

CLIN*6950 Special Topics in Clinical Studies Summer 2017 [0.50]

Title:

REVIEW OF PATIENT MONITORING DEVICES AND ANESTHESIA EQUIPMENT

Coordinator:

Alexander Valverde

This course focuses on patient monitoring devices and anesthesia equipment in veterinary medicine. It is being offered to graduate veterinary students pursuing advanced training in Doctorate of Veterinary Science in the areas of anesthesia, critical care, cardiology, internal medicine, and surgery.

The course will provide the graduate student with the opportunity to review the available current literature on patient monitoring devices and anesthesia delivery equipment to better understand principles of operation, materials of construction, functionality and limitations.

1. Course Objectives:

- 1) Understand the principles of operation of patient monitoring devices and anesthesia delivery equipment
- 2) Describe the features of design, measurement, application and limitations of each patient monitoring device or anesthesia delivery equipment

2. Material to be covered:

This course consists of topic assignment and presentations with discussion. One topic per week; *specific day and time to be defined*, a 1.5-2 hour presentation.

Each student will be assigned two to three (2-3) topics for their presentations, which should be prepared in a concise and schematic way, with a handout that will allow the participants to have a summary of the topics at the end of the course. All graduate students enrolled and auditing the course will be assigned presentations. Some of the course topics will be presented by Faculty and also attend sessions as to provide feedback and participate in topic discussion.

The following format is recommended for preparing the presentation:

- 1) Description and use of the monitoring device and/or anesthesia equipment
- 2) Types of available monitoring devices and/or anesthesia equipment
- 3) Factors that influence the measurement of the monitoring device
- 4) Reliability and comparison to other methods of measurement
- 5) Current veterinary literature that validates the use of the monitoring device

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The following are suggested topics that will be used for the assignment of the 2-3 topics/person:

The Anesthetic machine

- a) Designs
- b) Pressure systems
- c) Oxygen tanks
- d) Scavenging

Vaporizers

- a) VIC
- b) VOC

Anesthetic circuits, endotracheal tubes and laryngoscopes

- a) Mapleson classification
- b) Nomenclature of equipment
- c) Designs

Ventilators

- a) Pressure-limited
- b) Volume-limited
- c) Invasive versus non-invasive

Anesthetic and respiratory gas monitors

- a) Spectroscopy
- b) Electrochemistry
- c) Other methods (paramagnetism, piezoelectric adsorption)
- d) Capnography

Blood pressure monitors

- a) Non-invasive arterial blood pressure
- b) Invasive arterial blood pressure
- c) CVP

Cardiac output (CO) monitoring and monitors

- a) Non-invasive CO
- b) Invasive CO

Pulse and blood oximetry

- a) Pulse oximetry
- b) Blood oximetry

Blood gas monitors

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- a) Oxygen electrode
- b) pH
- c) CO₂

Nerve stimulator/locator

- a) Uses
- b) Nerve stimulator
- c) Nerve locator

Electrocardiography/Echocardiography

- a) Monitors
- b) Wave measurement (amplitude, duration)
- c) Diagnostic versus monitoring

Electroencephalography

- a) Waves
- b) Interpretation
- c) Quantitative EEG
- d) Bispectral

	June	June	June	June	July	July	July	July	July	Aug	Aug	Aug	Sept
Grad. Stud.													
Grad. Stud.													
Grad. Stud.													
Faculty													
EXAM													X

3. Method of Evaluation:

Assigned topics 40%
 Written examination- 60%

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Standard Statements – Graduate Course Outlines

The following are standard statements for inclusion on all course outlines (adapted with permission from the College of Arts). Some departments or colleges may also elect to post this information on a common website and link to such sites in the course outline. However, it is strongly recommended that statements on academic misconduct and links to the academic misconduct section of the academic calendars be included in all course outlines.

E-mail Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course in writing, with your name, id#, and e-mail contact. See the graduate calendar for information on regulations and procedures for Academic Consideration:

http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1400.shtml

Drop Date

The last date to drop one-semester courses, without academic penalty, is DATE HERE. Two-semester courses must be dropped by the last day of the add period in the second semester. Refer to the Graduate Calendar for the schedule of dates:

<http://www.uoguelph.ca/registrar/calendars/graduate/current/sched/sched-dates-f10.shtml>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. The Academic Misconduct Policy is detailed in the Graduate Calendar:

http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1687.shtml

Recording of Materials

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Presentations which are made in relation to course work—including lectures—cannot be recorded in any electronic media without the permission of the presenter, whether the instructor, a classmate or guest lecturer.

Resources

The Graduate Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to graduate programs:

<http://www.uoguelph.ca/registrar/calendars/graduate/current/>