1 Course Details

1.1 Calendar Description

The principles of surgery in various animal species are given. The lecture topics include patient and surgeon preparation, tissue handling instrumentation, suturing and surgical principles and approaches to various organ systems and anatomical regions.

Pre-Requisites: All Phase 1 courses.
Co-Requisites: All Phase 2 courses.

1.2 Course Description

This course is an introduction to basic and advanced principles of veterinary surgery. More specifically, the lecture topics include patient and surgeon preparation, asepsis in surgery, tissue handling, instrumentation & suturing. In addition to surgical principles, this course introduces the techniques for abdominal exploration and abdominal organ biopsy, principles of orthopedic surgery and bandaging techniques, principles of oncologic surgery, ovariohysterectomy and castration procedures as well as principles and practical techniques in dentistry.

This course consists of lecture sessions, independent website study with web-based assignments, a mastery list assignment as well as 7 practical laboratory sessions (some using an at-home kit and some in-person).

1.3 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.
2 Instructional Support

2.1 Instructional Support Team

Instructor: Noel Moens  
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Office Hours: Small Animal Surgeon

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Course Co-ordinator: Brigitte Brisson  
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2.2 Teaching Assistants

- **Teaching Assistant:** Nicole Kudo
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  - **Office Hours:** Clinical Skills Technician

- **Teaching Assistant:** Meghan Longley
  - **Email:** mlongley@uoguelph.ca
  - **Office Hours:** Clinical Skills Technician

3 Learning Resources

Lectures will all be delivered remotely either as synchronous (at the scheduled time) using Virtual Classroom (Courselink) or Zoom, or asynchronously. Whenever possible, lectures will be delivered synchronously (live, on the scheduled day/time). When synchronous / live lectures are not possible, they will be pre-recorded and delivered as asynchronous lectures. Announcements will be made by individual instructors using Courselink if lectures are to be asynchronous (pre recorded). Asynchronous lectures will be posted to Courselink on the evening prior to the scheduled date/time for the start of the lecture, so students can keep up with lecture material. Individual instructors may offer office hours or question periods as a follow-up for asynchronously presented lectures. During synchronous sessions, questions should be typed and posted in the Q&A/Chat area rather than verbally. Response (during or after the lecture) will vary depending on the lecture and individual instructor. Recorded, synchronous lectures will be posted either as a file for download, or a link for viewing (instructor dependent) on Courselink.

Students who are new to remote learning may wish to visit the following support resources to get some basic information. We suggest visiting the start here box first:

https://opened.uoguelph.ca/instructor-resources/learning-remotely

Course notes will not be printed. Please refer to Courselink for course notes and/or Powerpoint presentations.

Review of the http://www.uoguelph.ca/vetsurgery/ website is necessary to learn the skills
presented in this course, to prepare for the surgery laboratories (at home or in person), to complete the video assignments, to complete the quizzes and to support lectures 1-4 and 7-11 and 14 & 15 in this course. It is expected that the reading list (roadmap for the surgery website) provided on Courselink will be followed and the independent times assigned in the schedule should be utilized for this work.

Please refer to Small Animal Surgery (Theresa Fossum, Mosby, 5th edition 2018) as an additional written reference. Earlier editions are also acceptable to review these basic concepts.

A DASIE along with basic instrumentation (one pair of needle drivers, a thumb forceps, a mosquito hemostat and Mayo and/or suture scissors) as purchased in Phase 1 are required to perform the independent suturing laboratory exercises during online review and for the practical laboratory sessions. The take-home kit contains 5 packs of suture material, 2 surgical blades, 12 gauzes (patient prep), 1 unwrapped paper gowns (to familiarize yourself with the gowning process), 3 pairs of gloves, 1 surgical hat, 1 mask, 1 scrub brush with nail pick, 2 unwrapped paper corner drapes, 4 towel clamps and a laparotomy sheet. You will need to reuse materials such as gloves, drapes, laparotomy sheet and gowns by re-folding them after each use. Video instructions on how to do this are provided in Courselink. The kit also contains a sterile surgery pack with 2 hand towels, 2 gowns and 4 corner drapes. This sterile kit will be used for the recording of your video assessment. The TAKE HOME KIT contents are to be used for practice of asepsis and suturing skills as well as to complete the video skills assessments. **Ensure you keep one surgical gown perfectly folded for your video assessment as the gowns do not fold back very well.**

Dish soap +/- food colouring can be used to practice patient preparation on any surface (a plastic container works well). Alternatively, you can cover your DASIE with foil or plastic wrap to practice patient preparation at home. Please refer to the skills videos posted on Courselink and in the surgery website (http://www.uoguelph.ca/vetsurgery/) to review and learn these skills / procedures.

For students who do not have their own instruments, please contact the clinical laboratory instructors to arrange to borrow instruments. There are a limited number available. ***When borrowing the instrument set, the student acknowledges that he or she will owe $50 (for replacement) should the instruments be lost, broken or fail to be returned as a complete set.***

*** Please ensure to keep your blades and suture needles safely to avoid injury and to dispose of them in a designated yellow sharps container as soon as you are done using them. These can be kept in a plastic or glass jar until such time that you can dispose of them correctly.

A phone with video recording capacity or other video recording device (computer camera, ipad, GoPro or other videocamera) will be necessary to record your skills assessment videos. Please contact the course coordinator if you do not have this capability and need to discuss your options.

The take-home kit also contains materials for the Oncology lab including a silicone mass model and a punch biopsy forceps.
4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Unit: Surgical instrumentation, suture materials and patterns

   The student will be able to:

   **Surgical instruments:**

   - Identify various components of surgical instruments.
   - Identify commonly used instruments (components of a basic surgical kit).
   - Understand the correct and incorrect handling of commonly used surgical instruments.
   - Discuss the use of and indication for commonly used surgical instruments.

   **Suture materials:**

   - Name the most common absorbable and non-absorbable suture materials.
   - Compare the advantages and limitations of absorbable and non-absorbable suture materials.
   - Compare the advantages and limitations of monofilament and braided suture materials.
   - List the indications and contraindications of various suture materials.
   - Identify and list various needle types.
   - Discuss the qualities, indications and contraindications for various needle types.
   - Describe how to handle suture as it comes out of a suture pack.
   - Discuss the use of surgical staples and surgical adhesives.

   **Suture patterns:**

   - Describe the most common suture patterns.
• Understand the principle of and how to achieve a square knot.
• Understand the concept of a ‘slip’ and ‘granny’ knot.
• Understand the principles of how to place a simple interrupted and continuous suture pattern.
• Compare the advantages and limitations of continuous and interrupted suture patterns.
• List the indications and contraindications for the common suture patterns

2. Unit: Asepsis

The student will be able to:

Preparation of the surgical patient

• List and describe the steps involved in patient preparation for a surgical procedure.
• List and describe the indications and contraindications for different hair removal techniques.
• List disinfectants that are commonly used for patient skin preparation (iodine, alcohol, chlorhexidine).
• Compare the characteristics of disinfectants that are commonly used for patient skin preparation.
• Describe surgical site scrub techniques.
• Describe surgical draping procedures.

Preparation of the surgical team:

• List and describe the steps involved in surgeon hand preparation.
• List disinfectants that are commonly used for skin preparation.
• Compare the characteristics of commonly used disinfectants (iodine, alcohol, chlorhexidine)
• Compare characteristics of paper and cloth drapes and gowns.
• List the indications for proper surgical attire (hat, mask, gown and gloves).
• Recognize sterile and unsterile portions of a surgical gown.
• Describe surgical draping techniques.
• Describe strike through.

**Sterilization techniques:**

• List and describe the various sterilization procedures used on surgical equipment.
• Describe the indications, qualities and limitations of each method of sterilization.
• List methods used to confirm the sterility of instruments or surgical packs.
• Describe the use and limitations of various sterilization indicators.

3. **Unit: Principles of Surgical Oncology**

**The student will be able to:**

• Describe common surgical principles that apply to oncologic surgery.
• Identify the role of surgery in the diagnosis, palliation and cure of cancer.
• List the indications for surgical intervention in a cancer patient.
• List the contraindications for surgical intervention in a cancer patient.
• List the causes of treatment failure and contraindications for surgical intervention in a cancer patient.
• Describe the principles of incisional and excisional biopsy.

4. **Unit: Principles of Abdominal Surgery**

**The student will be able to:**

• Describe common surgical approaches to the abdominal cavity.
• Identify the advantages and limitations of common surgical approaches to the abdominal cavity.
• Identify and list the indications of common surgical approaches to the abdominal cavity.
• List the principles of abdominal incision and closure techniques.
• Describe potential postoperative complications associated with abdominal closure and healing and how to handle those clinically.
• Describe the steps of a complete exploratory laparotomy.
• Describe the general principles of various abdominal organ biopsy technique.

5. **Unit: Bandaging**

The student will be able to:

- Name and describe the function of the different layers of a bandage.
- Describe the principles of application of the different layers of a bandage.
- Describe the potential complications associated with bandages.
- Describe the pathophysiology and the treatment of these complications.

6. **Unit: Ovariohysterectomy**

The student will be able to:

- Describe the indications, advantages and potential disadvantages to performing OHE.
- Describe the surgical preparation required for ovariohysterectomy in dogs and cats.
- Describe the surgical approach for ovariohysterectomy (OHE).
- Describe 3 methods available to identify the genital tract during OHE.
- Understand and describe how to use of a spay hook to retrieve the genital tract.
- Understand and describe the steps to involved in performing an ovariohysterectomy
  - Using a modified 3-clamp technique
  - Using a 3-clamp technique
  - Options to safely ligate the ovarian pedicles and uterine body.
Options to address the broad ligament.

- Describe potential intraoperative complications associated with OHE.
- Describe how to identify and retrieve a bleeding pedicle.
- Describe potential postoperative complications associated with OHE.
- Describe technical considerations associated with performing an OHE in an animal that is in heat or pregnant or has pyometra.

7. Unit: Canine and feline castration

The student will be able to:

- Describe the indications, advantages and potential disadvantages to performing castration.
- Describe the surgical preparation required for castration in dogs and cats.
- Describe the surgical approach for feline and canine castration.
- Describe the difference between open and closed castration techniques.
- Understand and describe the steps involved in performing a feline and canine castration.
- Understand and describe the differences in techniques used to perform canine and feline castration.
- Describe the two techniques for feline castration (figure of 8 vs knots).
- Describe the possible intraoperative complications associated with feline and canine castration.
- Describe the possible postoperative complications associated with feline and canine castration.

8. Unit: Prophylactic antibiotics in surgery

The student will be able to:

Classification of surgical wounds

- Describe the various types of wounds and identify which wounds would
benefit from antibiotic treatment.
• Identify a specific type of wound based on a given case scenario.

Factors that influence the postoperative infection rate

• List the factors associated with surgical procedures that influence the development of postoperative infections.

Bacteria normally encountered in surgical patients

• Name bacteria commonly encountered in various tissues.
• Name an effective preventative antibiotic based on a given case scenario.

Institution and duration of antibiotic prophylaxis

• Identify the most efficacious time to start prophylactic antibiotic therapy based on a given case scenario.
• Determine an adequate duration of treatment based on a given case scenario.

Complications of antibiotic prophylaxis

• Discuss the complications associated with indiscriminate antibiotic use, including shedding of resistant organisms and superinfection.

9. Unit: Introduction to fracture fixation and coaptation

The student will be able to:

Fracture healing

• Describe the blood supply to bone in the normal, fractured and healing
Fracture repair

- Name the different forces acting on the bone.
- Discuss the importance of these forces when repairing a fracture.
- Discuss the relative strengths and weaknesses of each type of implant with respect to these forces.
- Describe the principles, indications, contraindications and risks associated with external coaptation.
- Describe the principles, indications, and contraindications of external fixation.
- Describe the biomechanical principles that make an external fixator effective.
- Discuss the principles, indications, contraindications and the risks associated with the use of intramedullary pins, cerclage wires, interlocking nails, bone screws and bone plates.
- Name the different types of bone plates and explain their respective indication.

10. Unit: Independent Suture Lab (Independent learning using website materials and DASIE / TAKE HOME KIT)

The student will be able to:

Basic instrument handling
• Perform and demonstrate correct surgical instrument handling.

Knot tying

• Create square knots using instrument tying techniques.
• Place circumferential and transfixing ligatures on a pedicle.

Interrupted suture patterns

• Perform and demonstrate the most common interrupted suture patterns (simple interrupted, cruciate, vertical mattress and horizontal mattress patterns) using correct surgical techniques.

Continuous suture patterns

• Perform the most common continuous suture patterns (simple continuous, Lembert, Cushing, and Ford interlocking patterns) using correct surgical techniques.

Suture materials

• Identify common suture materials.
• Describe the advantages and limitations of common suture materials

11. Unit: Practical Laboratory Sessions

Laboratory 1: Asepsis & Suturing I (**USING TAKE-HOME KIT, AND COMPLETING VIDEO ASSIGNMENT)

The student will be able to:

• Correctly open a gown pack and a glove pack using aseptic technique.
• Perform hand preparation using correct technique.
• Perform correct hand drying and gowning using sterile technique.
• Perform closed gloving using sterile technique.
• Demonstrate the placement of square knots and buried starting and finishing continuous knots while wearing sterile gloves.
• Identify the simulated layers of DASIE.
• Explain which suture pattern is indicated for closure of an abdominal incision.

**Laboratory 2: Asepsis & Suturing II, Draping (**)USING TAKE-HOME KIT AND COMPLETING VIDEO ASSIGNMENT**

**The student will be able to:**

Perform patient preparation using a model.

• Correctly open a drape and laparotomy sheet pack.
• Perform open gloving (wearing a gown).
• Perform corner draping of a DASIE model using correct, sterile technique.
• Apply a laparotomy sheet using sterile technique.
• Demonstrate ligating pedicles, bleeding vessels and uterine body (circumferential and transfixing sutures).
• Demonstrate techniques for gentle tissue handling.

**Laboratory 3: Asepsis, draping & suturing III (**)IN PERSON COVID PERMITTING - WINTER 2021**

**The student will be able to:**

• Perform patient preparation using a model.
• Correctly open a gown pack and a glove pack using aseptic technique.
• Correctly open a drape and laparotomy sheet pack using aseptic technique.
• Correctly open an instrument pack using aseptic technique.
Perform hand preparation using correct technique.
• Perform correct hand drying and gowning using sterile technique.
• Perform closed gloving using sterile technique.
• Perform draping of a DASIE model using correct, sterile technique.
• Apply a laparotomy sheet using sterile technique.
• Perform a surgical incision using a scalpel blade.
• Demonstrate the correct placement of square knots.
• Demonstrate the placement of simple interrupted and continuous suture patterns using correct instrument handling and surgical technique.

Laboratory 4: Surgical Oncology (**USING TAKE-HOME KIT)

The student will be able to:

• Perform incisional and excisional biopsies using a punch biopsy instrument and a scalpel blade.

Laboratory 5: DASIE OVH + OVH model creation (**IN PERSON COVID PERMITTING - WINTER 2021)

The student will be able to:

• Identify all important anatomic structures encountered during OVH -
• Design and create an OVH model to be used in the lab - USING TAKE HOME KIT
• Complete all the tasks from laboratory 3 (except patient preparation)
• Correctly approach the abdominal cavity of a DASIE model for ovariohysterectomy.
• Perform an ovariohysterectomy on a DASIE model using a modified 3-clamp technique.
• Correctly perform a 3-layer abdominal wall closure.

Laboratory 6 & 7: Dentistry
Lab 6

The student will be able to:

Anatomy, nomenclature, physical exam of oral cavity, head and neck, introduction to charting

- Identify and name by the triadian system, all deciduous + adult teeth of the dog/cat.
- Describe the number of deciduous and adult teeth, and how to distinguish the difference between them.
- Describe the landmarks of 4/8/9
- Identify the anatomical location of the relevant nerves and blood vessels in relation to risk factors for dentistry (as covered in the lab)
- Explain the different terminology and grades of oral malocclusions.
- Perform a systematic physical exam of the head and oral cavity as part of the COHAT Comprehensive Oral Health Assessment.
- Complete all sections of a dental chart including filling out the physical exam
- List the acronyms for periodontal disease
- Practice grading of periodontal disease

Periodontal disease, introduction to radiographic interpretation, charting continued

- Identify and classify different components of periodontal disease from photos and simulated models.
- Perform the correct grading of periodontal disease.
- Practice basic Radiographic Interpretation-distinguish between a deciduous and adult tooth
- Discuss how periodontal disease appears radiographically for common lesions such as abscess, furcation, broken tooth, resorptive lesions
- Complete all sections of a dental chart including filling out the physical exam
- List the acronyms for periodontal disease
• Practice grading of Periodontal disease

**Equipment, scaling + polishing, charting continued**

• Identify and properly handle and use scalers, curettes and polishers.
• Identify risk factors for inappropriate use of the dental instruments.
• Discuss importance of sharpening/care, sand/oil and angles and identifying when instruments need to be sharpened.
• Explain the process of performing a thorough dental cleaning: chlorhexidine flush, supragingival scaling, subgingival curettage, subgingival polishing
• Understand how to determine if the dental cleaning has been done thoroughly and appropriately
• Complete all sections of a dental chart including filling out the physical exam
• List the acronyms for periodontal disease
• Practice grading of Periodontal disease

**Lab 7**

**The student will be able to:**

**Radiology positioning, parallel and bisecting angles, radiation safety**

• Practice appropriate animal positioning for dental radiographs.
• Explain the theory of parallel and bisecting angles
• Position the cone and predict the outcome of the radiograph
• Understand concept of foreshortened and lengthened angles during interpretation of the dental radiograph
• Discuss the importance of radiation safety and personal protective equipment.
• Describe what is a good quality vs. a poor quality dental radiograph.
• Understand the importance of whole mouth radiographs
• Identify digital radiograph equipment types/options
Techniques for dental block, analgesia, drug calculations

- Name and locate the four major dental blocks
- Know the anatomical areas affected by each block
- Discuss the specific techniques of each blocking site and risks for dogs and cats
- Discuss drugs used for analgesia, dose and concentration
- Calculate the toxic dose of local analgesics

“Humane toothanasia” aka extractions

- Identify indications for extractions
- Identify the anatomy of tooth being extracted (number of roots, surrounding structures; vessels, nerves etc.)
- Describe the steps that may be involved to extract a tooth: Gingival flap, bone debridement, tracing of the periodontal ligament, elevating and suturing gingiva.
- Practice extracting a tooth from the simulator

5 Teaching and Learning Activities

Lectures

Lectures will be delivered remotely either as synchronous (at the scheduled time) using Virtual Classroom (Courselink), or asynchronously. Whenever possible, lectures will be delivered synchronously (live, on the scheduled day/time). When synchronous/live lectures are not possible, they will be pre-recorded and delivered as asynchronous lectures. Announcements will be made by individual instructors using Courselink if lectures are to be asynchronous (pre-recorded). Asynchronous lectures will be posted to Courselink no later than the evening prior to the start of the lecture, so students can keep up with lecture material. Individual instructors may offer office hours or question periods as a follow-up to asynchronously presented lectures. During synchronous sessions, questions should be typed and posted in the Q&A area rather than verbally. Response (during or after the lecture) will vary depending on the lecture, time available and individual instructor. Recorded, synchronous lectures will be posted either as a file for download, or a link for viewing (instructor dependent).
**Surgery Independent Study**

The online surgery modules, online surgery quizzes, dentistry modules, suture mastery list and preparation for the laboratory sessions will be performed outside of didactic and lab teaching times and you have been provided with independent time in your schedule to help facilitate this work but additional time will be required so please plan accordingly. For the online quizzes, a surgery website (http://www.uoguelph.ca/vetsurgery/) has been designed to provide didactic information, images and most importantly current video clips to enhance learning by outlining the steps of each procedure as well as the do's and don'ts and complement the topics discussed in class. A variety of information is available on this site so a principles of surgery roadmap is provided to help you navigate through the sections that are required for this course. Other materials found on this website are available for extra-curricular review – you are welcome to explore but do not need to review all of it right now! Additional videos are included on Courselink to complete your learning for each lab/video assignment. Make sure you view them! Clinical skills lab drop-in sessions (in person or virtual depending on COVID restrictions) will be scheduled for some of the independent times to allow consultation and practice of surgical skills.

- **Surgery Quizzes**

  Independent review and study of the relevant lecture material and website sections (http://www.uoguelph.ca/vetsurgery/) as well as the lectures will be required to complete the Courselink quizzes. Deadlines and grades for the quizzes are listed online and below.

- **Suture and Asepsis skills development using the take-home kit, virtual and in person labs**

  You were provided with a take-home skills practice kit that should be used to develop and practice the critical knowledge and psychomotor skills required for entry into Phase 3’s surgical exercises and to eventually perform surgery in practice. Using the course materials and most importantly the online videos provided (http://www.uoguelph.ca/vetsurgery/ and on Courselink) you will be asked to learn the principles, and develop and practice skills such as basic and more advanced suturing, patient preparation, hand scrubbing, hand drying, gowning, closed gloving, draping of the surgical site and application of a laparotomy sheet. Assessment rubrics are provided in Courselink to guide your learning and expectations for each skill. In-person (COVID permitting) or online skills lab sessions will hosted by the skills lab staff and posted on Courselink. The skills you learn and practice at home, will be re-enforced during the in-person laboratories (Asepsis lab 3 and DASIE spay lab). Should you have concerns about your independent learning, you can reach out to a classmate or colleague in another phase, Dr. Brisson or Dr. Joy for support.
Surgical Skills Video Assessment

Videos of the required asepsis/suture skills must be recorded and uploaded prior to each deadline listed in Courselink. Critical psychomotor skills that relate to patient and surgeon asepsis will be assessed via video submission for grade. Using the scheduled independent and laboratory time and prior to submitting your skills videos through the Courselink video assignment tab, ensure that you have reviewed all the relevant materials (vetsurgery website videos, Courselink videos, lecture notes, and assessment rubrics). Practice the required skills until you feel confident. Then record yourself performing the required skills (Video 1: Hand drying, gowning and gloving; Video 2: Patient draping and applying a laparotomy sheet (while gowned and gloved); Video 3: Subcutaneous closure with buried knots using the DASIE model). Review this video and self-assess / critique using the respective assessment rubrics provided in the Rubrics tab in Courselink. If you identify flaws, you can re-record your skills performance but do not stress too much over it. Once satisfied, trade videos with a classmate for peer assessment and critique each other’s performance using the respective assessment rubric. Return your assessments to allow each of you to learn and further improve your psychomotor skills. When satisfied with your learning and skills, upload your video (same or new recording) of the required skills for assessment and grading. Please ensure the video (quality and framing) allows assessment of the skills being assessed. Three such videos will be required for this course. Videos can be uploaded to Courselink using the video assignment tab under content. Video files should be named as follows: student number_last name_video#(1-3). Assessment will use the rubrics provided under forms and resources and may also include time stamped written or video comments to allow you to identify and correct missteps. A tutorial to help you on how to upload your files is found in Courselink under the video assignment tab (How to upload Video Assignment tutorial). You can submit each video assignment at any time prior to the individual deadlines.

In addition to the 3 videos for submission, we recommend self and peer assessment of other less critical skills such as hand scrubbing, patient prep and basic suturing which are not being assessed by video assessment.

It is expected that you will arrive at the in person Lab 3 prepared to demonstrate the skills practiced in these video assignments.

Please direct and questions or concerns regarding the video assignments to the course coordinator.
• **ARTICULATE Asepsis Module**

The asepsis ARTICULATE module must be completed once you feel you have mastered all the components and important steps of surgeon and patient preparation and prior to the deadline. This module will walk you through a review of the topics while assessing your knowledge.

• **Suture Mastery List**

The suture mastery list is designed to help direct student learning. Completion of the self-directed ‘Suture Mastery List’ will allow you to practice your suturing techniques in preparation for the practical laboratory sessions. You are expected to practice a series of suture patterns on your DASIE using the surgery website as a reference – you can work in teams (according to COVID restrictions) if you wish. **It is expected that you will arrive at the in person Asepsis Lab 3 prepared to demonstrate the skills listed on the mastery list to one of the instructors by the end of the lab.** You are encouraged to practice in advance with your classmates (possibly online or by sharing videos of your performance) and perform the suture patterns together; this will allow you to ‘critique’ each other’s technique and possibly help each other with any difficulties. COVID permitting, there will be drop in sessions in the clinical skills lab in advance of this lab that you can attend for assistance if you are having trouble with any of the patterns. These sessions will be announced using Courselink. Completed lists should be submitted on Courselink through the dropbox feature prior to the due date.

**Surgery Practical Laboratory Sessions**

**Labs**

Faculty, veterinarians and technicians will be available to teach, provide feedback and to answer any questions during each in-person laboratory session. Supervising faculty and veterinarians will assess each student’s preparation, knowledge of the procedures to be performed and skills demonstrated during the exercise.

**Attendance and preparation for at all in-person labs is mandatory. Assessment for laboratory participation will be in the form of the online quizzes, video skills submissions and mastery list. SCRUBS MUST BE WORN TO ALL LABORATORY SESSIONS.**
You have been provided with scheduled independent study time in advance of the labs to review the relevant material. Please come prepared having watched the videos and reviewed the materials online (Courselink, veterinary surgery website) because we will have limited time to review the material prior to starting the practical component of the lab and there will be too many students to provide one to one help if you are not prepared.

*Bring your own DASIE and instruments to all in-person surgery laboratories. Your DASIE is not required for the dentistry labs.

***You are expected to attend your assigned lab section. If you cannot attend your assigned section, you must switch spots with one of your classmates. Due to the design of the labs we cannot accommodate additional students in the lab sections and make-up laboratory sessions are not possible therefore a missed laboratory will lead to losing the experience. The Course / Lab coordinator will determine what remedial activity will be required of students who miss a lab and have received academic accommodation through the Associate Dean, Students. Students that miss a lab and have not been granted accommodation will not receive any the grades associated with that section.

DENTISTRY

Illinois Dental modules (1-6) to be completed online (6x1%).

Dentistry laboratory sessions will consist of a hybrid model with 5 online modules and two in-person laboratory sessions.

The online modules include:

COHAT~1 hour

Oral Pathology~ 1 hour

Prophylaxis~20 minutes

Radiology and Nerve Blocks~1 hour

Extractsions~20 minutes

On courselink, there will be 2 dental summary sheets to serve as a quick reference. Each module has a list of references if you wish to investigate subjects at your own discretion.

Please note, students will need to finish the online modules prior to the in person labs to
make valuable use of the labs. You will be called upon throughout the labs to answer questions pertaining to the online modules.

**In person laboratories:** 10 students for 1 hour

Lab 1: Introduction to prophylaxis, radiology positioning and local blocks

Lab 2: Introduction to extractions

**Online Assignments:**

There will be 2 graded online, case based assignments that are to be completed 1 week after your last scheduled in-person lab. (2x3%)

### 5.1 Lecture

**Topics:** Introduction to 3510

**References:** Instructor- Brisson

Brief introduction to the course and website and opportunity for questions – *Please review the course outline prior to this session and attempt to log into the dentistry modules*

**Topics:** Lecture 1 & 2

**References:** Instructor- Brisson

Review of surgical instruments and suturing

**Topics:** Lectures 3 & 4

**References:** Instructor- Brisson

Surgical asepsis I & II

**Topics:** Lectures 5 & 6

**References:** Instructor- Oblak
Principles of surgical oncology I & II

Topics: Lectures 7 & 8

References: Instructor- MacIver

Principles of abdominal surgery I & II

Topics: Lecture 9

References: Instructor- Brisson

Exploratory laparotomy

Topics: Lecture 10

References: Instructor- Brisson

Basic organ biopsy techniques

Topics: Lecture 11

References: Instructor- MacIver

Complications of abdominal surgery

Topics: Lecture 12

References: Instructor- Moens

Basic principles of bandaging

Topics: Lecture 13

References: Instructor- Singh

Introduction to minimally invasive surgery

Topics: Lecture 14
References: Instructor- Brisson

Feline and canine ovariohysterectomy

Topics: Lecture 15

References: Instructor- Brisson

Feline and canine castration

Topics: Lecture 16

References: Instructor- Singh

Use of antibiotics in surgical patients

Topics: Lectures 17

References: Instructor- Moens

Orthopedic exam

Topics: Lecture 18

References: Instructor - MacIver

Introduction to fracture fixation and coaptation

5.2 Seminar

Topics: Independent time 1

References: Instructor- Brisson / Joy
Review of Course Outline, courselink and log into online dentistry modules

Topics: Independent times 2-4

References: Instructor- Brisson

Review asepsis, suturing and draping (lecture notes, courselink, veterinary surgery website) in preparation for Asepsis Labs 1-3, video assignments and quizzes.

Instrumentation online study assignment & Quiz 1 [Quiz 1 will close September 25, 2020 at 8:00 PM]

Suture materials, suture patterns & Tips and tricks on suturing online study assignment & Quiz 2 [Quiz 2 will close Monday October 9, 2020 at 8:00 PM]

Principles of asepsis online study assignment & Quiz 3 [Quiz 3 will close Monday October 9, 2020 at 8:00 PM]

Topics: Independent time 5, 6

References: Instructor- Brisson

Review asepsis, suturing and draping in preparation for Asepsis Labs 1-3 and video assignments (lecture notes, courselink, veterinary surgery website)

Topics: Independent times 8, 9, 11

References: Instructor- Joy/Gillan

Complete the Dentistry Online Modules

Topics: Independent time 7, 10

References: Instructor- Joy/ Gillan

Clinical Skills Drop-In Session to review asepsis, suturing, etc.
Independent time 12

References: Instructor- Moens

Online review (Courserlink) of bandaging videos on bandaging.

Independent time 13

References: Instructor- Oblak

Online review (Courserlink) of surgical oncology videos and lab manual.

Independent time 14

References: Instructor - Brisson

Online review (Courserlink & veterinary surgery website) of anatomy, ligature placement and ovariohysterectomy videos in preparation for DASIE model making and spay laboratory. Also review opening and closing the abdominal cavity, opening of surgical packs, asepsis (patient and surgeon preparation) and suturing.

5.3 Lab

Topics: Laboratory 1 (at home): Asepsis + Suturing (2hr at home with online intro) *Review the relevant videos prior to this at-home lab activity / video assignment #1.

This mandatory two-hour session will allow students to experience and practice the steps involved in aseptic surgeon preparation: specifically how to open a gown pack and a pack of gloves steriley, how to perform hand scrubbing, gowning, closed gloving and basic suturing review.

Topics: Laboratory 2 (at home): Asepsis, Draping + Suturing 2 (2hr at home with online intro) *Review the relevant videos prior to this lab activity / video assignment #2.

This mandatory two-hour session will allow students to experience and practice the steps involved in patient preparation: specifically how to perform skin preparation (using a plastic model), how to open a drape and laparotomy sheet pack steriley, and how to perform patient draping with application of a laparotomy sheet (using a DASIE model), and additional suture technique practice.
Topics: Laboratory 3 (in person): Asepsis + Suturing 3 (2hr in person) *Review the relevant videos prior to this lab session and complete video skills assessment #3.

This mandatory two-hour session will put all the tasks learned thus far together and will allow students to experience and practice the following: Open an instrument pack, open a gown and laparotomy sheet pack, open a suture pack, blade and glove pack. The student will perform all the steps involved in surgeon preparation (hand scrubbing, gowning and gloving), final preparation of the patient and patient draping with application of a laparotomy sheet. The student will set up an instrument table, safely install (and eventually remove) a blade on a scalpel handle, practice basic suturing skills (secure square knots in simple interrupted and continuous patterns +/- buried knot) and perform safe disposal of sharps at the end of the lab. The suturing mastery list will be completed during this lab session.

Topics: Laboratory 4 (at home): Surgical Oncology (2hr at home no online contact use the instructions) *Review the relevant video and lab manual prior to this at-home lab session and use the at-home kit materials provided (silicone mass model and biopsy punch).

This mandatory 2-hour session will allow students to learn and practice basic surgical oncology principles and techniques. During the lab, the student will practice identifying skin tension lines and the appropriate direction of closure of skin wounds, discuss and identify fascial planes in various locations and practice incisional and excisional biopsy techniques.

Topics: Laboratory 5: DASIE Ovariohysterectomy (3hr in person) + Model making pre-lab using at-home kit and instructions provided (1hr at home use instructions)

This mandatory three-hour session will allow students to perform all the tasks they have learned thus far (see Asepsis laboratory 3) and in addition will allow students to experience and practice the steps involved in performing a modified 3-clamp ovariohysterectomy using a string and bead model within a DASIE. Each student will attend a 1hr pre-lab session where they will make their own DASIE spay models. This session will help students review and understand the anatomy of the genital tract and the steps involved in the procedure.

Topics: Lab 6 & 7 Dentistry (3h each with online (2h) and in person (1h) components) *Review the relevant lab materials on courselink prior to this lab session.

These 2 mandatory 3 hour labs will allow students to become familiar with dental anatomy, nomenclature, physical exam of oral cavity & head and neck, charting, periodontal disease,
6 Assessments

Assessment for this course will include: 3 asepsis online quizzes (3%), suture mastery list (2%), ARTICULATE Asepsis module (2%), 3 asepsis/suture video assessments based on at home asepsis skills development using the at-home laboratory kits (21%), asepsis and DASIE OVH laboratory participation and written assignment (6%), 6 Illinois dentistry online modules (6%), dentistry laboratory attendance and completion of 2 dentistry assignments (6%), midterm (18%) and final examination (36%). Completion of all quizzes, ARTICULATE Asepsis module, video surgery skills assessments, mastery list, modules, dentistry self assessments and formative assessments are required for successful completion of the course, unless academic consideration has been granted.

For Academic Consideration, please contact the Associate Dean, Students and Academic (ovc.dvmacademics@uoguelph.ca).

Asepsis online computer quizzes must be completed according to the schedule posted on Courselink. There are 3 computer quizzes, worth in total 3% of the final mark. Each quiz must be completed on time with a minimum grade of 70% in order to obtain marks towards the final grade. If a grade < 70% is obtained, the online quiz can be repeated once. Computer quizzes can be completed using the course materials and with classmates as long as everyone involved participates in the thought process. Online quizzes will be in the form of true or false and multiple-choice questions.

Due dates:

Quiz 1: September 25, 2020;
Quiz 2: October 9, 2020
Quiz 3: October 9, 2020.
**ARTICULATE Asepsis module** the asepsis articulate module must be completed prior to the midterm (see below). (2%)

**Due date:** November 8, 2020.

**Surgical Asepsis Video Skills Assessment** submissions must be completed prior to each deadline listed in Courselink. Critical psychomotor skills that relate to patient and surgeon asepsis will be assessed via video submission for grade. Prior to submitting your skills videos, ensure that you have reviewed all the relevant materials (vetsurgery website videos, Courselink videos, lecture notes, and assessment rubrics). Practice the required skills until you feel confident. Then record yourself performing the required skills (Video 1: hand drying, gowning and gloving; Video 2: patient draping and applying a laparotomy sheet; Video 3: subcutaneous closure with buried knots using the DASIE model). Review this video and self-assess / critique using the respective assessment rubrics provided in Courselink under RUBRICS. If you identify flaws, you can re-record your skills performance but do not stress too much over it. Once satisfied, trade videos with a classmate for peer assessment and critique. Return your assessments to allow each of you to further improve your psychomotor skills. When satisfied with your learning and practice, submit a video (same or new recording) of the required skills for assessment and grading. Please ensure the video (quality and framing) allows assessment of the skills required. Three such videos will be required for this course. Videos can be uploaded to Courselink under the video assignment CONTENT tab (using BONGO). A tutorial to help you on how to upload your files is found in Courselink under the video assignment tab (How to upload Video Assignment tutorial). Video files should be named as follows: student number__last name_video#(1-3). Assessment will use the rubrics provided in Courselink and may also include time stamped written or voice comments to allow you to identify and correct missteps. (21% total)

**Due dates:**
Assignment 1: October 25, 2020;
Assignment 2: November 6, 2020;
In addition to the 3 videos for submission, we recommend self and peer assessment of other less critical skills such as hand scrubbing, patient prep and basic suturing.

**Suture Mastery list** must be completed according to the schedule posted on Courselink and submitted prior to the assigned deadline. (2%)

**Due date:** January 17, 2021

**Dentistry online modules:** A passing grade on each of the quizzes for modules 1-6 is required to receive a score for these modules (6x1%). The quizzes can be completed using the module materials and with classmates as long as everyone involved participates in the thought process. Please ensure that you have your login information and start the modules in October. Due to restrictions in the license, these quizzes will only be available from October to February and failure to complete any portion of these modules will result in a grade of 0.

**Due date:** February 14, 2020

**Surgery and Dentistry Laboratory participation and self-assessment** Attendance at in-person labs is mandatory (unless you are sick or have signs of COVID). Asepsis labs 1 & 2, the oncology lab and the DASIE model creation labs will be done at home using the take-home kits, virtual lab introduction, and the online resources provided in Courselink and on the surgery website. Assessments for the asepsis labs 1 & 2 will be in the form of video submissions as per above. In person asepsis skills labs 3 and DASIE ovariohysterectomy (OVH) lab will have a grade assigned based on participation (preparation) and demonstration of skills. Dentistry labs will have an online and an in-person component. There will be 2 graded online, case based assignments that are due 1 week after your last scheduled in
person lab (2x3%).

Midterm (18%) and final examination (36%) will be in the form of: true or false, multiple choice, and short-written answers and will be somewhat proportional to the amount of lecture/lab time devoted to each topic. Examination questions will include reference to material covered in class, in website materials (including pictures and videoclips), during the laboratory session and in course notes. The final examination will be summative (will include materials from the entire course) with twice the weighting for materials presented after the midterm compared to those presented prior to the midterm. Dentistry material will not be assessed during the midterm or final examinations.

Some examinations in this course may use the Respondus Lockdown Browser + Webcam. Students who feel they have a human rights issue with Respondus related to race, gender identification or disability, should consult with either their program counsellor (ovc.dvmacademics@uoguelph.ca), or preferably the University of Guelph Cultural Diversity Advisor (Tameera Mohamed tameera@uoguelph.ca), the Sexual and Gender Diversity Advisor (Jarred Sanchez-Cacnio cacnioj@uoguelph.ca), and/or those in Student Accessibility Services (accessibility@uoguelph.ca) for support in this process. After this consultation, the student should submit a request to ovc.dvmacademics@uoguelph.ca to have alternate invigilation put into place. This would include either a Zoom or Teams invigilation of that student as they complete the examination online. This request must be submitted no later than three (3) business days prior to the examination.

Difficulties in understanding course material should be directed to the instructors who presented the material in question or to the course coordinator as soon as problems are recognized.
Summary of Marks for VETM*3510

Asepsis Online Quizzes (3x1%) = 3%

ARTICULATE Asepsis module = 2%

Suture Mastery List (2%) = 2%

Asepsis Video assessments (3x7%) = 21%

Dentistry Illinois Modules (6x1%) = 6%

Asepsis Lab participation (2%) = 2%

DASIE OVH Lab participation (2%) and pre-lab assignment (2%) = 4%

Dentistry lab participation and assignments (2x3%) = 6%

Midterm = 18%

Final Exam = 36%
Midterm review:

Following the mid-term examination, there will be a three-week period in which the examination can be reviewed. There will not be an opportunity to review the examination outside of this period. To arrange a time to review the examination, please contact the Administrative Assistant to the Faculty and Chair in the Department of Clinical Studies, Vanessa Joy (vjoy@uoguelph.ca).

Midterm resit session:

The course coordinator will determine the format of a make-up examination for those students who miss the midterm, and have been granted academic accommodation through the Associate Dean, Students. The resit session will be scheduled by the Chair.

7 Course Statements

7.1 Administrative

For questions regarding academic consideration, continuation of study, academic misconduct, safety, confidentiality, and experiential learning involving use of animals, please refer to the Phase information on the OVC website.

7.2 Course

To prepare undergraduate veterinary students for Phase 3 surgical lectures and surgical training laboratories and Phase 4 clinical rotations by introducing basic and more advanced surgical concepts and skills.

Instruction will consist of formal lectures (synchronous or asynchronous), self-directed website study, self-directed suture and asepsis exercises, completion of a mastery list, completion of a review ARTICULATE module, and self-directed at-home and in-person practical laboratory sessions.

7.3 Required Safety Training
It is the responsibility of each student to fully review the COVID-19 safety plan on CourseLink for each in-person course activity in this course, and to adhere to all safety protocols that have been prescribed. As well, students must follow the steps below before coming to campus:

1. Complete the COVID-19 Infection Prevention and Control Awareness Training course via CourseLink.

2. For every day that you have an in-person course activity, before you come to campus, complete U of G’s COVID-19 Screening Form. Do not come to campus if the form indicates you should stay home.

7.4 DISCLAIMER

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink on the VETM 3510 page. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

7.5 ILLNESS

Any student with symptoms or known exposure to the COVID-19 virus should inform their instructor and complete the self-declaration form (https://uoguelph.eu.qualtrics.com/jfe/form/SV_8evYmTaJXnDkphP). This form should be submitted to the Associate Dean. Student and Academic (ovc.dvmacademics@uoguelph.ca) to request academic consideration. The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate

7.6 CONTINGENCY PLAN

In the event of a University/College closure due to the ongoing COVID-19 pandemic, the in-person laboratories may need to be canceled or switched to online group lab sessions (if deemed feasible) with additional submission of video assessments. In this case, the percentage marks assigned to in-person laboratory participation and assessments would be assigned to the additional video submissions or added to the final examination.

7.7 Statement on Session Recordings:

By enrolling in a course, unless explicitly stated and brought forward to their instructor, it is assumed that students agree to the possibility of being recorded during lecture, seminar or other “live” course activities, whether delivery is in-class or online/remote.

If a student prefers not to be distinguishable during a recording, they may:
1. turn off their camera
2. mute their microphone
3. edit their name (e.g., initials only) upon entry to each session
4. use the chat function to pose questions

Students who express to their instructor that they, or a reference to their name or person, do not wish to be recorded may discuss possible alternatives or accommodations with their instructor.

7.8 Netiquette Statement Regarding Online Behaviour:

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else’s work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments
- Posting or selling course materials to course notes websites
- Having someone else complete your quiz or completing a quiz for/with another student
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your user name and password
- Recording lectures without the permission of the instructor

8 University Statements
8.1 Email Communication

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

8.2 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 instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-reqchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared
responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website https://www.ridgetownc.com/services/accessibilityservices.cfm

8.6 Academic Integrity

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 encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.
8.8 Resources
The Academic Calendars are the source of information about the University of Guelph’s procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars
https://www.uoguelph.ca/academics/calendars

8.9 Disclaimer
Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (https://news.uoguelph.ca/2019-novel-coronavirus-information/) and circulated by email.

8.10 Illness
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