

Specifications for General & systemic Pharmacology course

2025/2026

1-Basic information

| | | | | | | | | | |
|----|---|---------------------------------------|---|-----------|------|-------|---|-------|------|
| 1 | Course title | General& systemic Pharmacology | | | | | | | |
| 2 | Course code | PHA.311 | | | | | | | |
| 3 | Department/s participating in delivery of the course | Pharmacology | | | | | | | |
| 4 | Number of hours | Theoretical | 2 | Practical | 1(2) | Other | 0 | Total | 3(4) |
| 5 | Course Type | √ Obligatory Elective | | | | | | | |
| 6 | Level | 3 rd year | | | | | | | |
| 7 | Semester | Fall semester | | | | | | | |
| 8 | Academic program | Bachelor of Veterinary Medicine (BVM) | | | | | | | |
| 9 | Faculty | Veterinary medicine | | | | | | | |
| 10 | University | Benha University | | | | | | | |
| 11 | Name of course coordinator | Prof. Dr. Abubakr El-Mahmoudy | | | | | | | |
| 12 | Course Specification Approval Date | Faculty council/ 27-8-2025 | | | | | | | |
| 13 | Course Specification Approval (Attach the decision/minutes of the department /committee/council) | Department council/ 16/7/2025 | | | | | | | |

2-Course overview

- Course contents written in the program bylaw:

General pharmacology; Autonomic nervous system; central nervous system, Autocoids; Growth promoters; Metabolism.

3- Intended learning outcomes of the course (CLOs):

| | NARS ILOS | | Course ILOS | |
|-----------------------------|-----------|---|-------------|---|
| | Code | Context | Code | Context |
| Knowledge and understanding | 2.8 | Veterinary medications, uses, marketing, the impact of drug residues on human | a1 | mention sources of drugs and the active principles present in such sources (General Pharmacology) |
| | | | a2 | determine doses of different drugs and their routes of administration (Posology & |

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|--|------|---|----|--|
| | | health and quality control of pharmaceutical practices. | | Administration.). |
| | | | a3 | define the general drug actions and modes of actions (Pharmacodynamics). |
| | | | a4 | list the ways of drug absorption, distribution, metabolism, and excretion (Pharmacokinetics) |
| | | | a5 | describe different drug groups affecting different body systems (Systemic Pharmacology) |
| | 2.14 | Basics of law and ethical codes relevant to animals and food hygiene | a6 | describe a drug for treating a diseased condition (Systemic Pharmacology) |
| | | | a7 | identify toxic symptoms of a drug given in a large dose and to treat such condition (Systemic Phar.) |
| Intellectual skills | 4.2 | Assess and criticize, at the fundamental level, how data are derived. | b1 | Think about possible drugs for curing a case. |
| | | | b2 | Decide the best drug from the group for curing the case. |
| | | | | |
| | 4.5 | Remain committed to life – long learning and updating / upgrading their biochemical sense and clinical skills. | b3 | describe to the owner or the patient the different properties of the selected drug |
| Professional and practical skills | 3.5 | Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach | c1 | demonstrate different routes of administration of drugs. |
| | | | c2 | demonstrate different drug actions on experimental animals. |
| | 3.8 | Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and | c3 | demonstrate different drug actions on isolated organs |

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| | | therapeutic options. | | |
| General skills | 5.1 | Work under pressure and / or contradictory conditions. | d1 | Work under pressure during pharmacology lab session |
| | 5.5 | Search for new information and technology as well as adopt life-long self- learning ethics. | d2 | Search for new information in field of pharmacology |
| | 5.6 | Utilize computer and internet skills. | d3 | Utilize computer and internet skills, read paper via internet in field of pharmacology |

4- Teaching and learning methods

| | | | | | |
|-----------------------|---------------------------------|----------------------|---|----------------|---|
| Lectures | √ | Discussion & seminar | √ | Practical | √ |
| Presentation & movies | √ | Problem solving | √ | Brain storming | √ |
| Others | On line recorded video lectures | | | | |

- Course contents:

| Weeks [W] | Topics | Total Weekly hours | Theoretical teaching (lectures/discussion groups/) | Training (Practical/Clinical/) | Self-learning (Tasks/ Assignments/ Projects/ ...) | Others to be determined |
|-----------|---|--------------------|--|--------------------------------------|---|-------------------------|
| W1 | General Pharmacology 1 (Pharmacodynamics) | 3(4) | 2 | 1(2) | | 0 |
| W2 | General Pharmacology 2 (Pharmacokinetics) | 3(4) | 2 | 1(2) | | 0 |
| W3 | Drugs acting on Peripheral nervous system 1: (Adrenergic drugs: mimetics/lytics) | 3(4) | 2 | 1(2) | Formative quiz | 0 |
| W4 | Drugs acting on Peripheral nervous system 2: (Cholinergic drugs: mimetics / lytics) | 3(4) | 2 | 1(2) | | 0 |
| W5 | Drugs acting on Peripheral nervous system 3: | 3(4) | 2 | 1(2) | | 0 |

| | | | | | | |
|------------|--|-------------|----------|-------------|-----------------------|----------|
| | (Somatic: skeletal muscle stimulants / relaxants) | | | | | |
| W6 | Drugs acting on Central nervous system 1: (CNS stimulants: cerebral, medullary, spinal cord) | 3(4) | 2 | 1(2) | Formative quiz | 0 |
| W7 | Semester work(1 hour exam) | - | - | - | | - |
| W8 | Drugs acting on Central nervous system 2: (CNS depressants: sedatives, hypnotics, anticonvulsants, analgesics, tranquilizers, local anaesthetics, general anaesthetics) | 3(4) | 2 | 1(2) | | 0 |
| W9 | Drugs acting on Digestive system: (Sialics, Stomachics, Emetics, Antemetics, Antifrothings, Antacids) | 3(4) | 2 | 1(2) | | 0 |
| W10 | Drugs acting on Digestive system: (Evacuants: laxatives/purgatives, Antispasmodics, Cholagogues, Choloretics ...) | 3(4) | 2 | 1(2) | Formative quiz | 0 |
| W11 | Drugs acting on Cardiovascular system 1: (Cardiac stimulants, cardiac depressants, cardiac tonics, antiarrhythmics) | 3(4) | 2 | 1(2) | | 0 |
| W12 | Drugs acting on Cardiovascular system 2 (vasoconstrictors, vasodilators, hypertensives, antihypertensives, antanemics, anticoagulants, thrombolytics) | 3(4) | 2 | 1(2) | | 0 |
| W13 | Drugs acting on Respiratory system: (Respiratory stimulants, depressants, bronchodilators, expectorants, mucolytics, membrane shrinkers) | 3(4) | 2 | 1(2) | | 0 |
| W14 | Drugs acting on Urinary system: (Diuretics, Antidiuretics, Uricosurics) | 3(4) | 2 | 1(2) | Formative quiz | 0 |

| | | | | | |
|-----|----------------|---|---|---|---|
| W15 | Practical exam | - | - | - | - |
|-----|----------------|---|---|---|---|

5- Assessment timing and grading:

a- Assessment methods (summative and formative)

1. **Formative assessment:** including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activities, semester work, practical exam, oral exams and final written exams).

b- Assessment schedule and weight

| Assessment method | Assessment Timing (Week Number) | Marks/ Scores | Percent Percentage of total course Marks |
|---|---------------------------------|---------------|--|
| Semester work including one hour exam | 7 th week | 10 | 10% |
| Formative assessment | Throughout the semester | ----- | ----- |
| Practical exam | 15 th week | 30 | 30% |
| oral exam | End of semester | 10 | 10% |
| Written exam | End of semester | 50 | 50% |
| Assignments / Project /Portfolio/ Logbook | ----- | 5 | marks included with the Practical |
| Field training | ----- | ----- | ----- |
| Other (Mention) | ----- | ----- | ----- |
| Total | | 100 | 100% |

6- Learning resources and supportive facilities:

| | | |
|---------------------------|-------------------------------------|---|
| Learning resources | Main reference | Student handbook: Pharmacology & Therapeutics for Veterinary Medical Students (2007). Edit by Staff members |
| | Essential books (text books) | Handbook of Veterinary Pharmacology (2008). Walter H. Hsu, 1st Edition, Wiley-Blackwell Publishing, Iowa, USA. |
| | Recommended books | Goodman and Gilman's The Pharmacological Basis of Therapeutics 13e (2018). McGraw-Hill Education (USA) - Veterinary Pharmacology and Therapeutics (2018). 10th ed., by Jim E. Riviere & Mark G. Papich, John Wiley & Sons, Inc USA. - Saunders Handbook of Veterinary Drugs Small and Large Animals, 4ed., 2016. Papich, M. G. Elsevier, USA. |

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|------------------------------|--|--|
| | Periodicals, Web sites, . . . etc | <ul style="list-style-type: none"> - Pharmacology Research - Journal of Vet. Pharmacology and Therapeutics. - British Journal of Pharmacology - http://www.fda.gov (Food & Drug Administration web site) - http://www.aspet.org/public/pharm_resources/default.html (Pharmacology resources) - http://www.merckvetmanual.com (Veterinary encyclopedia) |
| | Learning platform | Thinqi |
| supportive facilities | Devices & instruments | Water bath, Organ bath, Kymograph, Electric stimulator, Distillator, Data show, Test tubes, Test tube racks, Test tube holders, Erlenmayer's Flasks, Laboratory animal cages, Restraint holders, Syringes, needles, droppers, Glass funnels, Digital balances, Manual glass pipettes, Automatic pipettes, Vortex mixer, Magnetic stirrers, |
| | | <ul style="list-style-type: none"> - A well-prepared and equipped classroom and lab for Pharmacology. - Stocks of drugs and chemicals. - Simplified machines for drug formulations (Teaching Drug Factory) |

Matrices:

A- Content and ILOs matrix:

| Assessment | ILOs | | | |
|---|-----------------------------|--------------|----------------------------|--------------------------|
| | Knowledge and understanding | Intellectual | Professional and practical | General and transferable |
| General Pharmacology | a1-a2-a3-a4 | -- | -- | d1-d2-d3 |
| Drugs acting on PNS | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Drugs acting on CNS | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Drugs acting on Digestive system | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Drugs acting on CVS | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Drugs acting on Respiratory s. | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Drugs acting on Urinary system | a5-a6-a7 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |
| Semester activity | a1-a2-a3-a4 | b1, b2, b3 | c1,c2, c3 | d1-d2-d3 |

B- Teaching and learning methods and ILOs matrix:

| ILOs | | Teaching and Learning methods | | | | | | |
|-----------------------------------|----|-------------------------------|-----|---|---|----|----|----|
| | | L | P&M | D | P | Ps | Bs | FV |
| Knowledge and understanding | a1 | √ | √ | √ | | | √ | |
| | a2 | √ | √ | √ | | | √ | |
| | a3 | √ | √ | √ | | | √ | |
| | a4 | √ | √ | √ | | | √ | |
| | a5 | √ | √ | √ | | | √ | |
| | a6 | √ | √ | √ | | | √ | |
| | a7 | √ | √ | √ | | | √ | |
| Intellectual skills | b1 | √ | √ | √ | | √ | √ | √ |
| | b2 | √ | √ | √ | | √ | √ | √ |
| | b3 | √ | √ | √ | | √ | √ | √ |
| Professional and practical skills | c1 | | √ | √ | √ | √ | | √ |
| | c2 | | √ | √ | √ | √ | | √ |
| | c3 | | √ | √ | √ | √ | | √ |
| General skills | d1 | | √ | √ | | | √ | |
| | d2 | √ | | | | √ | √ | √ |
| | d3 | √ | | √ | √ | | | √ |

L :Lecture, P&M: Presentations & Movies, D&S: Discussions & Seminars P: Practical Ps: Problem solving, Bs: Brain storming

C- Assessment methods and ILOs matrix:

| ILOs | | assessment method | | | | |
|-----------------------------------|----|----------------------|---------------|------|-----------|---------|
| | | Formative assessment | Semester work | oral | practical | written |
| Knowledge and understanding | a1 | √ | √ | √ | | √ |
| | a2 | √ | √ | √ | | √ |
| | a3 | √ | √ | √ | | √ |
| | a4 | √ | √ | √ | | √ |
| | a5 | √ | √ | √ | | √ |
| | a6 | √ | √ | √ | | √ |
| | a7 | √ | √ | √ | | √ |
| Intellectual skills | b1 | | √ | √ | | √ |
| | b2 | | √ | √ | | √ |
| | b3 | | | √ | | √ |
| Professional and practical skills | c1 | | | | √ | |
| | c2 | | | | √ | |
| | c3 | | | | √ | |
| General skills | d1 | | | √ | | |
| | d2 | | | √ | | |
| | d3 | | | √ | | |

-Course coordinator:

Prof. Dr. Abubakr El-Mahmoudy

-Program coordinator:

Prof. Dr. Mahmoud Abouelroos