |
|----|--|--------------------------------|
| 8 | | - Activity (report) |
| 9 | - Angioedema | - Case study for angioedema |
| 10 | - Acne vulgaris | - Case study for acne vulgaris |
| 11 | - Papuloaquamous skin diseases (Psoriasis, Lichen planus, Pityriasis rosea) | , |
| 12 | - Skin manifestations of systemic diseases (Diabetes mellitus, Liver diseases, SLE) | • |
| 13 | - Sexually transmitted diseases (Gonorrhea and urethritis, Chancroid, Lymphogranuloma venereum, granuloma inguinale, AIDS) | , |
| 14 | - Basic andrology (Impotence, Normal semen, Definitions related to semen analysis report) | - Practical exam |
| 15 | - final written exam | |

E- Teaching and Learning Methods:

- Lectures
- Practical sessions (clinical Rounds Lab)
- Case study
- Self learning (activity, group discussion...)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, a5, c2

2- Practical exam to assess b1, b2, c2, d2

3- Activities to assess b3, d1, c1

4- Oral exam to assess a1, a2, a3, a4, a5, c2

5- Periodical exam to assess a1, a2, a3, a4, c2

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|---------------------------------|---------|
| Assessment (2): Practical exam | Week 14 |
| Assessment (3): Activity | Week 8 |
| Assessment (4): Oral exam | Week 15 |
| Assessment (5): Periodical exam | Week 7 |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|-------------------------------|-------|------------|
| Written exam | 50 | 50% |
| Practical exam and activities | 25 | 25% |
| Oral exam | 15 | 15% |
| Periodical exam | 10 | 10% |
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

• Black (white) board, overhead projectors, Data show.

H- List of References:

1- Course Notes: Student book of Treatment of dermatological and

reproductive diseases approved by Dermatology &Venereology

department 2019.

- Practical notes of Treatment of dermatological and reproductive

diseases approved by Dermatology & Venereology department 2018.

2- Essential books:

i- Skin Disease: Diagnosis and Treatment, (Habif) (third edition) by Thomas P.

Habif T.P., James L. Campbell Jr. J.L., Chapman M.S. and Dinulos J.G.H.;

Elsevier Saunders (2011)

3- Recommended books:

i- Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology (Sixth Edition) by Wolff K.

and Johnson R. (2009).

4- Periodicals and websites:

www.Pubmed.Com

www.sciencedirect.com.

Course Coordinators: Prof. Dr. Amany Abdel Rahman

21

Matrix I of Treatment of dermatological and reproductive diseases course

| | | | | I | LOs | of Tr | eatn | nent | of d | ermato | logic | cal and reprodu | ictive diseases |
|---|---|----|----|------------------|-----|-------|-----------|-------------------------------|------|--------------------|-------|-----------------|---------------------------|
| | Course Contents | | | wledge erstan | | | | ofession I pract skills | ical | Intellec skills | | Genera | l and transferable skills |
| | Lectures | a1 | a2 | a3 | a4 | а5 | b1 | b2 | b3 | c1 | c2 | d1 | d2 |
| 1 | - Structure and functions of skin | | | | | | | | | | | | |
| 2 | - Dermatological lesions-(Primary & Secondary) | | X | | | | | | | | | | |
| 3 | - Bacterial skin diseases (Impetigo, Erysipelas, Cellulitis, Leprosy) | | | | | x | | | | | | | |
| 4 | - Fungal skin diseases: Diseases due to dermatophytes, | | | | | x | | | | | | | |

| | Diseases due to yeasts (P.versicolor & candidiasis). | | | | | | | |
|----|--|---|---|---|--|--|--|--|
| 5 | - Viral skin diseases (Herpes simplex, Varicella zoster infection, Warts "Verrucae" of skin) | | | X | | | | |
| 6 | - Parasitic skin infestations: scabies | | | X | | | | |
| 7 | - Eczema (Dermatitis): Definition of eczema Classification:exogenous&endogeneous types Atopic dermatitis | x | | | | | | |
| 8 | - Urticaria | X | | | | | | |
| 9 | - Angioedema | X | | | | | | |
| 10 | - Acne vulgaris | X | | | | | | |
| 11 | - Papuloaquamous skin diseases (Psoriasis, Lichen planus, Pityriasis rosea) | x | | | | | | |
| 12 | - Skin manifestations of systemic diseases (Diabetes mellitus, Liver diseases, SLE) | | X | | | | | |
| 13 | - Sexually transmitted diseases (Gonorrhea and urethritis, Chancroid, Lymphogranuloma venereum, granuloma inguinale, AIDS) | | | x | | | | |

| 14 | - Basic andrology (Impotence, Normal semen, Definitions related to semen analysis report) | x | | | | | | | | |
|----|---|---|--|--|---|---|--|---|---|--|
| 15 | - Revision& Open discussion | | | | | | | | | |
| | Practical sessions | | | | | | | | | |
| 1 | - International standards and ethics. | | | | X | | | | | |
| 2 | - Case study for dermatological lesions | | | | | X | | X | x | |
| 3 | - Case study for bacterial skin diseases | | | | | X | | X | x | |
| 4 | - Case study for fungal skin diseases | | | | | X | | X | X | |
| 5 | - Case study for viral skin diseases | | | | | X | | X | X | |
| 6 | - Case study for parasitic skin infestations | | | | | X | | X | x | |
| 7 | - Case study for eczema | | | | | x | | x | х | |
| 8 | - Case study for Urticaria | | | | | X | | X | Х | |
| 9 | - Case study for angioedema | | | | | X | | X | x | |
| 10 | - Case study for acne vulgaris | | | | | X | | X | x | |
| 11 | - Case study for papuloaquamous skin diseases | | | | | X | | X | x | |
| 12 | - Case study for skin manifestations of systemic | | | | | X | | X | x | |

| | diseases | | | | | | | | | |
|----|--|--|--|--|---|---|---|---|---|---|
| 13 | - Case study for Sexually transmitted diseases | | | | X | | | X | | X |
| 14 | - Activity (report) | | | | | X | Х | | х | |

Matrix II of Treatment of dermatological and reproductive diseases course

| A | National Academic Reference | Program | Course | Course contents | Sources | Teach | ning and le methods | | Method of assessment | | | t |
|---|--|---------|--|--|---------------------------------|---------|------------------------|------------------|----------------------|-------------------|--------------------|--------------|
| S | tandards (NARS) | ILOs | ILOs | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Periodical exam | Oral exam |
| | Principles of body function in health and disease states as well as basis of | A16 | a1 | Structure and functions of skin Basic andrology (Impotence, Normal semen, Definitions related to semen analysis report) | Student book Essential books | x | | | x | | x | x |
| well as basis of genomic and different biochemical pathways regarding their | | a2 | - Dermatological lesions- (Primary & Secondary) | Student book Essential books | x | | | х | | х | x | |
| | correlation with different diseases. | A18 | a3 | - Eczema (Dermatitis): Definition of eczema Classification: exogenous&endogeneous | Student book Essential books | x | | | x | | | x |

| | | | | types Atopic dermatitis - Urticaria | | | | | | |
|------|---|-----|----|--|---------------------------------|---|--|---|---|---|
| | | | | - Angioedema - Acne vulgaris | Student book Essential books | х | | х | | х |
| | | | | - Papuloaquamous skin diseases (Psoriasis, Lichen planus, Pityriasis rosea) | Student book Essential books | X | | x | | х |
| | | | a4 | - Skin manifestations of systemic diseases (Diabetes mellitus, Liver diseases, SLE) | Student book Essential books | x | | × | X | x |
| 2.12 | Etiology, epidemiology, laboratory diagnosis and | A19 | a5 | - Bacterial skin diseases (Impetigo, Erysipelas, Cellulitis, Leprosy) | Student book Essential books | х | | × | х | x |

| | clinical features of different diseases and their pharmaco- therapeutic approaches | | | - Fungal skin diseases: Diseases due to dermatophytes, Diseases due to yeasts (P.versicolor & candidiasis). | Student book Essential books Recommended books Internet | x | | x | x | | x | x |
|-----|---|----|----|---|---|---|---|---|---|---|---|---|
| | | | | - Viral skin diseases (Herpes simplex, Varicella zoster infection, Warts "Verrucae" of skin) | Student book Essential books Recommended books Internet | x | | x | x | | × | x |
| | | | | - Parasitic skin infestations: scabies | Student book Essential books | х | | | x | | × | x |
| 3.1 | Use the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice. | B1 | b1 | - International standards and ethics. | Practical notes | | x | | | x | | |

| | | | | - Case study for dermatological lesions | | х | | х | |
|-----|---|----|----|---|-----------------|---|--|---|--|
| | | | | - Case study for bacterial skin diseases | | X | | X | |
| | | | | - Case study for fungal skin diseases | | X | | X | |
| | | | | - Case study for viral skin diseases | | X | | Х | |
| | Select medicines based on understanding | В7 | | - Case study for parasitic skin infestations | | x | | X | |
| 3.5 | etiology and path physiology of diseases. | В8 | b2 | - Case study for eczema | Practical notes | х | | x | |
| | | | | - Case study for Urticaria | | X | | X | |
| | | | | - Case study for angioedema | | X | | X | |
| | | | | - Case study for acne vulgaris | | X | | X | |
| | | | | - Case study for papuloaquamous skin diseases | | × | | x | |

| | | | | - Case study for skin manifestations of systemic diseases - Case study for Sexually transmitted diseases | | x | | x | |
|------|---|-----|----|---|----------------------------------|---|---|---|--|
| 3.11 | Conduct research studies and analyze the results. | B17 | В3 | - Activity (report) | Recommended books Internet | × | x | x | |

| 4.13 | Analyze and interpret experimental results as well as published literature. | C15 | c1 | - Activity (report) | Recommended books Internet | X | × | X | |
|------|---|-----|----|---|----------------------------------|---|---|---|--|
| 4.14 | Analyze and evaluate evidence-based | C16 | c2 | - Case study for dermatological lesions | Practical notes Recommended | X | | X | |

| information | - Case study for | books | X | | X | |
|-------------|--------------------------------------|-----------------|---|--|---|--|
| needed in | bacterial skin diseases | Internet | | | | |
| pharmacy | | internet | | | | |
| practice. | - Case study for fungal | | X | | X | |
| | skin diseases | | | | | |
| | | | | | | |
| | - Case study for viral skin diseases | | X | | X | |
| | skiii diseases | | | | | |
| | - Case study for | | | | | |
| | parasitic skin infestations | | X | | X | |
| | | | | | | |
| | - Case study for eczema | | | | X | |
| | | | | | | |
| | | | X | | | |
| | - Case study for | | X | | X | |
| | Urticaria | | | | | |
| | | | | | | |
| | - Case study for angioedema | | X | | X | |
| | angioeuema | | | | | |
| | | | | | | |
| | - Case study for acne vulgaris | Student book | X | | X | |
| | vuigaiis | Essential books | | | | |
| | | Recommended | | | | |

| | | | | - Case study for papuloaquamous skin diseases - Case study for skin manifestations of systemic diseases - Case study for Sexually transmitted diseases | books Internet | x | | x | |
|------|--|-----|----|--|----------------------------------|---|---|---|--|
| 5.2 | Retrieve and evaluate information from different sources to improve professional Competencies. | D2 | d1 | - Activity (report) | Recommended books Internet | x | x | x | |
| 5.10 | Implement writing and | D12 | d2 | - Case study for dermatological lesions | Practical notes | х | | х | |
| | thinking, problem- solving and decision- | | | - Case study for bacterial skin diseases | Practical notes | x | | x | |

| making abilities. | - Case study for fungal skin diseases | Practical notes | x | x | |
|-------------------|---|-----------------|---|---|--|
| | - Case study for viral skin diseases | Practical notes | x | x | |
| | - Case study for parasitic skin infestations | Practical notes | x | x | |
| | - Case study for eczema - Case study for Urticaria | Practical notes | x | x | |
| | - Case study for angioedema | Practical notes | x | x | |
| | - Case study for acne vulgaris | Practical notes | x | х | |
| | - Case study for papuloaquamous skin diseases | Practical notes | x | х | |
| | - Case study for skin manifestations of systemic diseases | Practical notes | x | х | |
| | - Case study for Sexually transmitted diseases | Practical notes | X | х | |

Course Coordinators: Prof. Dr. Amany Abdel Rahman

COURSE SPECIFICATIONS

Treatment of Pediatric

Diseases

Fifth level –Semester 10

2019-2020

Course Specification of Treatment of Pediatric Diseases

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University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy (Clinical

pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Pediatric department, Faculty of

Medicine

Academic year/Level: Fifth year/Tenth semester

Date of specification approval September 2019

B- Basic information:

Title: Treatment of Pediatric Diseases Code: PP 011

Credit Hours:

Lectures : 2 hrs/weekPractical: 1 hrs/week

• Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain the principles of treatment of pediatric and neonatal disorders as well as neonatal resuscitation in delivery room.

2-Intended Learning Outcomes of Treatment of Pediatric Diseases (ILOs):

| A- K | Inowledge and Understanding |
|-------|--|
| a1 | Illustrate the measurements of growth and development in children. |
| a2 | Outline nutritional disorders in children. |
| a3 | Describe the clinical picture and management of neonatal disorders. |
| a4 | Identify management of gastroenteritis and dehydration. |
| B- P | rofessional and Practical skills |
| b1 | Specify therapeutic management of nutritional disorders, rickets, neonatal sepsis, neonatal convulsions and diabetic ketoacidosis. |
| b2 | Assess normal abnormal and abnormal growth of children. |
| b3 | Determine degree of dehydration and its management. |
| b4 | Examine neonate in delivery room and manage neonatal asphyxia. |
| C- II | ntellectual skills |
| c1 | Choose appropriate drugs in neonatal resuscitation. |
| c2 | Suggest accurate amount of fluid needed for dehydrated neonates and children. |
| D- 0 | General and Transferable skills |
| d1 | Develop communications skills with public, patients and other health care professionals. |
| d2 | Work effectively as a member of a team. |
| d3 | Practice independent learning needed for continuous professional development. |
| d4 | Write and present reports. |
| d5 | Implement critical thinking and decision making skills. |

D- Contents:

| Week | Lecture | Practical session |
|------|------------------------------------|--|
| No. | (2 hrs/ week) | (2 hrs/week) |
| 1 | - Growth and development | - Assessment of growth |
| 2 | - Nutritional disorders | - Nutritional classification |
| 3 | - Marasmus and kwashiokor | - Treatment of disorders |
| 4 | - Rickets | - Assessment and treatment of rickets |
| 5 | - Gastroenteritis | - Dehydration |
| 6 | - Neonatal resuscitation 1 (APGAR) | - Practical exam-1 |
| 7 | - Periodical exam | IV management of dehydrationActivity (report) |
| 8 | - Neonatal resuscitation (2) | - Drugs of resuscitation |
| 9 | - Neonatal sepsis | - IV fluids in neonates |
| 10 | - Neonatal convulsions | - TPN in neonates |
| 11 | - Neonatal respiratory distress | - Drugs used in treatment of neonatal disorders |
| 12 | - Diabetes mellitus | - Diabetic ketoacidosis |
| 13 | - Nephrotic syndrome | - Revision |
| 14 | - Nephritic syndrome | - Practical exam-2 |
| 15 | Final written exam | |

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (activity, reports, internet search, group discussion...)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, c1, c2, d5

2- Practical exam to assess b1, b2, b3, b4, d1, d2, d5

3- Activities to assess d3, d4

4- Oral exam to assess a1, a2, a3, a4, c1, c2, d1, d5

5- Periodical exam to assess a1, a2, a3, c1, c2, d5

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|---------------------------------|-----------|
| Assessment (2): Practical exams | Week 6,14 |
| Assessment (3): Activity | Week 7 |
| Assessment (4): Oral exam | Week 15 |
| Assessment (5): Periodical exam | Week 7 |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|-------------------------------|-------|------------|
| Written exam | 50 | 50% |
| Practical exam and activities | 25 | 25% |
| Oral exam | 15 | 15% |

| Periodical exam | 10 | 10% |
|-----------------|-----|------|
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

• Black (white) board, overhead projectors, Data show.

H- List of References:

- **1- Course Notes:** Student book of Treatment of Pediatric Diseases approved by Pediatric department 2019.
- Practical notes of Treatment of Pediatric Diseases approved by Pediatric department 2019.

2- Essential books:

i- Treatment of Pediatric Neurologic Disorders (Neurological Disease and Therapy) by Harvey S. Singer, Eric H. Kossoff, Adam L. Hartman, Thomas O. Crawford (2005).

3- Recommended books:

i- Walker's Pediatric Gastrointestinal Disease: Physiology, Diagnosis, Management by Ronald E. Kleinman (2008).

4- Periodicals and websites:

www.Pubmed.Com

www.sciencedirect.com.

Course Coordinators: Prof. Dr. Rabab Albehedi

Pediatric department - Faculty of Medicine

| | Matrix I of Treatment of Pediatric Diseases course | | | | | | | | | | | | | | | |
|----|--|-----------------------------|--|----|----|-----------------------------------|-----------|----|------------------------|-----------|---------------------------------|-----------|----|----|---------------------|----|
| | | | ILOs of Treatment of Pediatric Diseases course | | | | | | | | | | | | | |
| | Course Contents | Knowledge and understanding | | | | Professional and practical skills | | | Intellectual skills | | General and transferable skills | | | | transferable skills | |
| | Lectures | a1 | a2 | a3 | a4 | b1 | b2 | b3 | b4 | c1 | c2 | d1 | d2 | d3 | d4 | d5 |
| 1 | - Growth and development | Х | | | | | | | | | | | | | | |
| 2 | - Nutritional disorders | | х | | | | | | | | | | | | | x |
| 3 | - Marasmus and kwashiokor | | x | | | | | | | | | | | | | |
| 4 | - Rickets | | x | | | | | | | | | | | | | |
| 5 | - Gastroenteritis | | | | X | | | | | | | | | | | |
| 6 | - Neonatal resuscitation 1 (APGAR) | | | X | | | | | | X | X | | | | | x |
| 7 | - Neonatal sepsis | | | X | | | | | | | | | | | | |
| 8 | - Neonatal convulsions | | | X | | | | | | | | | | | | |
| 9 | - Neonatal respiratory distress | | | X | | | | | | | | | | | | |
| 10 | - Diabetes mellitus | | | X | | | | | | | | | | | | |

| 11 | - Nephrotic syndrome | | x | | | | | X | | | | | |
|----|---|--|---|---|---|---|---|---|---|---|---|---|---|
| 12 | - Nephritic syndrome | | X | | | | | X | | | | | |
| | Practical sessions | | | | | | | | | | | | |
| 1 | - Assessment of growth | | | | X | | | | X | | | | x |
| 2 | - Nutritional classification | | | | X | | | | | | | | х |
| 3 | - Treatment of disorders | | | X | | | | | X | | | | x |
| 4 | - Assessment and treatment of rickets | | | X | | | | | X | | | | х |
| 5 | - Dehydration | | | | | X | | | | | | | |
| 6 | - IV management of dehydration | | | | | X | | | | X | | | |
| 7 | - Drugs of resuscitation | | | | | | X | | | | | | |
| 8 | - IV fluids in neonates | | | | | | x | | | | | | |
| 9 | - TPN in neonates | | | | | | X | | | | | | |
| 10 | - Drugs used in treatment of neonatal disorders | | | x | | | | | | | | | |
| 11 | - Diabetic ketoacidosis | | | X | | | | | | | | | |
| 12 | - Activity (report) | | | | | | | | | | X | X | |

Matrix II of Treatment of Pediatric Diseases course

| | National Academic Reference | Program | Course ILOs | Course | Sources | Teach | ing and le | | Method of assessment | | | |
|------|---|--|----------------|------------------------------|---------------------------------|---------|-------------------|------------------|----------------------|----------------|--------------------|--------------|
| | Standards (NARS) | ILOs | | contents | | Lecture | Practical session | Self learning | Written exam | Practical exam | Periodical exam | Oral exam |
| | Principles of body function in health and | A16 | a1 | - Growth and development | Student book Essential books | x | | | х | | x | × |
| 2.11 | disease states as well as basis of genomic and different | rell as basis of enomic and ifferent iochemical athways A18 egarding their | A18 a2 | - Nutritional disorders | Student book Essential books | x | | | х | | х | x |
| | biochemical pathways | | | - Marasmus and kwashiokor | Student book Essential books | x | | | х | | х | х |
| | | | | - Rickets | Student book Essential books | x | | | х | | х | х |

| | | | | - Neonatal resuscitation 1 (APGAR) | Student book Essential books | x | | x | x | x |
|------|--|-----|----|------------------------------------|---|---|---|---|---|---|
| | Etiology, epidemiology, | | | - Neonatal sepsis | Student book Essential books Recommended books Internet | x | × | x | x | х |
| 2.12 | laboratory diagnosis and clinical features of different diseases and their pharmaco- therapeutic | A19 | a3 | - Neonatal convulsions | Student book Essential books Recommended books Internet | x | × | x | x | х |
| | approaches | | | - Neonatal respiratory distress | Student book Essential books Recommended books Internet | х | x | x | х | х |
| | | | | - Diabetes mellitus | Student book Essential books | х | | X | x | x |

| | | | | - Nephrotic syndrome | Student book Essential books | х | | | x | | х | х |
|-----|--|-----|----|--|---|---|---|---|---|---|---|---|
| | | | | - Nephritic syndrome | Student book Essential books Recommended books Internet | x | | x | x | | х | х |
| | | A21 | a4 | - Gastroenteritis | Student book Essential books | х | | | x | | X | x |
| | Select medicines | | | - Treatment of disorders | | | х | | | x | | |
| 3.5 | based on understanding of etiology and | В7 | b1 | - Drugs used in treatment of neonatal disorders | Practical notes | | х | | | х | | |
| | pathophysiology of diseases | | | - Diabetic ketoacidosis - Assessment and treatment of rickets | | | x | | | x | | |

| 3.6 | Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases | B11 | b2 | Assessment of growth Nutritional classification | Practical notes | x | | X | |
|------|--|-----|----|--|-----------------|---|--|--------|--|
| | Advise patients and other health care professionals about safe and proper use of medicines. | | b3 | - Dehydration - IV management of dehydration Case study for CVD | | × | | x x | |
| 3.10 | | B16 | b4 | - Drugs of resuscitation - IV fluids in neonates | Practical notes | x | | x | |
| | | | | - TPN in neonates - Drugs of resuscitation | | x | | x | |

| 4.1 | Apply pharmaceutical knowledge in the formulation of safe and effective medicines as well as in dealing with new drug delivery systems. | C1 | c1 | - Neonatal resuscitation 1 (APGAR) | Student book Essential books | x | | | x | | x | x |
|------|---|-----|----|--|---|--------|--------|--------|--------|--------|--------|-----|
| 4.14 | Analyze and evaluate evidence-based information needed in pharmacy practice. | C16 | c2 | - Neonatal resuscitation 1 (APGAR) - Nephrotic syndrome - Nephritic syndrome | Student book Essential books Recommended books Internet | x x | | x x | x x | | x x | x x |
| 5.1 | Communicate clearly by verbal and written means | D1 | d1 | - Assessment of growth - Treatment of disorders - Assessment and | Practical notes | | x x | | | x x | | |

| | | | | treatment of rickets | | | | | | | | |
|------|--|-----|----|------------------------------------|----------------------------------|---|---|---|---|---|---|---|
| 5.3 | Work effectively in a team | D4 | d2 | - IV management of dehydration | Practical notes | | х | | | х | | |
| | Practice independent | | | | Student book Essential books | х | | x | | | | × |
| 5.5 | learning needed for continuous | D7 | d3 | - Activity (report) | Recommended books | X | | X | | | | x |
| | professional development | | | | Internet | Х | | x | | | | x |
| 5.9 | Implement writing and presentation skills | D11 | d4 | Activity (report) | Recommended books Internet | | x | x | | × | | |
| | | | | - Nutritional disorders | Student book Essential books | х | | | х | | x | × |
| 5.10 | Implement writing and thinking, problem- solving | D12 | d5 | - Neonatal resuscitation 1 (APGAR) | Student book Essential books | x | | | х | | х | x |
| | and decision- making abilities. | | | - Assessment of growth | Practical notes | | x | | | x | | |
| | | | | - Nutritional classification | Practical notes | | X | | | X | | |

| | - Treatment of disorders | Practical notes | х | | X | |
|--|---------------------------------------|-----------------|---|--|---|--|
| | - Assessment and treatment of rickets | Practical notes | x | | Х | |

Course Coordinators: Prof. Dr. Rabab Albehedi (Faculty of Medicine)

COURSE SPECIFICATIONS

Treatment of cardiovascular diseases

Fifth level –Semester 10

2019-2020

Course Specification of Treatment of cardiovascular diseases

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy (Clinical

pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Cardiology department

Faculty of Medicine

Academic year/Level: Fifth year/tenth semester

Date of specification approval: September 2019

B- Basic information:

Title: Treatment of cardiovascular diseases Code: PP 012

Credit Hours:

Lectures : 2 hrs/weekPractical: 1 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to demonstrate responsibility for the patient's drug management in the health care setting.

2-Intended Learning Outcomes of Treatment of cardiovascular diseases (ILOs):

| A- K | (nowledge and Understanding | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|--|
| a1 | Outline cardiovascular disease states, their treatments and outcomes for individual cardiac patients. | | | | | | | | | |
| a2 | Determine evidence-based medication by monitoring progress of disease to maximize the benefits and minimize the risks of treatment. | | | | | | | | | |
| B- P | Professional and Practical skills | | | | | | | | | |
| b1 | Manage, monitor and review medication for cardiac patients. | | | | | | | | | |
| b2 | Describe and evaluate any non-drug management options, where appropriate. | | | | | | | | | |
| C- II | ntellectual skills | | | | | | | | | |
| c1 | Evaluate evidence-based information needed in pharmacy practice. | | | | | | | | | |
| c2 | Apply knowledge and understanding of therapeutics to 'real life' situations, using an evidence-based approach that takes into account recent research and current professional practice. | | | | | | | | | |
| D- 0 | General and Transferable skills | | | | | | | | | |
| d1 | Develop communications skills with public, patients and other health care professionals. | | | | | | | | | |
| d2 | Implement critical thinking and decision making skills. | | | | | | | | | |

D- Contents:

| Week | Lecture | Practical session |
|------|---|---|
| No. | (2 hrs/ week) | (2 hrs/week) |
| 1 | - Introduction to treatment cardiovascular diseases | - Introduction to hospital setting practice. |
| 2 | - Cardiac symptoms | - Tacking history (Cardiac symptoms) |
| 3 | - Rheumatic fever | - Clinical cases of rheumatic fever |
| 4 | - Valvular heart disease | - Clinical cases of Valvular heart disease |
| 5 | - Prosthetic valve | - Clinical cases of Prosthetic valve |
| 6 | - Infective endocarditis | - Clinical cases of Infective endocarditis |
| 7 | - Periodical exam | - Practical exam-1 |
| 8 | - Acute coronary syndrome(part I) | - Clinical cases of Acute coronary syndrome (part I) - Activity |
| 9 | - Acute coronary syndrome(part II) | - Clinical cases of Acute coronary syndrome (part II) |
| 10 | - Heart failure (part I) | - Clinical cases of Heart failure (part I) |
| 11 | - Heart failure (part II) | - Clinical cases of Heart failure (part II) |

| 12 | - Hypertension | - Clinical cases of Hypertension |
|----|-----------------------|---|
| | - Cardiac arrhythmias | - Clinical cases of Cardiac arrhythmias |
| 13 | | - Clinical cases & MCQ revision |
| | | - Hospital setting practice revision |
| 14 | - Revision | - Practical exam-2 |
| 14 | - Open discussion | |
| 15 | Final written exam | |

E- Teaching and Learning Methods:

- Lectures
- Clinical cases.
- Clinical MCQs.
- Hospital setting practice.
- Self learning (activity, group discussion...)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, c1, c2, d2

2- Practical exam to assess b1, b2, d1

3- Activities to assess d2

4- Oral exam to assess a1, a2, c1, c2, d2

5- Periodical exam to assess a1, a2, c1, c2, d2

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|---------------------------------|------------|
| Assessment (2): Practical exams | Week 7, 14 |
| Assessment (3): Activity | Week 8 |
| Assessment (4): Oral exam | Week 15 |
| Assessment (5): Periodical exam | Week 7 |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|-------------------------------|-------|------------|
| Written exam | 50 | 50% |
| Practical exam and activities | 25 | 25% |
| Oral exam | 15 | 15% |
| Periodical exam | 10 | 10% |
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

• Black (white) board, overhead projectors, Data show.

H- List of References:

- **1- Course Notes:** Student book of Treatment of cardiovascular diseases approved by cardiology department 2019.
- Practical notes of Treatment of cardiovascular diseases approved by cardiology department 2019.

2- Essential books:

i- CARDIAC DRUG THERAPY (Seventh Edition) by KHAN:, Humana

Totowa, New Jersey (2007)

ii- Textbook of Cardiovascular Medicine(3rd Edition) by Topol, Eric,

Lippincott Williams & Wilkins (2007).

3- Recommended books:

i- Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine

(8th ed.) by Libby, Philadelphia (2008).

ii- Drugs for the heart , the latest advances in cardiovascular

pharmacology (7th edition) by Lionel opie Philadelphia (2009).

4- Periodicals and websites:

www.escardio.org/

www.ascpt.org/

www.accp.com/

www.abcp.net/

www.accp1.org/

Course Coordinators: Prof. Dr. AbdelSalam Elsayed Hussien

| | Matrix I o | f Treatr | nent of | cardio | vascu | lar dis | eases | course | |
|---|---|-----------------------------|---------|---|-------|------------------------|--------|---------------------------------|--------|
| | | | ILOs | of Tre | atmer | nt of ca | ardiov | ascular diseases | course |
| | Course Contents | Knowledge and understanding | | Professional and practical skills | | Intellectual skills | | General and transferable skills | |
| | Lectures | a1 | a2 | b1 | b2 | c1 | c2 | d1 | d2 |
| 1 | - Introduction to treatment cardiovascular diseases | х | x | | | × | х | | |
| 2 | - Cardiac symptoms | Х | Х | | | Х | X | | |
| 3 | - Rheumatic fever | X | X | | | X | X | | |
| 4 | - Valvular heart disease | Х | X | | | X | X | | |
| 5 | - Prosthetic valve | Х | X | | | X | X | | |
| 6 | - Infective endocarditis | Х | X | | | Х | X | | |
| 7 | - Acute coronary syndrome(part I) | X | X | | | X | X | | |
| 8 | - Acute coronary syndrome(part II) | X | X | | | X | X | | |
| 9 | - Heart failure (part I) | X | X | | | X | X | | |

| 10 | - Heart failure (part II) | x | x | | | x | x | | |
|----|---|---|---|---|---|---|---|---|---|
| 11 | - Hypertension | X | х | | | х | х | | |
| 12 | - Cardiac arrhythmias | X | x | | | X | X | | |
| | Practical sessions | | | | | | | | |
| 1 | - Introduction to hospital setting practice. | | | X | x | | | x | |
| 2 | - Tacking history (Cardiac symptoms) | | | X | x | | | х | |
| 3 | - Clinical cases of rheumatic fever | | | X | x | | | х | x |
| 4 | - Clinical cases of Valvular heart disease | | | X | x | | | х | x |
| 5 | - Clinical cases of Prosthetic valve | | | X | x | | | х | x |
| 6 | - Clinical cases of Infective endocarditis | | | X | x | | | х | x |
| 7 | - Clinical cases of Acute coronary syndrome (part I) | | | X | x | | | х | x |
| 8 | - Clinical cases of Acute coronary syndrome (part II) | | | x | x | | | x | x |
| 9 | - Clinical cases of Heart failure (part I) | | | X | x | | | х | x |
| 10 | - Clinical cases of Heart failure (part II) | | | X | x | | | x | x |
| 11 | - Clinical cases of Hypertension | | | X | x | | | х | x |
| 12 | - Clinical cases of Cardiac arrhythmias | | | X | X | | | X | х |

| 4 | 2 | - Clinical cases & MCQ revision | | | | | | |
|---|----|--------------------------------------|--|---|---|--|---|---|
| 1 | .3 | - Hospital setting practice revision | | X | X | | X | X |
| 1 | 4 | - Activity (Report) | | | | | | × |

Matrix II of Treatment of cardiovascular diseases course

| | National Academic Reference | Program ILOs | Course ILOs | Course contents | Sources | Teach | ing and le | | Method of assessment | | | |
|------|--|-----------------|----------------|--|---------------------------------|---------|-------------------|------------------|----------------------|-------------------|--------------------|--------------|
| 5 | Standards (NARS) | | | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Periodical exam | Oral exam |
| | Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different | A18 | a1 | - Introduction to treatment cardiovascular diseases | Student book Essential books | x | | | x | | х | × |
| 2.11 | | | | - Cardiac symptoms | Student book Essential books | × | | | × | | x | × |
| | | | | - Rheumatic fever | Student book Essential books | х | | | х | | x | x |
| | diseases. | | | - Valvular heart disease | Student book Essential books | x | | | x | | х | x |

| | - Prosthetic valve | Student book Essential books | x | x | x | x |
|--|------------------------------------|---------------------------------|---|---|---|---|
| | - Infective endocarditis | Student book Essential books | х | x | x | x |
| | - Acute coronary syndrome(part I) | Student book Essential books | x | × | x | x |
| | - Acute coronary syndrome(part II) | Student book Essential books | х | х | х | x |
| | - Heart failure (part I) | Student book Essential books | х | х | х | x |
| | - Heart failure (part II) | Student book Essential books | х | х | x | x |
| | - Hypertension | Student book Essential books | х | х | x | x |
| | - Cardiac arrhythmias | Student book Essential books | Х | x | X | х |

| | | | | - Introduction to treatment cardiovascular diseases | Student book Essential books | x | | x | x | x |
|------|--|-----|----|--|---|---|---|---|---|---|
| | Etiology, epidemiology, laboratory | | | - Cardiac symptoms | Student book Essential books Recommended books Internet | x | × | x | x | х |
| 2.12 | diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches | A19 | a2 | - Rheumatic fever | Student book Essential books Recommended books Internet | x | x | x | × | х |
| | approunts | | | - Valvular heart disease | Student book Essential books Recommended books Internet | x | x | x | × | x |
| | | | | - Prosthetic valve | Student book Essential books | × | | × | X | x |

| | - Infective endocarditis | e Student book Essential books | × | | x | x | x |
|--|--------------------------------------|------------------------------------|---|---|---|---|---|
| | - Acute coronar syndrome(part I) | Essential books Recommended books | × | x | x | x | x |
| | - Acute coronar syndrome(part II) | y Student book Essential books | x | | x | x | x |
| | - Heart failure (part I) | Student book Essential books | x | | x | x | x |
| | - Heart failure (part II) | Student book Essential books | x | | x | x | x |

| | | | | - Hypertension | Student book Essential books | x | | | x | | x | x |
|-----|--|----|----|---|---|---|---|---|---|---|---|---|
| | | | | - Cardiac arrhythmias | Student book Essential books Recommended books Internet | x | | x | x | | x | х |
| | | | | - Introduction to hospital setting practice. | | | х | | | х | | |
| | Select medicines | | | - Tacking history (Cardiac symptoms) | | | x | | | х | | |
| 3.5 | based on understanding of etiology and | В7 | b1 | - Clinical cases of rheumatic fever | Practical notes | | X | | | х | | |
| | pathophysiology of diseases | | | - Clinical cases of Valvular heart disease | | | х | | | х | | |
| | | | | - Clinical cases of Prosthetic valve | | | х | | | х | | |
| | | | | - Clinical cases of Infective endocarditis | | | х | | | Х | | |

| | | | | - Clinical cases of Acute coronary syndrome (part I) | | x | | x | |
|------|--|-----|----|---|-----------------|---|--|---|--|
| | | | | - Clinical cases of Acute coronary syndrome (part II) | | x | | х | |
| | | | | - Clinical cases of Heart failure (part I) | | x | | х | |
| | | | | - Clinical cases of Heart failure (part II) | | х | | х | |
| | | | | - Clinical cases of Hypertension | | x | | X | |
| | | | | - Clinical cases of Cardiac arrhythmias | | х | | X | |
| | Advise patients and other health care | | | - Introduction to hospital setting practice. | | х | | Х | |
| 3.10 | professionals about safe and proper use of | B16 | b2 | - Tacking history (Cardiac symptoms) | Practical notes | х | | х | |
| | medicines. | | | - Clinical cases of rheumatic fever | | х | | X | |

| | | | | - Clinical cases of Valvular heart disease | | | × | | x | | |
|------|-----------------------|-----|----|---|---------------------------------|---|---|---|---|---|---|
| | | | | - Clinical cases of Prosthetic valve | | | х | | X | | |
| | | | | - Clinical cases of Infective endocarditis | | | х | | X | | |
| | | | | - Clinical cases of Acute coronary syndrome (part I) | | | x | | Х | | |
| | | | | - Clinical cases of Acute coronary syndrome (part II) | | | х | | X | | |
| | | | | - Clinical cases of Heart failure (part I) | | | x | | x | | |
| | | | | - Clinical cases of Heart failure (part II) | | | x | | Х | | |
| | | | | - Clinical cases of Hypertension | | | X | | х | | |
| | | | | - Clinical cases of Cardiac arrhythmias | | | x | | X | | |
| 4.13 | Analyze and interpret | C15 | c1 | - Introduction to treatment | Student book Essential books | x | | х | | х | х |

| experimental | | cardiovascular | | | | | | |
|--------------------|--|--------------------|-----------------|---|---|---|---|---|
| results as well as | | diseases | | | | | | |
| published | | | | | | | | |
| literature. | | - Cardiac symptoms | Student book | x | | X | x | x |
| | | | Essential books | | | | | |
| | | - Rheumatic fever | Student book | | | | | |
| | | | Essential books | | | | | |
| | | | Recommended | v | v | v | | |
| | | | books | X | X | X | X | X |
| | | | | | | | | |
| | | | Internet | | | | | |
| | | - Valvular heart | Student book | | | | | |
| | | disease | Essential books | | | | | |
| | | | Recommended | v | v | v | v | v |
| | | | books | X | X | X | X | X |
| | | | | | | | | |
| | | | Internet | | | | | |
| | | - Prosthetic valve | Student book | | | | | |
| | | | Essential books | | | | | |
| | | | Recommended | × | x | x | x | X |
| | | | books | ^ | ^ | ^ | ^ | ^ |
| | | | | | | | | |
| | | | Internet | | | | | |
| | | - Infective | Student book | | | | | |
| | | endocarditis | Essential books | X | X | X | X | × |
| | | | Recommended | | | | | |

| | | books | | | | | |
|--|------------------------------------|---|---|---|---|---|---|
| | | Internet | | | | | |
| | - Acute coronary syndrome(part I) | Student book Essential books Recommended books Internet | х | x | x | x | x |
| | - Acute coronary syndrome(part II) | Student book Essential books Recommended books Internet | x | × | x | х | х |
| | - Heart failure (part I) | Student book Essential books | x | | x | х | X |
| | - Heart failure (part II) | Student book Essential books | x | | x | х | x |
| | - Hypertension | Student book Essential books | x | | х | × | х |
| | - Cardiac arrhythmias | Student book Essential books Recommended books | x | x | x | х | x |

| | | | | | Internet | | | | | |
|------|---|-----|----|---|---|---|---|---|---|-------|
| 4.14 | Analyze and evaluate evidence-based information | C16 | c2 | - Introduction to treatment cardiovascular diseases - Cardiac symptoms - Rheumatic fever - Valvular heart disease | Student book Essential books Recommended books Internet | x | x | x | x | x x x |
| | needed in pharmacy practice. | | | - Prosthetic valve - Infective endocarditis | | x | x | x | x | x |
| | | | | - Acute coronary syndrome(part I) | Student book Essential books Recommended | X | | | | |
| | | | | - Acute coronary syndrome(part II) | books Internet | X | | | | |
| | | | | - Heart failure (part I) | | X | | | | |
| | | | | - Heart failure (part II) | | X | | | | |

| | | | | - Hypertension | | x | | | | | | |
|-----|-------------------------------|----|----|---|-----------------|---|---|---|---|---|---|---|
| | | | | - Cardiac arrhythmias | | X | | X | X | | x | X |
| | | | | - Introduction to hospital setting practice. | | | x | | | x | | |
| | | | | - Tacking history (Cardiac symptoms) | | | х | | | X | | |
| | | | | - Clinical cases of rheumatic fever | | | x | | | х | | |
| 5.1 | Communicate clearly by verbal | D1 | d1 | - Clinical cases of Valvular heart disease | Practical notes | | x | | | X | | |
| 3.1 | and written means | D1 | uı | - Clinical cases of Prosthetic valve | Tractical notes | | х | | | X | | |
| | | | | - Clinical cases of Infective endocarditis | | | х | | | X | | |
| | | | | - Clinical cases of Acute coronary syndrome (part I) | | | x | | | x | | |
| | | | | - Clinical cases of Acute coronary syndrome (part II) | | | x | | | X | | |

| | | | | - Clinical cases of Heart failure (part I) | | x | | Х | |
|------|--|-----|----|--|---------------------------------|---|--|---|--|
| | | | | - Clinical cases of Heart failure (part II) | | X | | х | |
| | | | | - Clinical cases of Hypertension | | X | | х | |
| | | | | - Clinical cases of Cardiac arrhythmias | | x | | х | |
| | | | | - Clinical cases & MCQ revision | | | | | |
| | | | | - Hospital setting practice revision | | x | | X | |
| | | | | - Clinical cases of rheumatic fever | Student book Essential books | х | | X | |
| | Implement writing and | | | - Clinical cases of Valvular heart disease | Practical notes | x | | x | |
| 5.10 | thinking, problem- solving and decision- | D12 | d2 | - Clinical cases of Prosthetic valve | Practical notes | x | | x | |
| | making abilities. | | | - Clinical cases of Infective endocarditis | Practical notes | x | | х | |
| | | | | - Clinical cases of Acute coronary | Practical notes | x | | Х | |

| | syndrome (part I) | | | | | |
|--|---|-----------------|---|---|---|--|
| | - Clinical cases of Acute coronary syndrome (part II) | Practical notes | x | | x | |
| | - Clinical cases of Heart failure (part I) | Practical notes | х | | X | |
| | - Clinical cases of Heart failure (part II) | Practical notes | х | | X | |
| | - Clinical cases of Hypertension | Practical notes | х | | X | |
| | - Clinical cases of Cardiac arrhythmias | Practical notes | х | | X | |
| | - Activity | Internet | х | X | X | |

Course Coordinators: Prof. Dr. AbdelSalam Elsayed Hussien

COURSE SPECIFICATIONS

Gastroenterology

Fifth level –Semester 10

2019-2020

Course Specification of Gastroenterology

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy

(Clinical pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Internal medicine department

Faculty of Medicine

Academic year/Level: Fifth year/Tenth semester

Date of specification approval: September 2019

B- Basic information:

Title: Gastroenterology Code: PP 013

Credit Hours:

Lectures : 2 hrs/weekPractical: 1 hrs/week

Tutorials: ---Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain the physiological processes and major diseases of Gastroenterology.

2-Intended Learning Outcomes of Gastroenterology (ILOs):

| A- K | (nowledge and Understanding |
|-------|---|
| a1 | Outline classification of viral hepatitis. |
| a2 | Illustrate development of ascites. |
| a3 | Describe the clinical picture of peptic ulcer and other GIT diseases. |
| a4 | Summarize the importance of early treatment of hepatitis c virus. |
| a5 | Specify laboratory diagnosis of hepatitis. |
| a6 | Define management of GIT diseases. |
| B- P | Professional and Practical skills |
| b1 | Measure blood pressure. |
| b2 | Determine vital signs of patient's disease. |
| b3 | Identify cases that need ICU. |
| C- II | ntellectual skills |
| c1 | Select the appropriate method for differentiation between types of viral hepatitis. |
| c2 | Analyze and interpret quantitative data in a suitable form. |
| c3 | Assess different methods used for treatment of ascites. |
| c4 | Compare between different causes of diarrhea. |
| D- (| General and Transferable skills |
| d1 | Work effectively as a member of a team. |
| d2 | Manage time to achieve targets within deadlines. |
| d3 | Write and present reports. |
| d4 | Implement critical thinking and decision making skills. |

D- Contents:

| Week | Lecture | Practical session |
|------|-------------------------------|-------------------------|
| No. | (2 hrs/ week) | (2 hrs/week) |
| 1 | - Achalasia | - Personal history |
| 1 | - GERD | |
| 2 | - Peptic ulcer | - Present history |
| | - Hiatus hernia | |
| 3 | - Diarrhea | - Blood pressure |
| 4 | - Constipation | - Pulse |
| 5 | - Haematemesis | - Temperature |
| 6 | - Bleeding per rectum | - Respiratory rate |
| 0 | | - Activity (report) |
| 7 | - Dysentery | - Practical exam-1 |
| - | - Periodical exam | |
| 8 | - Inflammatory bowel diseases | - Inspection of abdomen |
| 9 | - Bilharziasis | - Palpation of abdomen |
| 10 | - Acute hepatitis | - Percussion of abdomen |
| 11 | - Chronic hepatitis C | - Jaundice |
| 12 | - Chronic hepatitis B | - Lower limb edema |
| 13 | - Ascites | - Activity (report) |
| 14 | - Hepatic encephalopathy | - Practical exam-2 |
| 15 | - final written exam | |

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (activity, reports, internet search, group discussion...)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, a4, a5, a6, c1, c3, c4

2- Practical exam to assess b1, b2, b3, c1, d4

3- Activities to assess c2, d1, d2, d3

4- Oral exam to assess a1, a2, a3, a4, a4, a5, a6, c1, c3, c4, d4

5- Periodical exam to assess a3, a6, c4

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|---------------------------------|------------|
| Assessment (2): Practical exam | Week 7, 14 |
| Assessment (3): Activity | Week 6,13 |
| Assessment (4): Oral exam | Week 15 |
| Assessment (5): Periodical exam | Week 7 |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|-------------------------------|-------|------------|
| Written exam | 50 | 50% |
| Practical exam and activities | 25 | 25% |
| Oral exam | 15 | 15% |
| Periodical exam | 10 | 10% |
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

• Black (white) board, overhead projectors, Data show.

H-List of References:

- **1- Course Notes:** Student book of gastroenterology approved by internal medicine department 2019.
- Practical notes of gastroenterology approved by internal medicine department 2019.

2- Essential books:

i- Kummar gastroenterology (2000).

3- Recommended books:

ii- Harrison of internal medicine (2008).

4- Periodicals and websites:

Egyptian J. of gastroenterology.

Arab J. of laboratory medicine

J. of Cardiovascular diseases.

www.Pubmed.Com

www.sciencedirect.com.

Course Coordinators: Prof. Dr. Amany Mohamed (Faculty of

Medicine

| | | | | | Mat | rix I | of Ga | astro | ent | erol | ogy co | urse | 9 | | | | | | |
|---|-----------------------------------|----|-----------------------------|----|-----|-------|-------|-----------|-------------------------------|-----------|-----------|---------|--------------|-----------|----|---------------------------------|----|----|--|
| | | | | | | | | IL | Os o | f Gas | troente | erolo | gy coui | rse | | | | | |
| | Course Contents | 1 | Knowledge and understanding | | | | | | ofession I pract skills | tical | In | itelled | ctual skills | | (| General and transferable skills | | | |
| | Lectures | a1 | a2 | a3 | a4 | a5 | a6 | b1 | b2 | b3 | c1 | c2 | c3 | c4 | d1 | d2 | d3 | d4 | |
| 1 | - Achalasia - GERD | | | | | | x | | | | | | | | | | | | |
| 2 | - Peptic ulcer - Hiatus hernia | | | x | | | x | | | | | | | | | | | | |
| 3 | - Diarrhea | | | X | | | | | | | | | | Х | | | | | |
| 4 | - Constipation | | | х | | | | | | | | | | | | | | | |
| 5 | - Haematemesis | | | | | | х | | | | | | | | | | | | |

| 6 | - Bleeding per rectum | | | | | | x | | | | | | | |
|----|-------------------------------|---|---|---|---|---|---|---|---|---|---|---|--|---|
| 7 | - Dysentery | | | | | | X | | | | | X | | |
| 8 | - Inflammatory bowel diseases | | | X | | | X | | | | | | | |
| 9 | - Bilharziasis | X | | X | | X | | | | | | | | |
| 10 | - Acute hepatitis | X | | | | X | | | | Х | | | | |
| 11 | - Chronic hepatitis C | X | | | X | X | | | | Х | | | | |
| 12 | - Chronic hepatitis B | X | | | | X | | | | Х | | | | |
| 13 | - Ascites | | х | | | | | | | | X | | | |
| 14 | - Hepatic encephalopathy | X | | | | X | | | | Х | | | | |
| 15 | - Revision- Open discussion | | | | | | | | | | | | | х |
| | Practical sessions | | | | | | | | | | | | | |
| 1 | - Personal history | | | | | | | | х | | | | | X |
| 2 | - Present history | | | | | | | | X | | | | | X |
| 3 | - Blood pressure | | | | | | | X | | | | | | |
| 4 | - Pulse | | | | | | | | X | | | | | |

| 5 | - Temperature | | | | X | | | | | | | |
|----|-------------------------|--|--|--|---|---|---|--|---|---|---|--|
| 6 | - Respiratory rate | | | | X | | | | | | | |
| 7 | - Inspection of abdomen | | | | X | | | | | | | |
| 8 | - Palpation of abdomen | | | | X | | | | | | | |
| 9 | - Percussion of abdomen | | | | X | | | | | | | |
| 10 | - Jaundice | | | | X | X | | | | | | |
| 11 | - Lower limb edema | | | | X | X | | | | | | |
| 12 | - Activity (Report) | | | | | | X | | X | X | X | |

Matrix II of Gastroenterology course

| - | National Academic Reference | Program | Course | Course | Sources | Tea | ching and I method | | M | ethod of | assessment | t |
|------|--|---------|--------|---|---------------------------------|---------|-----------------------|---------------|-----------------|-------------------|--------------------|--------------|
| S | Standards (NARS) | ILOs | ILOs | contents | | Lecture | Practical session | Self learning | Written exam | Practical exam | Periodical exam | Oral exam |
| 2.11 | Principles of body function in health and disease states as well as basis of genomic and different biochemical | A16 | a1 | Bilharziasis Acute hepatitis Chronic hepatitis C Chronic hepatitis B Hepatic encephalopathy | Student book Essential books | × | | | × | | | × |
| | pathways regarding their correlation with different diseases. | A18 | a2 | - Ascites | Student book Essential books | × | | | × | | | × |

| | | A19 | a3 | Peptic ulcerHiatus herniaDiarrheaConstipation | Student book Essential books | x | | x | x | x |
|------|--|-----|----|---|---|---|---|---|---|---|
| 2.12 | Etiology, epidemiology, laboratory diagnosis and clinical features | AIS | a4 | - Chronic hepatitis C | Student book Essential books Recommended books Internet | × | × | x | | х |
| 2.12 | of different diseases and their pharmaco- therapeutic approaches | A20 | a5 | - Bilharziasis - Acute hepatitis - Chronic hepatitis C - Chronic hepatitis B - Hepatic encephalopathy | Student book Essential books Recommended books Internet | x | × | × | | x |
| | | A21 | a6 | - Achalasia - GERD - Peptic ulcer | Student book Essential books | x | | х | x | x |

| | | | | - Hiatus hernia - Haematemesis - Bleeding per rectum - Dysentery - Inflammatory bowel diseases | | | | | |
|-----|--|-----|----------|--|-----------------|---|--|---|--|
| 3.6 | Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases | B11 | b1 b2 | - Blood pressure - Personal history - Present history - Pulse - Temperature - Respiratory rate - Inspection of abdomen - Palpation of abdomen - Percussion of abdomen | Practical notes | X | | x | |

| | | | | - Jaundice - Lower limb edema | | | | | | | |
|------|---|-----|-----------|---|---|---|---|---|---|---|---|
| 3.10 | Advise patients and other health care professionals about safe and proper use of medicines. | B16 | b3 | - Jaundice - Lower limb edema | Practical notes | | x | | | x | |
| 4.8 | Select and assess appropriate methods of infection control to prevent infections and promote public health. | C10 | c1 | - Acute hepatitis - Chronic hepatitis C - Chronic hepatitis B - Hepatic encephalopathy | Student book Essential books | x | | | x | | x |
| 4.13 | Analyze and interpret experimental results as well as published literature | C15 | c2 | - Activity (Report) | Student book Essential books Recommended books Internet | | х | x | | x | |

| | Analyze and evaluate evidence-based | | c3 | - Ascites | Student book Essential books | x | | | х | | | х |
|------|---|-----|----|-----------------------------|----------------------------------|---|---|---|---|---|---|---|
| 4.14 | information needed in pharmacy practice. | C16 | c4 | - Diarrhea - Dysentery | Student book Essential books | x | | | x | | x | x |
| 5.3 | Work effectively in a team | D4 | d1 | Activity (report) | Recommended books Internet | | × | × | | x | | |
| 5.8 | Demonstrate creativity and time management abilities. | D10 | d2 | Activity (report) | Recommended books Internet | | x | x | | х | | |
| 5.9 | Implement writing and presentation skills | D11 | d3 | Activity (report) | Recommended books Internet | | x | x | | x | | |
| 5.10 | Implement writing and thinking, | D12 | d4 | - Revision- Open discussion | Student book Essential books | х | | x | | | | X |
| | problem- solving and decision- | | | - Personal history | Practical notes | | x | | | x | | |

| | making abilities. | | - Present history | | | | |
|--|-------------------|--|-------------------|--|--|--|--|
| | | | | | | | |
| | | | | | | | |

Course Coordinators: Prof. Dr. Amany Mohamed (Faculty of

Medicine)

COURSE SPECIFICATIONS

Treatment of Respiratory

System Diseases

Fifth level –Semester 10

2019-2020

Course Specification of Treatment of Respiratory System Diseases

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy (Clinical

pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Chest department , Faculty of

Medicine

Academic year/Level: Fifth year/Tenth semester

Date of specification approval September 2019

B- Basic information:

Title: Treatment of Respiratory System Diseases Code: PP 014

Credit Hours:

Lectures : 2 hrs/weekPractical: 1 hrs/week

Tutorials: ---Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to explain symptoms of occupational, immunological chest diseases and infections as well as efficiency of respiratory treatment.

2-Intended Learning Outcomes of Treatment of Respiratory System Diseases (ILOs):

| A- k | A- Knowledge and Understanding | | | | | | | | | | | | |
|------|---|--|--|--|--|--|--|--|--|--|--|--|--|
| a1 | Describe normal structure and function of human respiratory system. | | | | | | | | | | | | |
| a2 | Discuss altered structure and function of the respiratory system during air way diseases including (bronchial asthma, chronic obstructive pulmonary disease, occupational lung diseases and lung cancer). | | | | | | | | | | | | |
| a3 | Demonstrate etiology, pathogenesis, clinical features, diagnosis and complications of respiratory system diseases. | | | | | | | | | | | | |
| a4 | Identify suitable drugs and complementary medicine for management of chest diseases. | | | | | | | | | | | | |
| B- F | Professional and Practical skills | | | | | | | | | | | | |
| b1 | Choose appropriate treatment of various kinds of chest diseases according to disease etiology and pathophysiology. | | | | | | | | | | | | |
| b2 | Monitor patient's history and status in depth relative to clinical context. | | | | | | | | | | | | |
| b3 | Advise patients about initial management of the emergency situ. | | | | | | | | | | | | |
| b4 | Employ the relevant knowledge to patients for the safe and effective use of oxygen therapy and nebulizer for administration of inhalation therapy. | | | | | | | | | | | | |
| b5 | Analyze the most important respiratory function test and evaluate scientific literature. | | | | | | | | | | | | |
| C- I | ntellectual skills | | | | | | | | | | | | |
| c1 | Interpret the respiratory laboratory results to distinguish between | | | | | | | | | | | | |

| | physiological and pathological conditions. |
|------|--|
| c2 | Correlate pathologic features of respiratory disease with laboratory investigations and complications. |
| c3 | Evaluate the causal relationship of microbes and infectious diseases according to evidence. |
| D- 0 | General and Transferable skills |
| d1 | Interact honestly in integration with teachers, colleagues and patients. |
| d2 | Gather and organize data for various sources including library and electronic resources. |
| d3 | Work effectively as a member of a team. |
| d4 | Practise long life learning needed for continuous professional development. |
| d5 | Respect ethics related to drug prescription especially drugs liable to abuse. |
| d6 | Write and present reports. |
| d7 | Implement critical thinking and decision making skills. |

D- Contents:

| Week | Lecture | Practical session |
|------|---|--|
| No. | (2 hrs/ week) | (2 hrs/week) |
| 1 | - Anatomy and physiology of respiratory system | - Personal history, complaints |
| 2 | - Pleural diseases - Asthma | -Present history (symptoms of chest diseases) - Past& family history |
| 3 | - COPD | - General examination |
| 4 | - Pulmonary tuberculosis | - Diagnostic tools with demonstration of x-ray, PFT traces, ABGs |
| 5 | - Pneumonia (bacterial, viral, fungus, parasitic) | - Therapeutic modalities with demonstration of oxygen administration |
| 6 | - Lung abscess | - Inhalation devices |
| 7 | Bronchiectasis, infected cystic lung, cystic fibrosisPeriodical exam | - Clinical demonstration 1- Activity (report and presentations) |
| 8 | - Interstitial lung diseases | - Clinical demonstration 2 |
| 9 | - Pulmonary embolism | - Clinical demonstration 3 |
| 10 | - Occupational lung diseases | - Clinical demonstration 4 |
| 11 | - Lung cancer- lung in systemic disorders | - Problem solving 2 |
| 12 | - Respiratory failure, life threatening | - Problem solving 3 |

| | conditions | |
|----|------------------------------------|-----------------------|
| 13 | - Drug-induced lung diseases | - Clinical assessment |
| 14 | - Pregnancy& respiratory disorders | - Practical exam |
| 15 | Final written exam | |

E- Teaching and Learning Methods:

- Lectures
- Clinical rounds
- Self learning (activity, reports, internet search, group discussion, role play...)
- Case studies and problem solving
- Electronic learning at Zagazig university electronic library

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, c2, c3

2- Practical exam to assess b1, b2, b3, b4, c1

3- Activities to assess b5, d1, d2, d3, d4, d5, d6, d7

4- Oral exam to assess a1, a2, a3, a4, c2, c3

5- Periodical exam to assess a1, a2, a4, c2, c3

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|---------------------------------|---------|
| Assessment (2): Practical exam | Week 14 |
| Assessment (3): Activity | Week 7 |
| Assessment (4): Oral exam | Week 15 |
| Assessment (5): Periodical exam | Week 7 |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|-------------------------------|-------|------------|
| Written exam | 50 | 50% |
| Practical exam and activities | 25 | 25% |
| Oral exam | 15 | 15% |
| Periodical exam | 10 | 10% |
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

• Black (white) board, overhead projectors, Data show, computer.

H- List of References:

- **1- Course Notes:** Student book of Treatment of Respiratory System Diseases approved by Chest department 2019.
- Practical notes of Treatment of Respiratory System Diseases approved by Chest department 2019.

2- Essential books:

- i- Text book of respiratory diseases by Crofton and Douglas.
- 3- Recommended books:
- 4- Periodicals and websites:

www.ncbi.nlm.nih.gov

Course Coordinators: Prof. Dr. Nagwan Adel

| | Ma | trix | I of | Trea | tme | nt of | Res | pirate | ory S | yster | n Di | seas | ses (| cour | se | | | | | |
|---------------------------|---|---|------|------|-----------------------------------|-----------|-----|--------|---------------------|-----------|---------------------------------|-----------|-------|-----------|----|----|----|----|----|----|
| | | ILOs of Treatment of Respiratory System Diseases course | | | | | | | | | | | | | | | | | | |
| Course Contents Lectures | | Knowledge and understanding | | | Professional and practical skills | | | | Intellectual skills | | General and transferable skills | | | | | | | | | |
| | | a1 | a2 | a3 | a4 | b1 | b2 | b3 | b4 | b5 | c1 | c2 | c3 | d1 | d2 | d3 | d4 | d5 | d6 | d7 |
| 1 | - Anatomy and physiology of respiratory system | х | | | | | | | | | | | | | | | | | | |
| 2 | - Pleural diseases - Asthma | | X | x | x | | | | | | | x | | | | | | | | |
| 3 | - COPD | | X | X | X | | | | | | | X | | | | | | | | |
| 4 | - Pulmonary tuberculosis | | | X | x | | | | | | | х | X | | | | | | | |
| 5 | - Pneumonia (bacterial, viral, fungus, parasitic) | | | x | х | | | | | | | x | x | | | | | | | |
| 6 | - Lung abscess | | | X | x | | | | | | | x | Х | | | | | | | |
| 7 | - Bronchiectasis, infected cystic lung, cystic fibrosis | | | x | х | | | | | | | х | x | | | | | | | |

| 8 | - Interstitial lung diseases | | x | x | | | | X | | | | |
|----|--|---|---|---|---|--|--|---|--|--|--|--|
| 9 | - Pulmonary embolism | | х | X | | | | X | | | | |
| 10 | - Occupational lung diseases | X | X | X | | | | X | | | | |
| 11 | - Lung cancer lung in systemic disorders | x | x | x | | | | х | | | | |
| 12 | - Respiratory failure, life threatening conditions | | х | х | | | | х | | | | |
| 13 | - Drug-induced lung diseases | | X | X | | | | X | | | | |
| 14 | - Pregnancy& respiratory disorders | | x | x | | | | х | | | | |
| Pr | actical sessions | | | | | | | | | | | |
| 1 | - Personal history, complaints | | | | X | | | | | | | |
| 2 | Present history (symptoms of chest diseases) - Past& family history | | | | x | | | | | | | |
| 3 | - General examination | | | | X | | | | | | | |
| 4 | - Diagnostic tools with demonstration of x-ray, PFT traces, ABGs | | | | X | | | | | | | |

| 5 | - Therapeutic modalities with demonstration of oxygen administration | | x | | | | | | | | | | | | | |
|----|--|--|---|---|---|---|---|---|--|---|---|---|---|---|---|---|
| 6 | - Inhalation devices | | X | | | | | | | | | | | | | |
| 7 | - Clinical demonstration 1 | | | | X | х | | X | | | | | | | | |
| 8 | - Clinical demonstration 2 | | | | X | х | | X | | | | | | | | |
| 9 | - Clinical demonstration 3 | | | | X | х | | X | | | | | | | | |
| 10 | - Clinical demonstration 4 | | | | X | х | | X | | | | | | | | |
| 11 | - Problem solving 1 | | | | Х | Х | | X | | | | | | | | |
| 12 | - Problem solving 2 | | | | X | Х | | X | | | | | | | | |
| 13 | - Problem solving 3 | | | | X | х | | X | | | | | | | | |
| 14 | - Clinical assessment | | | X | | | | | | | | | | | | |
| 15 | - Activity (report and presentation) | | | | | | x | | | Х | X | Х | X | X | X | x |

Matrix II of Treatment of Respiratory System Diseases course

| | National Academic Reference | Program | Course | Course contents | Sources | | ing and lea methods | arning | Method of assessment | | | | |
|------|--|---------|--------|--|------------------------------------|---------|------------------------|------------------|----------------------|----------------|--------------------|--------------|--|
| 9 | Standards (NARS) | ILOs | ILOs | | | Lecture | Practical session | Self learning | Written exam | Practical exam | Periodical exam | Oral exam | |
| | Principles of body function in health and disease states as well as basis | | a1 | - Anatomy and physiology of respiratory system | Student book Essential books | x | | | x | | х | × | |
| 2.11 | of genomic and different biochemical pathways regarding their correlation with different diseases. | A16 | a2 | - Pleural diseases - Asthma - COPD | Student book Essential books | x | | | х | | x | x | |
| 2.12 | Etiology, epidemiology, laboratory diagnosis and clinical features | A19 | a3 | - Pleural diseases - Asthma - COPD | Student book Essential books | x | | | × | | x | × | |

| of different | - Pulmonary tuberculosis | | | | | | |
|-----------------|-----------------------------------|--------------|---|---|---|---|---|
| diseases and | | | | | | | |
| their pharmaco- | - Pneumonia (bacterial, viral, | | | | | | |
| therapeutic | fungus, parasitic) | | | | | | |
| approaches | - Lung abscess | | | | | | |
| | - Bronchiectasis, infected cystic | | | | | | |
| | lung, cystic fibrosis | | | | | | |
| | - Interstitial lung diseases | Student book | | | | | |
| | | Essential | | | | | |
| | | books | X | X | X | X | X |
| | | Internet | | | | | |
| | - Pulmonary embolism | Student book | | | | | |
| | | Essential | | | | | |
| | | books | X | X | X | X | X |
| | | Internet | | | | | |
| | - Occupational lung diseases | Student book | | | | | |
| | | Essential | | | | | |
| | | books | X | X | X | X | X |
| | | Internet | | | | | |
| | - Lung cancer | Student book | | | | | |
| | | Essential | X | | X | × | x |
| | | books | | | | | |
| | | | | | | | |

| | | | | - lung in systemic disorders | Student book Essential books | × | | x | x | x |
|--|--|-----|----|--|---------------------------------------|---|---|---|---|---|
| | | | | - Respiratory failure, life threatening conditions | Student book Essential books Internet | x | x | х | х | x |
| | | | | - Drug-induced lung diseases | Student book Essential books Internet | x | х | x | х | x |
| | | | | - Pregnancy& respiratory disorders | Student book Essential books Internet | x | x | х | x | x |
| | | A21 | a4 | - Pleural diseases - Asthma - COPD | Student book Essential books | x | | x | x | x |

| | | | | - Pulmonary tuberculosis | | | | | |
|-----|---------------------|----|----|---|-----------------|---|--|---|--|
| | | | | - Pneumonia (bacterial, viral, fungus, parasitic) | | | | | |
| | | | | - Lung abscess | | | | | |
| | | | | - Bronchiectasis, infected cystic lung, cystic fibrosis | | | | | |
| | | | | - Interstitial lung diseases | | | | | |
| | | | | - Pulmonary embolism | | | | | |
| | | | | - Occupational lung diseases | | | | | |
| | | | | - Lung cancer | | | | | |
| | | | | - lung in systemic disorders | | | | | |
| | | | | - Respiratory failure, life threatening conditions | | | | | |
| | | | | - Drug-induced lung diseases | | | | | |
| | | | | - Pregnancy& respiratory disorders | | | | | |
| 3.5 | Select medicines | B7 | b1 | - Therapeutic modalities with demonstration of oxygen | Practical notes | X | | X | |
| | based on | | | administration | | X | | X | |

| | understanding of etiology and pathophysiology of diseases | | | - Therapeutic modalities with demonstration of oxygen administration | | x | | × | |
|-----|--|-----|----|---|-----------------|---|--|---|--|
| 3.6 | Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases | B11 | b2 | - Personal history, complaints - Present history (symptoms of chest diseases) - Past& family history - General examination - Clinical assessment | Practical notes | x | | х | |
| 3.9 | Maintain public awareness on rational use of drugs and social health hazards of drug abuse and misuse | B15 | b3 | - Clinical demonstration 1 - Clinical demonstration 2 - Clinical demonstration 3 - Clinical demonstration 4 - Problem solving 1 - Problem solving 2 - Problem solving 3 | Practical notes | x | | x | |

| 3.10 | Advise patients and other health care professionals about safe and proper use of medicines. | B16 | b4 | - Clinical demonstration 1 - Clinical demonstration 2 - Clinical demonstration 3 - Clinical demonstration 4 - Problem solving 1 - Problem solving 2 - Problem solving 3 | Practical notes | | x | | | x | | |
|------|---|-----|----|---|--------------------------------|---|---|---|---|---|---|---|
| 3.11 | 3.11 Conduct research studies and analyze the results. | B17 | b5 | - Activity (report and presentation) | Essential books Internet | | x | x | | x | | |
| 4.13 | Analyze and interpret experimental results as well as published literature. | C15 | c1 | - Clinical demonstration 1 - Clinical demonstration 2 - Clinical demonstration 3 - Clinical demonstration 4 - Problem solving 1 - Problem solving 2 - Problem solving 3 | Student book Essential books | x | | | x | | x | x |

| | | - Pleural diseases | | | | |
|--|----|-----------------------------------|--|--|--|---|
| | | | | | | 1 |
| | | - Asthma | | | | 1 |
| | | - COPD | | | | 1 |
| | | 661.5 | | | | 1 |
| | | - Pulmonary tuberculosis | | | | |
| | | - Pneumonia (bacterial, viral, | | | | |
| | | fungus, parasitic) | | | | 1 |
| | | | | | | |
| | | - Lung abscess | | | | |
| | | - Bronchiectasis, infected cystic | | | | |
| | | lung, cystic fibrosis | | | | |
| | c2 | | | | | |
| | | - Interstitial lung diseases | | | | |
| | | - Pulmonary embolism | | | | |
| | | | | | | |
| | | - Occupational lung diseases | | | | |
| | | - Lung cancer | | | | |
| | | zang cancer | | | | |
| | | - lung in systemic disorders | | | | |
| | | - Respiratory failure, life | | | | |
| | | threatening conditions | | | | |
| | | am eaterming contactions | | | | |
| | | - Drug-induced lung diseases | | | | 1 |
| | | Drognonou 9 room: materia | | | | |
| | | - Pregnancy& respiratory | | | | |

| | | | | disorders | | | | | | | | |
|------|--|-----|---|---|------------------------------|---|---|---|---|---|---|---|
| | Analyze and evaluate evidence-based information needed in pharmacy | | | - Pulmonary tuberculosis | Cividant hands | х | | х | Х | | Х | х |
| 4.14 | | C16 | c3 | - Pneumonia (bacterial, viral, fungus, parasitic) | Student book Essential books | х | | X | X | | X | X |
| | | | - Lung abscess - Bronchiectasis, infected cystic | Internet | x | | X | x | | x | x | |
| | practice. | | | lung, cystic fibrosis | | | | | | | | |
| 5.1 | Communicate clearly by verbal D | D1 | d1 | - Activity (report and presentation) | Essential books | | | x | | × | | |
| | and means. | | | | Internet | | x | | | | | |
| | Retrieve and evaluate information | | | - Activity (report and | | | | | | | | |
| 5.2 | from different sources to | D2 | d2 | | Essential books | | | x | | × | | |
| | improve professional | | | presentation) | Internet | | | | | | | |
| | competencies. | | | | | | x | | | | | |
| 5.3 | Work effectively in a team | D4 | d3 | - Activity (report and presentation) | Essential books | | | x | | x | | |
| | | | | | Internet | | x | | | | | |

| 5.5 | Practice independent learning needed for continuous professional development | D7 | d4 | - Activity (report) | Essential books Internet | x x | x x x | x x | |
|------|--|-----|----|--------------------------------------|--------------------------------|-----|-------------|--------|--|
| 5.6 | Adopt ethical, sales and safety guidelines | D8 | d5 | - Activity (report and presentation) | Essential books Internet | x | х | x | |
| 5.9 | Implement writing and presentation skills | D11 | d6 | - Activity (report and presentation) | Essential books Internet | x | x | x | |
| 5.10 | Implement writing and thinking, problem- solving and decision- making abilities. | D12 | d7 | - Activity (report and presentation) | Essential books Internet | x | x | x | |

Course Coordinators: Prof. Dr. Nagwan Adel



Course Specification of Drug information

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of pharmacy (Clinical

pharmacy)

Major or Minor element of programs: Major

Department offering the program: ------

Department offering the course: Pharmacy practice department

Academic year/Level: Fifth level/tenth semester

Date of specification approval December 2019

B- Basic information:

Title: Drug information Code: PP015

Credit Hours:

Lectures : 1 hr/week

• Practical: 0

Tutorials: ---

Total: 1 hr/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to: Recognize the role of clinical pharmacist in drug information centres. Evaluate and use different drug information resources. Describe different types of clinical studies, different parts of controlled clinical trials as well as different pharmacoeconomic studies.

2-Intended Learning Outcomes of Drug Information (ILOs):

3. Intended learning outcomes (ILOs):

| Knowledge | e and Understanding |
|-------------|---|
| a1 | Define different terminologies related to drug information and pharmacoeconomics |
| a2 | Outline different services provided by drug information center, categories of drug information questions and required steps to identify the requestor needs |
| а3 | Describe the characteristics of a controlled clinical trial and other clinical studies |
| a4 | Describe the advantages and disadvantages of the different types of pharmacoeconomic analyses |
| Profession | al and practical skills |
| b1 | Evaluate a controlled clinical trial according to CONSORT format |
| b2 | Use different drug information resources |
| Intellectua | l skills |
| c1 | Identify the appropriate drug information source to answer a drug information request |
| c2 | Identify one potential question that would benefit from using the modified systematic approach |
| c3 | analyze key information presented in each section of a clinical trial |
| c4 | Differentiate between different pharmacoeconomic studies |
| General ar | nd Transferable Skills |

| d1 | Demonstrate critical thinking and decision-making abilities |
|----|---|
| d2 | Develop search skills using various types of E-sources |

D- Contents:

| Week No. | Lecture contents (1 hr/lec.) |
|----------|---|
| 1 | Introduction to drug information |
| 2 | - Systematic approach for answering question |
| | - Modified systematic approach |
| 3 | Response formulation |
| 4 | Drug information resources: |
| | Tertiary literature |
| | Evaluation of Tertiary literature |
| 5 | • secondary literature |
| | Primary literature |
| 6 | Alternative Information Sources |
| 7 | Definition of controlled clinical trial |
| | Format and content of controlled clinical trials |
| | Reasons for not publishing trials |
| 0 | Peer review process Approisal of clinical trials |
| 8 | Appraisal of clinical trial: |
| | • title & Abstract |
| | • Introduction |
| | Methods |
| 9 | Appraisal of clinical trial: |
| | Results |
| | Conclusion & discussion |
| | References |
| | True experiments—beyond the controlled clinical trial |
| 10 | Introduction to pharmacoeconomics |
| | Types of costs: |

| 11 | Pharmacoeconomics models |
|----|--|
| | Cost minimization analysis |
| | Cost benefit analysis |
| | Cost effectiveness analysis |
| | Cost utility analysis |
| 12 | Steps in decision analysis |
| | Pharmacoeconomic websites |
| 13 | Delivery of clinical trial evaluation template & |
| | discussion |
| 14 | Open discussion & Revision |
| 15 | Final written exam |

E- Teaching and Learning Methods:

- Lectures
- Simulation: clinical case study & search in different resources
- Conduct a clinical trial appraisal

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, c1, c2, c3, c4

2- Activities to assess b1,b2, d1, d2

3- Oral exam to assess a1, a2, a3, a4, c1, c2, c3, c4

Assessment schedule:

| Assessment (1): Written exam | Week 15 |
|------------------------------|---------|
| Assessment (2): Activity | Week 13 |

| Assessment (3): Oral exam | Week 15 |
|---------------------------|---------|
| | |

Weighting of Assessment:

| Assessment method | Marks | Percentage |
|--|-------|------------|
| Written exam | 75 | 75% |
| Oral exam | 15 | 15% |
| Activities (appraisal of clinical trial & internet search) | 10 | 10% |
| TOTAL | 100 | 100% |

G- Facilities Required for Teaching and Learning:

Black (white) boards, data show, internet, air conditioned classroom

H-List of References:

1- Course Notes: Student book of Drug Information approved by pharmacy practice department, 2019.

2- Essential Books:

Drug information: A guide for Pharmacists, Patrick Malone et al 4th edition

3- Recommended Books:

Drug Information Handbook: A Clinically Relevant Resource for All Healthcare Professionals 27th edition by <u>Lexicomp</u>

4- Periodicals and websites:

PubMed, Cochrane Library, Trip database

Course Coordinator: Dr. Gehan Fathy Attia Head of Department: Dr. Gehan Fathy Attia

| | Matrix I of Drug information | | | | | | | | | | | | | |
|---|--|------|--------|--------|-----|-----------|-----------|-------------|-----------|------------|-----|---------|--------|--|
| | | ILOs | | | | | | | | | | | | |
| | | | | | | | | | | | | General | | |
| | | К | nowle | dge an | ıd | Professi | onal and | | | | | Transf | erable | |
| | | ι | Inders | tandin | g | practic | al skills | | Intellect | ual skills | 5 | sk | ills | |
| | Course Contents | | a2 | a3 | a4 | b1 | b2 | c1 c2 c3 c4 | | | c4 | d1 | d2 | |
| | | | ű. | us | u-r | 01 | UL. | CI | CZ | CS | C-4 | u1 | uz. | |
| 1 | Introduction to drug information | x | x | | | | | | | | | | | |
| 2 | Systematic approach for answering question Modified systematic approach | | | х | | | | | х | | | | | |
| 3 | Response formulation | | | х | | | | | х | | | | | |
| 4 | Drug information resources: • Tertiary literature • Evaluation of Tertiary literature | | | | х | | х | х | | | | | | |

| 5 | secondary literature | | х | | | | | | |
|---|--|--|----|---|---|---|---|---|---|
| | Primary literature | | | | | | | | |
| 6 | Alternative | | х | | х | х | | | |
| | Information Sources | | | | | | | | |
| | •Definition of controlled | | | | | | | Х | Х |
| | clinical trial | | | | | | | | |
| 7 | Format and content of | | ., | | | | | | |
| , | controlled clinical trials | | Х | | | | | | |
| | Reasons for not | | | | | | | | |
| | publishing trials | | | | | | | | |
| | Peer review process | | | | | | | | |
| | Appraisal of clinical trial: | | | | | | Х | х | Х |
| 8 | • title & Abstract | | x | x | | | | | |
| | Introduction | | | Α | | | | | |
| | Methods | | | | | | | | |
| | Appraisal of clinical trial: | | | | | | х | Х | Х |
| | Results | | | | | | | | |
| 9 | ◆Conclusion & discussion | | х | | | | | | |
| 9 | References | | ^ | x | | | | | |
| | True experiments— | | | | | | | | |
| | beyond the controlled | | | | | | | | |
| | clinical trial | | | | | | | | |

| 10 | Introduction to pharmacoeconomics • Types of costs: | | х | | | Х | |
|----|---|--|---|--|--|---|--|
| 11 | Pharmacoeconomics models Cost minimization analysis Cost benefit analysis Cost effectiveness analysis Cost utility analysis | | x | | | x | |
| 12 | Conduct economic analysis | | x | | | x | |
| 13 | Steps in decision analysis Pharmacoeconomic websites | | х | | | х | |

Matrix II of Drug information course

| | tional Academic Reference andards (NARS) | Program ILOs | Course ILOs | Course contents | Sources | lea | hing and arning ethods Self learning | Method of as | Oral exam |
|-----|---|-----------------|----------------|--|---------------------------------|-----|--|--------------|-----------|
| 2.1 | Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice. | A4 | a1 a2 a3 | Introduction to drug information Systematic approach for answering question Modified systematic approach Response formulation controlled clinical trial True experiments—beyond the controlled clinical trial Introduction to pharmacoeconomics Types of costs: | Student book Essential books | x | | × | x |

| | | | a4 | Pharmacoeconomic models | | | | |
|------|---|-----|----|---|---------------------------------|---|---|---|
| 2.19 | Principles of drug promotion, sales and marketing, business administration, accounting and pharmacoeconomics. | A29 | a4 | Pharmacoeconomics models: | Student book Essential books | x | x | х |
| 3.10 | Advise patients and other health care professionals about safe and proper use of medicines | B16 | b2 | Cost utility analysis Systematic approach for answering question Modified systematic approach Response formulation | Student book Essential books | x | x | x |
| | Conduct research | | b1 | controlled clinical trialDrug information | Recommended | Х | х | х |
| 3.11 | studies and analyze the results | B17 | b2 | resources: • Tertiary literature | books Internet | X | × | X |
| | | | | • secondary literature | | X | x | х |

| | | | | Primary literature Alternative Information Sources | | | | |
|------|--|-----|----|--|---------------------------------|---|---|---|
| 4.12 | Apply the principles of pharmacoeconomics in promoting cost/effective pharmacotherapy. | c14 | c4 | Pharmacoeconomics models Cost minimization analysis Cost benefit analysis Cost effectiveness analysis Cost utility analysis Conduct economic analysis Steps in decision analysis Pharmacoeconomic websites | Student book Essential books | x | × | x |
| 4.13 | Analyze and interpret experimental results as well as published literature | c15 | c3 | Appraisal of clinical trial: • title & Abstract • Introduction • Methods Appraisal of clinical trial: • Results • Conclusion & discussion • References | Student book Essential books | x | x | x |

| 4.14 | Analyze and evaluate evidence-based information needed in pharmacy practice. | c16 | c1 c2 | - Systematic approach for answering question - Modified systematic approach Response formulation • Drug information resources: • Tertiary literature Evaluation of Tertiary literature • secondary literature • Primary literature Alternative Information Sources | Student book Essential books | x | | × | x |
|------|--|-----|----------|--|----------------------------------|---|---|---|---|
| 5.10 | Implement writing and thinking, problem-solving and decision-making abilities. | D12 | d1 | Activity | Recommended books Internet | | x | | |
| 5.2 | Retrieve and evaluate information from different sources to improve professional competencies. | D2 | d2 | Activity | Recommended books Internet | | x | | |

Course Coordinator: Assistant Prof. Gehan Fathy Attia