

Liverpool John Moores University

Title: SCIENTIFIC PRINCIPLES AND PHARMACOLOGY
Status: Definitive
Code: **4500PPCPOP** (110277)
Version Start Date: 01-08-2014

Owning School/Faculty: Nursing and Allied Health
Teaching School/Faculty: KPJ International College of Nursing and Health Sc

| Team | Leader |
|-------------|--------|
| Sean Mackay | |

Academic Level: FHEQ4 **Credit Value:** 24.00 **Total Delivered Hours:** 92.00

Total Learning Hours: 240 **Private Study:** 148

Delivery Options

Course typically offered: Semester 1

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 60.000 |
| Tutorial | 30.000 |

Grading Basis: 40 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|----------|-------------------|-------------|---------------|---------------|
| Exam | AS1 | Examination | 50.0 | 1.00 |
| Exam | AS2 | Examination | 50.0 | 1.00 |

Aims

To enable the student to apply basic physics and pharmacological principles to practice in the operating department

To enable the student to develop an understanding of the pharmacological action of drugs used in anaesthetic practice and the effects of concomitant disease and drug use on the control of anaesthesia

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify scientific principles underlying the safe use of equipment in the operating department
- 2 Outline the scientific principles utilised in a range of monitoring, diagnostic and therapeutic equipment used in the operating department
- 3 Discuss the use of ionising radiation in the operating department and the hazards involved in its use
- 4 Demonstrate an awareness of the physiology of pain and the actions of analgesic drugs
- 5 Discuss the use and pharmacology of anaesthetics and other common drugs used in anaesthetic practice
- 6 Describe the theory, administration and uses of intravenous fluids
- 7 Complete simple drug calculations

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

| | | | | | |
|--------|---|---|---|---|--|
| EXAM 1 | 1 | 2 | 3 | | |
| EXAM 2 | 4 | 5 | 6 | 7 | |

Outline Syllabus

Atomic theory, conservation of energy, pharmacokinetics

Electricity: principles, uses, safety aspects

Pressure: monitoring; positive pressure ventilation

Fluid mechanics: IV fluids; irrigation fluids

Electromagnetic radiation: ionising and non-ionising – lasers, x-rays, imaging, radiotherapy nuclear medicine

Sound and ultrasound

Principles of pharmacology: anaesthetic drugs, CVS drugs, numeracy and drug calculations

Pain and analgesia

Learning Activities

A series of lectures to impart factual knowledge will be given and group tutorials will be utilised to broaden the students' knowledge base.

Notes

The module aims to facilitate students understanding of the pharmacological effects of anaesthetic agents, gasses and applied scientific principles in relation to

anaesthetic practice. The examinations will be staggered at weeks 12 and 15.