

Course Syllabus

Course Overview

This 0.5 credit (7-contact hour) course is intended to provide the novice surgeon with detailed instructions on the proper use of the surgical instruments commonly encountered in soft tissue surgery. The course includes overviews of scalpels, thumb forceps, scissors, surgical clamps, and needle holders. This course was peer-reviewed for Veterinary Internet Content Exchange.

Prerequisites

There are no prerequisites for enrolling in this course. The course is designed to support the following academic uses:

- 1st year veterinary students as an aid to learning safe and proper instrument use during anatomy dissection laboratories
- 2nd and 3rd year veterinary students to support junior surgery courses and laboratories
- 4th year veterinary students as a refresher during clinical rotations

Learning Objectives for the Course

Upon completing this course, students will be able to:

- Identify the common classes of scalpels, thumb forceps, scissors, surgical clamps, and needle holders, based on their distinguishing features
- State the appropriate surgical applications for each of the common surgical instruments covered in the course and know the advantages and limitations of each instrument
- Demonstrate how to grip each instrument using the proper finger, hand, and arm positions
- Demonstrate how to use each of the instruments during surgery in an accurate, secure, and consistent manner
- Explain the general elements necessary to create an ideal skin incision
- Demonstrate the proper use of needle holders for creating a forehand stitch

Organization

This course is presented in eight modules. The first module introduces the course and its creators. The next five modules are composed of a series of topics, each focusing on various aspects related to using scalpels, thumb forceps, scissors, surgical clamps, or needle holders. The seventh and eighth modules are a course evaluation and an optional supervised laboratory, designed to assist instructors who wish to use the Basic Instrument Use course to support their onsite training programs. This laboratory can be set up to include opportunities for both student mentoring and demonstration of core surgical skill mastery.

For optimal learning, it is recommended that students follow the suggested learning path laid out in the course menus. However, students can access any section of the course at any time. To facilitate long-term retention of the course materials, students are encouraged to pace themselves as they work through the course materials, allowing sufficient time to integrate and apply the information within each module before moving on.

Module 2:

Scalpels

Module Objectives

- Identify the types of scalpel blades commonly used in veterinary surgery and describe their surgical applications.
- Demonstrate the correct method to safely arm, disarm, and pass the scalpel to an assistant.
- Demonstrate the three different scalpel grips, state when the different grips are used in surgery, and describe the advantages and disadvantages of each scalpel grip.
- Identify the three main methods for incising tissue, state the appropriate surgical applications for each method, and describe the major advantages and disadvantages of each cutting method.
- Demonstrate the proper method for performing a slide cut, press cut and scrape cut.
- Explain the general elements necessary to create an ideal skin incision and demonstrate each of the steps involved in creating an ideal skin incision.

2.0 hrs



Module 3:

Thumb Forceps

Module Objectives

- Identify the four most common types of forceps used in veterinary surgery and describe their surgical applications.
- Explain the physical characteristics that distinguish tissue forceps from dressing forceps.
- List the common ways that thumb forceps are used in veterinary surgery.
- Describe how thumb forceps, when used improperly, can cause tissue trauma.
- Demonstrate the proper grip and hand, wrist, and arm “posture” for efficient use of thumb forceps during routine suturing.
- State the purpose of “stowing” forceps and explain when this maneuver is used during surgery.
- Demonstrate how to transition forceps between the “stow” position and the “use” position.
- Describe how thumb forceps are used to help needle penetration and extraction from tissue during suturing.

1.5 hrs



Module 4:

Scissors

Module Objectives

- Identify the common types of scissors used in veterinary surgery and describe their surgical applications.
- Explain the physics of how scissors cut and how this translates into surgical applications when cutting tissue.
- Explain why scissors come in right- and left-handed versions.
- Explain the main advantages and disadvantages of using scissors rather than a scalpel blade to cut soft tissue.
- Identify the three ways that scissors can be used to cut tissue.
- Demonstrate the proper method to grip scissors and explain why scissors are gripped in this manner.
- Demonstrate the hand and arm positions used to cut tissue with scissors.

Module 4:

Scissors (continued)

- Demonstrate the proper method to pass scissors, including curved scissors, to another person for immediate use in surgery.
- Demonstrate the proper method to perform the scissor cut, push cut, and suture cut.
- Describe how scissors can be used for blunt dissection, and list the indications for blunt dissection.

1.5 hrs



Module 5:

Surgical Clamps

Module Objectives

- Identify the major classes of surgical clamps used in veterinary surgery.
- Describe how the jaws of surgical clamps differ from one another to suit their intended surgical applications.
- Recognize crushing clamps and identify acceptable circumstances in which they can be used during soft tissue surgery.
- Recognize atraumatic surgical clamps and identify acceptable circumstances in which they can be used during visceral surgery.
- List the common types of hemostatic forceps and describe how they are chosen for clamping blood vessels and pedicles.
- State the advantages of longitudinal versus transverse ridges with regard to vessel clamp security when using the tip and jaw clamp techniques.
- State the applications for using right-angled forceps for tissue dissection and suture passing.
- Demonstrate the proper hemostatic techniques for jaw and tip clamping and identify the appropriate circumstances in which to use these clamping techniques during surgery.
- Demonstrate the two methods for releasing surgical clamps from tissue and explain the advantages of each method.
- Demonstrate the proper technique to obstruct hollow organs with crushing clamps.
- Demonstrate the proper technique to use atraumatic clamps to prevent leakage during visceral repair.

1.0 hr



Module 6:

Needle Holders

Module Objectives

- Identify the types of needle holders commonly used in veterinary surgery and describe their surgical applications.
- Explain the function of needle holders in the operating room.
- Demonstrate the four types of hand grips used for needle holders and explain their advantages and disadvantages.
- Demonstrate how to properly grasp a needle in needle holders, and explain how shifting the position of the needle can help in driving needles through various types of tissue.
- Explain how the proper use of needle holders can improve efficiency in the operating room.
- Demonstrate how to skillfully perform a forehand stitch using the proper technique.

1.5 hrs

Methods

This course utilizes a variety of multimedia instructional methods such as narrated video flipbooks, illustrations, interactive practice exercises, hands-on independent activities, and an optional supervised laboratory guide. Students are responsible for all of the material presented within the course, regardless of the format in which the material is presented.

At the end of each module, students will find printable course notes that provide a concise text summary of all the pertinent information presented within the module. Students can print and use these course notes at any time during the course. Students may also wish to retain these course notes for future reference (e.g. studying for board examinations).

Grading

You can view a summary of your course grade at any time by clicking the Grades link, located under the Administration section on the left column of the course screen.

To help you prepare for the graded exams, a series of practice exercises with detailed feedback are provided within each module. These ungraded practice exercises are designed to help you determine how well you are mastering the materials and which areas you may need to review before moving on in the course.

Supplemental Texts

There are no required textbooks for this course. However, for additional information on the subjects covered within this course, please refer to the following list of suggested resources:

Anderson RM, Romfh RF. *Technique in the Use of Surgical Tools*. Appleton-Century-Crofts, New York, 1980.

Knecht CD, Allen AR, Williams DJ, Johnson JH. *Fundamentals in Veterinary Surgery*. 3rd ed. WB Saunders, Philadelphia, 1987.

Nealon TF. *Fundamental Skills in Surgery*. 2nd ed. WB Saunders, Philadelphia, 1971.

Toombs JP, Clarke KM. *Basic Operative Techniques*. In Slatter editor, 3rd ed. Textbook of Small Animal Surgery, 199-222, 2002.

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