

CLINICAL PATHOLOGY MENTORSHIP



VM 22700

CRITERIA HANDBOOK
AND LOGBOOK

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NOTE THE FOLLOWING DUE DATES FOR THE TASKS ABOVE:

<i>Fall and Spring Semester</i>	11:59 pm EST Thursday of week 1 - Task 1
	11:59 pm EST Thursday of week 4 - Tasks 2-4
	11:59 pm EST Thursday of week 7 - Tasks 5-7
	11:59 pm EST Thursday of week 10 - Tasks 8-10
	11:59 pm EST Thursday of week 12 - Tasks 11-12
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	11:59 pm EST Thursday of week 6 - Tasks 5-7
	11:59 pm EST Thursday of week 8 - Tasks 8-10
	11:59 pm EST Thursday of week 10 - Tasks 11-12

Incomplete grades will not be assigned for mentorships at the end of the semester. Grade penalties will be assessed for tasks submitted after the due date. Resubmission due dates will be set by the instructor as required.

All tasks may be submitted prior to due dates, and students are encouraged to do so. However, Tasks One and Two must be successfully completed before submitting any other tasks.

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Animal Use Guidelines

The student shall abide by the following guidelines when performing mentorship tasks:

1. All animals used for demonstration of mentorship skills must be appropriately restrained by another person, for the safety of the patient and the student.
2. A mentorship task may be performed only once on a single animal.
3. A student may perform a maximum of ten (10) minimally invasive tasks (denoted by one asterisk) on a single animal within a 24-hour period.
4. A student may perform a maximum of three (3) moderately invasive tasks (denoted by two asterisks) on a single animal within a 24-hour period.
5. When combining tasks, a student may perform a maximum of five (5) minimally and three (3) moderately invasive tasks on a single animal within a 24-hour period.
6. Tasks denoted with no asterisks do not involve live animal use.

For example, a student might perform the following tasks on an animal in a single day:

1. Restrain a dog in sternal recumbency*
2. Restrain a dog in lateral recumbency*
3. Restrain a dog for cephalic venipuncture*
4. Restrain a dog for saphenous venipuncture*
5. Restrain a dog for jugular venipuncture*
6. Administer subcutaneous injection**
7. Administer intramuscular injection**
8. Intravenous cephalic injection – canine**

Failure to comply with the Animal Use Guidelines may result in failure of the Clinical Mentorship.

STUDENT INFORMATION

GOALS OF VM 22700

CLINICAL PATHOLOGY MENTORSHIP

Working with a veterinary care facility, the student will perform tasks under the supervision of a clinical mentor (veterinarian or credentialed veterinary technician).

In order to achieve the goals for this Clinical Mentorship, the tasks must be performed to the level of competency as outlined by the criteria for each task. ***The submitted videos should demonstrate proficiency in performing skills that have been learned and practiced until the student feels comfortable. While occasional guidance from the mentor is acceptable during the learning phase, video submissions must show that the student can execute the task independently, smoothly, and competently without excessive direction or outside assistance.*** All tasks must be performed without reliance on the Task Verification Form or other written sources

during the video. Video demonstration of each skill should reflect the ability to perform the skill autonomously, as would be expected in clinical practice.

The student is responsible for providing documentation for each task as defined by the *Materials Submitted for Evaluation and Verification* section on each task.

In addition to the documentation, the Clinical Mentorship site supervisor will verify that the student performed the task under their supervision.

Final approval of successful performance and completion of the Clinical Mentorship will be made by the Purdue University instructor in charge of the Clinical Mentorship. This approval will be based upon the documentation provided by the student.

The Purdue University instructor in charge has the option to require additional documentation if, in their judgment, the student has not performed and/or documented the task to the level set by the Criteria.

Documentation of completed tasks is essential to validate the educational process and insure that the performance of graduates of the Veterinary Nursing Distance Learning Program meets the standards of quality required by the Purdue University College of Veterinary Medicine faculty and the American Veterinary Medical Association accrediting bodies.

Essential criteria for each skill are denoted by **(critical)** and must be included in the performance of the skill in order for the task to be approved. Failure to demonstrate any **(critical)** steps clearly will result in resubmission of the task. Critical components include actions or omissions that would compromise patient or personal safety, cause potential immediate harm to the patient or personnel, demonstrate a serious breach of infection control protocols, show a fundamental lack of knowledge of performance of the task, or fail to demonstrate required AVMA essential skills.

Live narration of videos is expected for all submissions. If a student wishes to submit a video with voice-over they must contact the instructor prior to making the video to discuss whether an exception may be made. Certain tasks require live narration, and exceptions will not be made for those.

Continuous, unedited video is preferred and is required for some tasks. Required continuous, unedited video will be noted in the task description. If video is not continuous, the student must ensure that all criteria are demonstrated in the video clips.

CONTACT PERSONS

Questions regarding the overall Clinical Mentorship process should be directed to:

Pam Phegley, BS, RVT
Clinical Mentorship Coordinator
(765) 496-6809
phegley@purdue.edu

Questions regarding this mentorship (tasks, due dates, etc.) should be directed to the instructor for this mentorship course.

PRE-REQUISITES FOR VM 22700 CLINICAL PATHOLOGY CLINICAL MENTORSHIP

Agreements

Because of legal, liability and AVMA accreditation issues, the following Forms must be submitted *prior to beginning* the Clinical Mentorship:

1. Clinical Mentorship and Facility Requirement Agreement: This form must be completed by the facility owner or designee
2. Clinical Mentorship Supervisor Agreement: This form must be completed by the licensed DVM or credentialed veterinary technician that will be your supervisor
3. Student Acknowledgement Form: This form is completed by the student
4. Professional Liability Insurance Coverage: This form is completed by the student

Links to these Forms are available on the VNDL website.

Please note the following:

- There is a Clinical Mentorship and Facility Requirement Agreement specific to each clinical mentorship course.
- More than one mentorship supervisor may sign the mentorship logbook. Each mentorship supervisor must be either a DVM or a credentialed technician and must complete a separate Clinical Mentorship Supervisor Agreement.
- **If you are registering for multiple clinical mentorship courses in a semester AND you are only using ONE mentorship supervisor, then only one Clinical Mentorship Supervisor Agreement needs to be submitted.**

Failure to complete and submit the listed Forms and/or non-payment for Student Professional Liability Insurance Coverage will prevent the student from enrolling in the Clinical Mentorship.

Insurance

Two types of insurance are recommended or required for the student working in a Clinical Mentorship.

Health Insurance is highly recommended to cover the medical expenses should the student become injured while on the job. It is the student's responsibility to procure such insurance.

Liability Insurance is required to protect the student in the event of a suit filed against the student for acts he/she performed while in the Clinical Mentorship.

Each VNDL student is required to purchase, for a nominal fee, Professional Liability Insurance through Purdue University. The fee covers from the time of initiation of coverage until the subsequent July 31st.

Students will not be enrolled in Clinical Mentorships until the Professional Liability Insurance is paid, and the student is covered by the policy.

WHAT TO LOOK FOR IN A MENTORSHIP FACILITY

When evaluating a facility for clinical mentorships, the student should thoroughly research the site. It is strongly suggested to visit the site if not currently working there. This experience is a chance to begin to apply the wealth of knowledge and skills acquired and developed to this point in the veterinary nursing education. The following are points of discussion or questions to consider when evaluating the site (RVT includes any credentialed veterinary technician):

- ï Does the site currently have credentialed veterinary technicians/nurses on staff?
- ï Are there any boarded DVM specialists or VTS RVTs on staff?
- ï What is the role of the technician/nurse versus other members of the staff (such as veterinary assistants)?
- ï What is the overall size of the staff (professional and paraprofessional staff)?
- ï Is the site an accredited practice or facility (AAHA, ALAC, etc.)?
- ï Has the site hosted a VNDL student in the past?
- ï Does the staff seem receptive to hosting a student?
- ï Is the site located in a safe and easily accessible location? Are there geographical considerations?
- ï Is this also an employment opportunity?
- ï Ask the supervisor:
 - ï What are their specific goals for the student?
 - ï Have they ever been a supervisor before for a veterinary technician/nursing student?
 - ï Who else at the site may be involved in supervision?
 - ï Do they have any concerns for the legal allowances in which the student may perform certain tasks?

It is strongly recommended that the student show potential mentorship supervisor(s) examples of mentorship logbooks, so they are aware of what the student will need to accomplish in this facility. The discussion should include that most tasks will require videos of the student performing skills, and how this will be accomplished. A student may have multiple supervisors (either DVM or credentialed technician), and one must be present any time the student is performing skills for a clinical mentorship. Supervisors sign Task Verification forms which state that they observed the student as they performed each task.

Mentorship supervisors act as coaches and must be present to ensure the safety of the patient and personnel. They are not involved in evaluation of skills; this is done by Purdue instructors.

SELECTING THE CLINICAL MENTORSHIP SITE FACILITY REQUIREMENTS

You must visit the Clinical Mentorship Site and determine if the following supplies and equipment are readily available to you for use during your Clinical Mentorship. The mentorship supervisor will verify the availability of required items by completing the Mentorship and Facility Requirement Agreement.

The veterinary care facility must be equipped with the following equipment/supplies:

Microscope* and Related Supplies

- Binocular
- 10X oculars
- Objectives
 - 10X (low power)
 - 40-50X (high dry power)
 - 100X (oil immersion)
- Mechanical stage
- Functional and properly aligned condenser and diaphragm
- Light source of at least 20 watts
- Immersion oil
- Lens paper
- Lens cleaning solution

*NOTE: All parts of the microscope should be clean, functional, properly adjusted and aligned. We highly recommend, if the microscope has not been professionally serviced within the last six (6) months and/or is in a questionable state of repair, it be professionally serviced. Microscopes which are in a state of disrepair, out of adjustment, or dirty internally or externally will create difficulties for the student in providing accurate results.

Urinalysis

- Exam gloves
- Centrifuge appropriate for tubes and centrifuging urine
- Conical centrifuge tubes
- Urine chemistry test strips (minimum tests: pH, glucose, ketones, bilirubin, blood, protein)
- Frosted-end glass microscope slides
- Coverslips
- Stain (optional) NMB or Sedi (type) stain
- Disposable pipettes
- Refractometer (with total protein and specific gravity scales)
- Test tube rack

Hematology Instruments and Supplies

- Exam gloves
- Automated hematology analyzer with appropriate supplies capable of providing:
 - Red blood cell counts
 - White blood cell counts + individual cell or composite differential
 - Platelet counts
 - Hematocrit
 - Hemoglobin (may be stand-alone instrument or a function of the automated hematology or chemistry analyzer)
- Microhematocrit (PCV) centrifuge
- Microhematocrit (PCV) tubes, plain
- Microhematocrit tube clay sealant

- Microhematocrit reader
- Refractometer (with total protein and specific gravity scales)
- Frosted-end glass microscope slides
- Quick stain (ex. Diff-Quik®)
- EDTA blood collection tubes (appropriate for patient size)
- Laboratory wipes
- Small, plain test tubes
- Hand tally (single-digit and/or multi-key differential counter) optional

Clinical Chemistry Instruments and Supplies

- Exam gloves
- Automated chemistry analyzer with appropriate supplies capable of providing:
 - BUN, glucose, and common enzymes
- Serum blood collection tubes (appropriate for patient size)
- Anticoagulated blood collection tubes (appropriate for patient size)
- Centrifuge appropriate for the serum and plasma blood collection tubes

Coagulation

- Exam gloves
- Equipment, supplies and materials to perform **ONE** of the following tests:
 - Buccal bleeding time
 - Lancet
 - Timer
 - Filter or blotting paper
 - Roll gauze
 - Activated clotting time (ACT) (automated OR ACT tube test)
 - Automated ACT
OR
 - ACT test tubes
 - Thermostatically-controlled water bath or heating block
 - Timer
 - Automated Prothrombin time (PT)
 - Automated Activated Partial Thromboplastin Time (APTT)
 - Fibrinogen Assay (automated OR heat precipitation)
 - Automated fibrinogen and
OR
 - Thermostatically controlled heating block or water bath
 - Refractometer
 - Timer
 - Microhematocrit tube centrifuge
 - Microhematocrit tubes
 - Microhematocrit tube sealant

Crossmatch

- Exam gloves
- Commercially available **crossmatch** kit (ex. RapidVet®-H companion animal crossmatch or Alvedia crossmatch - **must be a crossmatch kit, not a “blood type” kit**)
OR
- Traditional crossmatch:
 - Phosphate-buffered saline (PBS)
 - Plastic, conical bottom, 12-mL tubes
 - EDTA blood collection tubes
 - Plain, red-top tubes (Note: serum separator tubes are not appropriate for this procedure)
 - Centrifuge
 - Disposable pipettes

- Frosted-end glass microscope slides
- Coverslips
- Microscope (see previous requirements)
- Thermostatically-controlled heating block or water bath (optional)

Cytology

- Exam gloves
- Sterile, 6" cotton-tip swabs
- Quick Stain (ex. Diff-Quik®)
- Frosted-end glass microscope slides
- Sterile saline
- Sterile vaginal speculum (optional; if used, the speculum must be the appropriate size for the patient)
- Sterile lubricant
- Mild non-irritating soap for vaginal cytology patient prep (optional)

Patient Requirements

It is essential that the student perform the designated tasks on the same sample, when specified, so that related values may be verified when the submission is evaluated.

- Urinalysis: one patient, any species
- Hematology: one patient, any species
- Normal differential: one **healthy** patient, any species
- Clinical chemistry: one patient, any species
- Abnormal differential: one **pathologic** patient, any species
- Coagulation: appropriate patient for the test performed
- Crossmatch: one canine donor and one canine recipient
- Ear cytology: one patient, any species, **with ear pathology**. **Do NOT use patients that have been treated in the past 48 hours with topical ear medication**
- Vaginal cytology: one female canine patient (intact female preferred)

SELECTION OF THE CLINICAL MENTORSHIP SUPERVISOR

The Clinical Mentorship Supervisor is the person who will sign your Logbook and verify performance of tasks at the Clinical Mentorship site. This person must be a credentialed veterinary technician (have graduated from an AVMA accredited program or met State requirements for credentialing as a veterinary technician) or a licensed veterinarian.

An individual who claims to be a "veterinary technician" but has not met the criteria for credentialing above is not eligible to be mentorship supervisor.

The individual is not considered to be an employee of Purdue University when acting as your Clinical Mentorship supervisor.

Each Clinical Mentorship Supervisor must complete a *Clinical Mentorship Supervisor Agreement*. These agreements must be submitted prior to beginning the Clinical Mentorship. Multiple supervisors may be used for documentation of mentorship tasks. Each supervisor must complete a separate agreement.

Should the Clinical Mentorship Supervisor change during the course of the Clinical Mentorship, the student will need to have the new supervisor complete a *Clinical Mentorship Supervisor Agreement* and submit to the Purdue VNDL office.

ALL TASKS PERFORMED FOR A MENTORSHIP SHOULD BE OBSERVED IN PERSON BY A SUPERVISOR FOR WHOM DOCUMENTATION HAS BEEN SUBMITTED

CRITERIA HANDBOOK AND LOGBOOK

This Criteria Handbook and Logbook contains the list of tasks that must be successfully completed in order to receive credit for this Clinical Mentorship. You are expected to have learned the basics of how, why, and when each procedure is to be done from the courses listed as pre-requisites for this Clinical Mentorship. This booklet contains the directions and forms that must be followed and completed in order to meet the standards set for successful completion of this Clinical Mentorship.

Please read each component of each task carefully before doing the task to minimize the number of times you have to repeat the task. The components of each task are summarized:

Goal – Describes the ultimate outcome of the task you will perform.

Description – Lists the physical acts that you will perform, and under what conditions these acts will be completed.

Criteria – Lists specific, observable, objective behaviors that you must demonstrate for each task. Your ability to demonstrate each of these behaviors will be required in order to be considered as having successfully completed each task. Essential criteria for each skill are denoted by **(critical)** and must be included in the performance of the skill in order for the task to be approved. Failure to demonstrate any **(critical)** steps clearly will result in resubmission of the task.

Number of Times Task Needs to be Successfully Performed – States the required number of times to repeat the tasks. The patient's name and the date each repetition of the task was performed must be recorded on the Task verification form.

EACH REQUIRED REPETITION OF THE TASK MUST BE PERFORMED ON A DIFFERENT ANIMAL. You cannot use the same animal to do all of the repetitions of a task. However, you can use the same animal to perform different tasks. In other words, you can't do three ear cleanings on the same animal, however, you can do an ear cleaning, an anal sac expression, and a venipuncture on the same animal.

Materials Submitted for Evaluation and Verification – These specific materials, which usually include video or other materials, must be submitted to demonstrate that you actually performed the task as stated. Each evaluation states specifically what must be shown in the submitted materials.

It is recommended that the video materials document all angles of the procedure. The purpose of the video and other material is to provide "concrete evidence" that you were able to perform the task to the standard required.

Pre-planning the videos will help reduce the need to resubmit tasks. The student should narrate the video as they work, explaining what they are doing and why. This helps the evaluator follow the thought process and clarify what is seen on the video. The student's face must be shown at some point in every video to verify their identity. The name and/or number of the task should be either stated at the beginning of the video or embedded (written) into the video itself.

Note on microscopic photograph submissions: The course instructor for this Clinical Mentorship has the option to request further documentation if the submitted materials do not clearly illustrate the required tasks.

You will be required to submit photographs of your microscopic fields for tasks 3, 6, 8, 11, and 12. If the photographs are not sufficient to evaluate the completion of the task, you may be asked to repeat the task on a different patient. This validation is essential to help the Purdue VNDL meet AVMA accreditation criteria. Therefore, it is essential that you follow the evaluation and validation requirements. Further instructions on how to take photographs of a microscopic field are provided on the course website.

Task Verification Forms – Each task has a form that must be completed and signed by the Clinical Mentorship Supervisor.

Supplementary Materials – Logs, written materials, photographs, or other forms/documentation may be required for specific tasks. Be sure to read the materials to be submitted for evaluation section very carefully and return all documented evidence as prescribed.

COMPLETION OF THE CLINICAL MENTORSHIP

Mentorship logbooks include due dates for sets of tasks. Each set must be submitted by the deadline listed in the logbook. Late submissions will incur a grade penalty. Incomplete grades will not be assigned for mentorships at the end of each semester.

Feedback will be posted to the Brightspace assignment following review of each task. As necessary, instructors may require resubmission of some tasks. When feedback is posted, due dates for resubmissions will be given. ***It is crucial that students with pending feedback set their Brightspace to notify them when feedback and scores are posted, so this information is received in a timely manner.***

Final approval of successful performance and completion of the Clinical Mentorship will be made by the Purdue University instructor in charge of the Clinical Mentorship based upon the documentation provided by the student.

Upon successful completion of all tasks in the clinical mentorship course, a grade will be assigned by the course instructor based upon the documented performance of the tasks.

Note: A student who is dismissed from their mentorship facility may fail the course and may be dismissed from the program.

Task verification forms and other written materials should be submitted in ***Assignments*** in Brightspace. Task Verification forms are due by the task due date in order for each task to be complete. You must assign the forms and any other supplemental paperwork required for the tasks, to the correct course assignment in order for the instructor to view them.

Videos should be submitted in ***Assignments*** in Brightspace. This method of online submission does not limit how much you put on, is no cost to you, and automatically archives. You must assign the videos to the correct course assignment in order for the instructor to view them.

Patient proof of rabies vaccination should be submitted in ***Assignments*** in Brightspace for all patients used for mentorship tasks by unvaccinated students. This is due by the task due date. Patient ID, age, date of vaccination, and either type of vaccine (1- or 3-year) or due date for booster must be shown.

OSHA Compliance should be demonstrated in videos and photographs submitted. The student should always be aware of workplace safety and compliance. Violations such as human food and drink in hospital areas, unlabeled secondary containers, lack of PPE, etc. will be noted and may result in point deductions or task resubmission.

Using Kaltura for Video Assignments

Kaltura is a secure streaming service that Purdue offers for faculty, staff, and students. Videos uploaded to an assignment via Kaltura will only be accessible to instructor(s) within the course.

Step 1: Set Video Type on Your Device

Confirm your device is recording in a format accepted by Kaltura; common formats include:

- .MOV/.MP4/.M4V • .WMV
- .AVI
- .WEBM

Kaltura cannot accept the HEVC video format.

iPhone/iPad:

- *Click* on **Settings->Camera->Formats**
- *Change* the format to **Most Compatible**.

Android:

- In your camera application's settings, *change* the video recording format to **MOV, M4V, or MP4**.

Desktop/Laptop:

- Depending on your recording application, you will need to save your video recording as a common video format (such as .mp4, .mov, or .m4v).

Step 2: Allow your Browser to use Pop-Up Windows

Confirm your browser has pop-ups enabled. Kaltura will pop open a window for you to upload your video. Use the *Help* feature in your preferred browser if you need assistance in enabling pop-up windows.

If you do not allow pop-up windows on your browser, you will not be able to upload videos.

Step 3: Ensure You Have a Stable High-Speed Internet Connection

Confirm you have a **stable** internet connection; if you are on a connection that can disconnect on a regular basis your upload may be cancelled. Additionally, you will need to have a **high-speed** connection. Videos may have large file sizes, and a slow connection may result in your video taking a very long time to upload. If you need a stable and fast internet connection but do not have one at home, consider using public wifi at a library or coffee shop.

Step 4: Uploading Your Task Verification Form (TVF)

You must upload your TVF at the same time that you upload your video.

- *Open* the assignment in Brightspace

- *Click* on the “**Add a File**” button. A dialogue box will open allowing you to select the TVF file to upload from your device.

Step 5: Uploading Your Video

Once you have uploaded your TVF, you can upload your video. Scroll down on the page to the Comments area.

- *Click* on the **Insert Stuff** icon on the text editor.
- On the **Insert Stuff** menu that opens, *click* on **Add Kaltura Media**.
- On the **Insert Stuff** window, *click* the **plus** button. On the menu that opens, *click* **Media Upload**.
- The **Upload Media** window will open. *Click* on **Choose a file to upload** to select a file on your computer, or *click and drag* the video file into the box.
- Depending on your internet connection speed and the file size, it may take a few minutes to upload the file. **Allow the file to upload completely and do not close the window.**

You may alter the name of the file and add a description.

Once the file is uploaded and any name or description changes have been made, *click*

</> Save and Embed to save the video to Kaltura.

- If your video has processed, you may see a preview. Otherwise, you may see an animation that your video is still processing. Even if the video is still processing, you can still submit the video. *Click* **Insert** to add the video to the assignment or discussion
- Your video will be added to the text box. *Click* **Submit** to turn in your assignment.
- You may confirm your submission by clicking on the link to the assignment or discussion and seeing if you can view the video.

For Support

Contact the PVM Instructional Design team at pvmit@purdue.edu for assistance.

CLINICAL MENTORSHIP TASKS

INTRODUCTION TO ESSENTIAL TASKS AND CRITERIA

Before starting each task:

1. Read the Goal, Description, Criteria, and Materials to be Submitted for Evaluation and Verification. Understand what is expected of you for each task.
2. Make sure you have whatever equipment and supplies you need to document the task. Pay particular attention to the details of what needs to be documented and submitted.
3. Make sure you obtain appropriate permissions where necessary. Please inform the facility’s owner/manager of your activities. A good relationship with the veterinarian in charge is key to having a positive Clinical Mentorship experience.

After performing each task:

4. Label all items so that the materials you submit for evaluation and validation at Purdue are identified as your submission.
5. Label all videos posted to Brightspace with your last name and the task number. For example, "Phegley Task 2" or "Phegley Task 2 resubmission".
6. Submit all materials to Purdue by the deadlines listed in the course syllabus.

1. VIDEO VERIFICATION OF REQUIRED EQUIPMENT AND SUPPLIES

Goal: Ensure that the student will have access to all equipment and supplies necessary to complete the skills in this course.

Description: The student will provide a narrated video showing equipment and supplies specific to this mentorship, to verify that required items are available to them and adequate for completion of tasks in their facility.

Criteria: The student introduced the video and showed their face clearly.

The student walked through the facility's laboratory area(s) and showed the following clearly:

- Microscope
- Refractometer
- PCV card and/or circle reader
- Centrifuge
 - Show the centrifuge(s) that will be used for the tasks in this course, including the microhematocrit centrifuge
- Automated hematology analyzer
- Automated chemistry analyzer

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task Verification Form for Video Verification of Required Equipment and Supplies, signed by the Clinical Mentorship supervisor.
2. One video showing the student as they introduced themselves and walked through the facility's laboratory area(s), showing the listed items clearly. The student narrated the video live as they showed items.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student will have access to the items shown, for tasks in this course.

Signature of Clinical Mentorship Supervisor: _____

2. MICROSCOPE USE, CARE, AND CLEANING

NOTE: This task must be completed and submitted for evaluation before beginning the remaining tasks. It is crucial that a functional and properly equipped microscope is available to the student for completion of the tasks in this mentorship.

Goal: To identify, demonstrate and explain the function of the parts of a microscope, and to clean it properly.

Description: The student accurately identified, demonstrated, and explained the function of the parts of the microscope and demonstrated the cleaning procedure.

Criteria: The student accurately identified and explained, using correct terminology, the function of the following: **(critical)**

- Make (manufacturer) and model of the microscope
- Oculars, including power of each
 - Focus adjustment ring (if so equipped)
 - Interpupillary distance adjustment device
- Nosepiece/Turret
- Objectives, including power
 - Scanning (if so equipped)
 - Low power
 - High dry
 - Oil immersion
 - Other (specify)
- Fine and coarse focus adjustment knobs
- Stage, including mechanical stage adjustment device(s)
 - Left and right adjustment device
 - Forward and back adjustment device
- Condenser, including
 - Vertical adjustment device
 - Horizontal control lever (iris diaphragm) adjustment device
- Field Diaphragm
 - Iris adjustment lever (if so equipped)
- On and off light switch
 - Rheostat control (if so equipped)
 - Location of light source (bulb)

The student demonstrated and described verbally the process of viewing a slide including adjustments of the microscope. The following must be included, in the proper order for the microscope used: **(critical)**

- Positioning of the slide on the stage
- Adjustment of the interpupillary device
- Adjustment of ocular focus ring (if so equipped)
- Positioning of each objective, lowest to highest power
- Positioning of the condenser, condenser (iris diaphragm) lever, light rheostat and field diaphragm in relation to each objective in use with this microscope
- Coarse and fine focus adjustment knobs

Starting at the oculars and ending at the light sources, the student cleaned the microscope so the field of view with each objective was debris-free. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for microscope use, care, and cleaning signed by the clinical mentorship supervisor.
2. One video, narrated by the student, that clearly shows the parts of the microscope and the student identifying, describing the function, and describing the use, care, and cleaning of the parts.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

3. URINALYSIS

Goal: To properly and accurately perform, read and record results of a urinalysis, including physical, chemical and microscopic observations.

Description: The student, using a properly collected fresh urine sample, will accurately perform, read and record findings for a urinalysis.

Criteria: The student checked the calibration setting and cleanliness of the refractometer, identifying the scale and solution used to check calibration setting, and cleaned and/or adjusted if necessary. **(critical)**

While wearing exam gloves, the student verbally described the physical properties of the urine (color, clarity, volume, specific gravity with a refractometer, foam, odor) and reported results using proper units of measurement. **(critical)**

The student verbally identified the manufacturer and brand of chemistry strips used and/or automated reader if used.

The student followed the manufacturer's protocols for and described verbally the chemical properties of the urine, and reported the results using proper units of measurement. **Note: the student may place drops of urine onto the strip or dip the strip directly into the urine.** **(critical)**

The student prepared the urine for centrifugation. **(critical)**

The student balanced the centrifuge with a balance tube or another patient tube and secured the centrifuge lid and cover. **(critical)**

The student set and verbally identified the appropriate centrifugation time (and speed if applicable).

After the centrifuge stopped, the student removed the tube, poured off the supernatant, mixed the sediment by gently flicking the bottom of the tube with a finger, transferred a drop of the sediment to a microscope slide with a pipette, and placed a coverslip on top to evaluate underneath the microscope. **(critical)**

The student subdued the light of the microscope by partially closing the iris diaphragm.

The student examined the sediment on the low power objective (10x) and verbally identified any casts and large crystals present. **(critical)**

The student examined the sediment on the high power objective (40x) and verbally identified any RBCs, WBCs, small crystals, epithelial cells, bacteria, parasites, sperm, and fat droplets present. **(critical)**

The student thoroughly documented all results on the written urinalysis report and the student's mentor verified these results. **Note: a new urine sample may be necessary if the sediment evaluation does not provide enough data for the report. Also, if the student processes the urine sample through an automated urine sediment analyzer, in addition to the microscopic evaluation, the student must evaluate and report the results from the microscopic evaluation first, prior to reviewing the results of the automated analyzer.** **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for urinalysis signed by the clinical mentorship supervisor.
2. One video showing the student performing the urinalysis procedure. The student should provide a narrative of the steps being performed during the video using correct medical terminology, including the urine sediment slide evaluation (***1-2 minutes of the initial microscopic evaluation is acceptable***).
3. Completed written report of findings using the form on the following page.
4. Labeled photographs of microscopic fields that reflect sediment analysis findings (at least 2-3 images).

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision and I reviewed the written report results.

Signature of Clinical Mentorship Supervisor: _____

3. URINALYSIS WRITTEN REPORT

Species: _____

Breed: _____

Time of Collection: _____

Time of Testing: _____

Method of Collection: _____

Method of Preservation (circle one): None Refrigeration

Physical Evaluation

Volume (mL): _____

Color: _____

Turbidity: _____

Odor: _____

Foam: _____

Specific Gravity (Refractometer): _____

Sediment Analysis

WBC/HPF: _____

RBC/HPF: _____

Epithelial cells/HPF: _____

Sperm/HPF: _____

Bacteria/HPF: _____

Casts (Specify Type)/LPF: _____

Crystals (Specify Type)/LPF: _____

Other cells (Specify): _____

Chemistry Evaluation

Glucose: _____

Bilirubin: _____

Ketones: _____

Blood: _____

pH: _____

Protein: _____

Urobilinogen: _____

How well do the physical, chemical, and microscopic observations coincide with each other? Describe and explain.

YOUR CLINICAL MENTORSHIP SUPERVISOR MUST VERIFY YOUR RESULTS!

4. PACKED CELL VOLUME, TOTAL PLASMA PROTEIN, AND AUTOMATED HEMATOLOGY PANEL (CBC)

BEFORE YOU BEGIN!

Task 4 is composed of two sub-tasks (A-B). Both sub-tasks must be performed simultaneously on a single sample collected from the same patient.

Goal: To accurately perform, read, and record the results of a packed cell volume, total plasma protein, and an in-house automated hematology panel (CBC).

Description: The student, using a sample of properly collected and mixed anticoagulated (EDTA) fresh whole blood, will properly fill, seal and centrifuge a plain capillary tube and using a card or circular reader, accurately read and record the result as a percent (%) of packed red blood cells and evaluate the plasma.

The student, using plasma from the capillary tube used to read the PCV, broke the tube, loaded the refractometer and accurately read the total protein value and recorded the result in g/dl.

The student, using a sample of properly collected and prepared whole blood, will accurately perform, read, and record an in-house automated hematology panel (CBC).

Criteria: **PART A - Packed Cell Volume**

While wearing exam gloves, the student mixed, by 6-8 gentle inversions, a properly collected and anticoagulated (EDTA) tube of fresh, clot-free whole blood.

The student filled a plain capillary tube 2/3 to 3/4 full, wiped the outside of the tube with a lab tissue, and sealed the end with sealing clay. **(critical)**

The student placed the capillary tube into a slot in a microhematocrit tube centrifuge with the sealed end to the outside edge, noting the slot number. **(critical)**

The student balanced the centrifuge with a balance tube or another patient tube. **(critical)**

The student secured the centrifuge lid and cover. **(critical)**

The student set and verbally identified the appropriate centrifugation time (and speed if applicable).

After the centrifuge stopped, the student removed the tube and recorded the appearance of the plasma and buffy coat, and visually guessed the PCV. **(critical)**

Using a card reader, the student aligned the bottom of the red cell column with the zero line and the top of the plasma with the 100% line. The student read the PCV at the top of the red cell column and recorded the value as a percentage. **(critical)**

Or using a circle reader, the student placed the capillary tube in the groove of the plastic indicator so the intersection of the clay sealant and the packed red blood cells lined up with the black line, located close to the center of the post of the reader. **(critical)**

The student rotated the lower metal plate so the 100% line is directly beneath the red line on the plastic indicator. **(critical)**

Keeping the lower metal plate in the same position and using the finger hole in the upper plate, the student rotated the upper plate so the black spiral line lined up at the top of the top of the plasma column. **(critical)**

The student rotated both the upper and lower plates until the black spiral line lined up at the top of the red cell column. The student read the PCV from the scale directly beneath the red line on the plastic indicator and recorded the result as a %. **(critical)**

PART A - Total Plasma Protein

While wearing exam gloves and using the patient's tube from the PCV, the student scored the tube above the buffy coat with the edge of a triangular file or corner of a microscope slide and snapped the tube by placing finger pressure on each side of the scored line. **(critical)**

With the refractometer in position, the student lifted the cover plate to expose the measuring prism. The student placed a drop of plasma onto the prism, ensuring the tube does not touch the prism, and there was no contamination from the buffy coat, other cellular components, or glass shards. The student may enhance plasma flow by tapping the end of the tube close to the cover plate or dispensing the plasma with an appropriate pipetting bulb or insulin syringe. **(critical)**

The student lowered the cover plate on top of the plasma, held the refractometer to his or her eye with the prism toward the light, focused if necessary, read the total protein value, and recorded the result in g/dl. **(critical)**

The student cleaned the measuring prism and cover plate with water and dried them with a laboratory tissue.

PART B - Automated Hematology Panel (CBC)

The student identified the make (manufacturer) and model of the automated hematology analyzer.

The student described the quality control procedures for the analyzer. **(critical)**

The student followed the manufacturer's established protocol for the performance of an in-house automated hematology panel. The student wore exam gloves when handling the blood sample. **(critical)**

The student verbally commented on the results. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for PCV, TPP, and automated hematology panel signed by the clinical mentorship supervisor.
2. One video showing the student performing the PCV, TPP, and automated hematology panel procedures. The student should provide a narrative of the steps being performed during the video, including reporting the hematology panel results.
3. Written evaluations (see below).

Appearance of Plasma **(circle one)**: Clear, Cloudy, Lipemic, Hemolyzed, Icteric

Buffy Coat Color: _____

Packed Cell Volume: _____ (%)

Total Plasma Protein: _____ (g/dL)

Date: _____

Student Name: _____

Supervisor Name: _____ RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

5. BLOOD FILM PREPARATION AND STAINING

Goal: To prepare and properly stain a quality blood film.

Description: The student, using either the handheld or tabletop wedge method, will prepare a quality blood film from fresh EDTA anticoagulated blood, using a base slide. The student will properly stain the film with quick stain so the cells and their components may be appropriately differentiated and identified.

Criteria: While wearing exam gloves, the student properly mixed, by 6-8 gentle inversions, a properly collected and anticoagulated (EDTA) tube of fresh, clot-free, whole blood.

The student placed a drop of blood approximately 1cm from the frosted end of the microscope slide. The drop of blood can be obtained by using a transfer pipette, a capillary tube, or by placing two wooden applicator sticks into the blood tube. **(critical)**

For the handheld method, the student held the base slide between the thumb and index finger.

For the tabletop method, the student held the base slide on the outer corner of the frosted end of the slide, with the frosted end toward their body.

With the spreader slide held at a 30-45° angle, the student brought the spreader slide back into the drop of blood, allowed the blood to spread out along the edge of the spreader slide, and then moved the spreader slide forward in a rapid, even motion. **(critical)**

The student produced a blood film 1/2 to 2/3 the length of the slide.

The blood film was slightly narrower than the width of the slide.

The feathered edge of the blood film was relatively straight across or slightly curved and did not end abruptly or have tail-like extensions.

When viewed macroscopically, the blood film appeared to have a gradual transition from the thicker body to the feathered edge. **(critical)**

The blood film did not have pressure ridges, holes, scratches, streaks or ridges within the smear. **(critical)**

The student allowed the blood film to air dry vertically, with frosted end up.

The student stained the film with fresh quick stain, dipping the slide for approximately ten, one-second dips in the fixative, then the eosin (red) then the thiazine (blue) stains. **(critical)**

The student held the slide vertically by the frosted end and rinsed the *back* of the slide with water. **(critical)**

The student allowed the blood film to air dry vertically with the frosted end up.

The student labeled the slide on the frosted end with patient ID, species, specimen type and date. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for blood film preparation signed by the clinical mentorship supervisor.
2. One video showing the preparation, staining, and labeling of a blood film. The student should provide a narrative of the steps being performed during the video.
3. Labeled photograph of properly stained and labeled blood film.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

6. NORMAL DIFFERENTIAL

- Goal:** To accurately classify and count the different types of white blood cells, and evaluate the morphologic features of red blood cells, white blood cells, and platelets in a **healthy patient**.
- Description:** Using a fresh sample of properly collected and anticoagulated (EDTA) whole blood from a **healthy patient**, the student will prepare and stain a quality blood film using the criteria listed in Task #5. The student will evaluate and report the morphology of the red blood cells, white blood cells, and platelets, as well as perform a white blood cell and platelet estimate. The student will also count and classify 100 white blood cells.
- Criteria:** While wearing exam gloves, the student prepared and stained a quality blood film based off of the criteria listed in Task #5, using anticoagulated (EDTA) whole blood from a **healthy patient**. **(critical)**
- The student confirmed that the microscope condenser was elevated and the iris diaphragm was open.
- The student examined the blood film on the low power objective (10x) and verbally identified the body, monolayer, and feathered edge of the film, while commenting on any cell patterns and large structures present (debris, microfilaria, platelet clumps, white blood cell aggregates, etc.). **Note: if there is a lot of platelet clumping present, the student may need to utilize a new healthy patient sample to create a new blood film, as a platelet estimate is required on the written report. (critical)**
- The student examined the blood film monolayer on the high power objective (40x), **estimated** the number of WBCs by counting the total number of WBCs over 10 microscopic fields, and calculated the average. **(critical)**
- The student examined the blood film monolayer on the high power objective (40x) and **counted** at least 100 WBCs, while identifying each type, and documenting any nucleated RBCs present. **(critical)**
- The student examined the blood film monolayer on the oil immersion objective (100x), **estimated** the number of platelets by counting the total number of platelets over 10 microscopic fields, and calculated the average. **(critical)**
- Using the oil immersion objective (100x), the student evaluated and reported the morphology of RBCs, WBCs, and platelets present on the blood film. Examples of morphology terms and grading schemes can be found in Appendix A and B of the *Veterinary Hematology Atlas** textbook. **(critical)**
- The student thoroughly documented all results on the normal differential written report and the student's mentor verified these results. **(critical)**

* *Veterinary Hematology Atlas of Common Domestic and Non-Domestic Species*, Reagan, Irizarry-Rovira, and DeNicola, 3rd Edition, ISBN: 9781119064978

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for normal differential signed by the clinical mentorship supervisor.
2. One video showing the student preparing, staining, and setting up the slide underneath the microscope. The student should provide a narrative of the steps being performed during the video using correct medical terminology. ***Students do not need to record the entire***

microscopic evaluation for this task, however a brief demonstration of how to set up the slide and the low power objective (10x) evaluation should be included.

3. Completed written report of findings using the form on the following page.
4. Labeled photographs of microscopic fields that reflect differential findings (at least 2-3 images of the monolayer).

Date: _____

Student Name: _____

Supervisor Name: _____ RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision and I reviewed the written report results.

Signature of Clinical Mentorship Supervisor: _____

6. NORMAL DIFFERENTIAL WRITTEN REPORT (PAGE 1)

Patient Name or ID: _____

RBC Morphology:

Size: _____

Shape: _____

Color: _____

WBC and Platelet Morphology (Specify):

WBC Estimate:

(Average # WBCs per 40x field x 2,000 (or 50x field x 3,000) = approximate # of WBCs/mm³) **SHOW YOUR WORK!**

Relative WBC Counts (%):

(Number (%) of each WBC type observed in 100 WBCs)

Band Neutrophils: _____

Segmented Neutrophils: _____

Lymphocytes: _____

Monocytes: _____

Eosinophils: _____

Basophils: _____

Nucleated RBC (Metarubricyte): _____

Absolute WBC Counts:

(% of WBC type x WBC estimate)

Band Neutrophils: _____

Segmented Neutrophils: _____

Lymphocytes: _____

Monocytes: _____

Eosinophils: _____

Basophils: _____

Nucleated RBC (Metarubricyte): _____

6. NORMAL DIFFERENTIAL WRITTEN REPORT (PAGE 2)

Corrected WBC count for NRBCs (if applicable): SHOW YOUR WORK!

WBC estimate x 100

(# of NRBCs + 100 = corrected WBC count/mm³)

Platelet Estimate: SHOW YOUR WORK!

(Average # platelets per 100x field x 20,000 = Estimated platelets/mm³)

YOUR CLINICAL MENTORSHIP SUPERVISOR MUST VERIFY YOUR RESULTS!

7. PREPARE SERUM AND PLASMA, AUTOMATED CHEMISTRY PANEL, AND SALINE SLIDE/CARD AGGLUTINATION TEST

BEFORE YOU BEGIN!

Task 7 is composed of three sub-tasks (A-C). All three sub-tasks must be performed simultaneously on a single sample collected from the same patient.

Goal: To collect and prepare a quality serum and plasma blood sample.

To accurately perform, read, and record the results of an in-house automated chemistry panel (BUN, glucose, common enzymes).

To accurately perform, read, and report results of a saline slide/card agglutination test.

Description: The student, using a serum collection tube (plain, red-top, or serum separator) AND an anticoagulated collection tube (EDTA or lithium heparin) will properly collect and prepare a serum and plasma blood sample, with the goal to be free of hemolysis and lipemia.

The student, using a sample of properly collected and prepared serum, plasma, or whole blood (depending on the chemistry analyzer used), will accurately perform, read, and record an in-house automated chemistry panel.

The student, using a properly collected and prepared sample, described and accurately performed, read, and reported the results of a saline slide/card agglutination test.

Criteria: **PART A - Prepare Serum and Plasma**

The student selected the appropriate vacuum collection tubes and the needle holder and needle or appropriate syringe and needle required to properly fill the vacuum containers for the procedure, species, and size of the patient. **(critical)**

While wearing exam gloves, the student selected an appropriate blood vessel for the collection of venous blood, and collected the sample without injury to the patient. **Note: the student must demonstrate the blood collection from the patient in the video. (critical)**

Based on the manufacturer's stated capacity of the vacuum collection tube, the student properly filled one serum (plain, red top, or serum separator) tube and one anticoagulated (EDTA or lithium heparin/plasma) tube. The student filled the tubes to not less than 90% or more than 100% of the capacity stated for use. *Each tube must be shown on the video with the label on the tube facing away from the camera so the level may be evaluated. The student will state verbally the manufacturer's stated fill capacity. (critical)*

The student mixed, by inversion, only the appropriate tubes. **(critical)**

The student allowed the serum collection tube to adequately clot prior to centrifugation, noting the time for the clot to fully form. **TIP: this is a good time to perform Task 7C, since the student should obtain a drop of anticoagulated blood from the EDTA tube prior to centrifugation. (critical)**

The student placed the serum collection tube AND the plasma collection tube in the centrifuge, properly balanced the centrifuge, and secured the centrifuge lid/cover (the student may need to centrifuge the serum and plasma tubes separately, depending on the equipment available). **(critical)**

The student set and verbally identified the appropriate centrifugation time (and speed if applicable).

After the centrifuge stopped, the student removed the serum collection tube AND the plasma collection tube, stating the amount and condition of the serum and plasma. *Each tube must be shown on the video with the label on the tube facing away from the camera so the amount and condition can be evaluated. (critical)*

PART B - Automated Chemistry Panel

The student identified the make (manufacturer) and model of the automated chemistry analyzer.

The student described the quality control procedures for the analyzer. **(critical)**

The student followed the manufacturer's established protocol for the performance of in-house chemistry testing. The student wore exam gloves when handling the blood sample. **(critical)**

The student verbally commented on the results. **(critical)**

PART C - Saline Slide/Card Agglutination Test

While wearing exam gloves, the student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the results, including proper units of measurement. **(critical)**

If a saline slide agglutination test was performed, the student evaluated the slide under the microscope and verbally reported the results. **(critical)**

If a card agglutination test was performed, the student followed the manufacturer's established protocol for performance of the test. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1 of each tube (serum and plasma)

Materials Submitted for Evaluation and Verification:

1. Task verification form for collecting/preparing serum and plasma, automated chemistry panel, and agglutination test signed by the clinical mentorship supervisor.
2. One video showing the student performing the collection and preparation of serum and plasma, clearly showing the tubes after collection and after centrifugation. The student should provide a narrative of the steps being performed during the video.
3. One video showing the student performing the in-house chemistry panel. The student should provide a narrative of the steps being performed during the video, including reporting the results.
4. One video showing the student performing the saline slide/card agglutination test. The student should provide a narrative of the steps being performed during the video, including the microscopic evaluation of the saline slide agglutination test.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

8. ABNORMAL DIFFERENTIAL

- Goal:** To accurately classify and count the different types of white blood cells, and evaluate the morphologic features of red blood cells, white blood cells, and platelets in a pathologic patient.
- Description:** Using a fresh sample of properly collected and anticoagulated (EDTA) whole blood from a pathologic patient, the student will prepare and stain a quality blood film using the criteria listed in Task #5. The student will evaluate and report the morphology of the red blood cells, white blood cells, and platelets, as well as perform a white blood cell and platelet estimate. The student will also count and classify 100 white blood cells.
- Criteria:** While wearing exam gloves, the student prepared and stained a quality blood film based off of the criteria listed in Task #5, using anticoagulated (EDTA) whole blood from a pathologic patient. **(critical)**
- The student confirmed that the microscope condenser was elevated and the iris diaphragm was open.
- The student examined the blood film on the low power objective (10x) and verbally identified the body, monolayer, and feathered edge of the film, while commenting on any cell patterns and large structures present (debris, microfilaria, platelet clumps, white blood cell aggregates, etc.). **(critical)**
- The student examined the blood film monolayer on the high power objective (40x), estimated the number of WBCs by counting the total number of WBCs over 10 microscopic fields, and calculated the average. **(critical)**
- The student examined the blood film monolayer on the high power objective (40x) and counted at least 100 WBCs, while identifying each type, and documenting any nucleated RBCs present. **(critical)**
- The student examined the blood film monolayer on the oil immersion objective (100x), estimated the number of platelets by counting the total number of platelets over 10 microscopic fields, and calculated the average. **(critical)**
- Using the oil immersion objective (100x), the student evaluated and reported the morphology of RBCs, WBCs, and platelets present on the blood film. Examples of morphology terms and grading schemes can be found in Appendix A and B of the *Veterinary Hematology Atlas** textbook. **(critical)**
- The student thoroughly documented all results on the abnormal differential written report and the student's mentor verified these results. **(critical)**

* *Veterinary Hematology Atlas of Common Domestic and Non-Domestic Species*, Reagan, Irizarry-Rovira, and DeNicola, 3rd Edition, ISBN: 9781119064978

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for abnormal differential signed by the clinical mentorship supervisor.
2. One video showing the student preparing, staining, and setting up the slide underneath the microscope. The student should provide a narrative of the steps being performed during the video using correct medical terminology. ***Students do not need to record the entire microscopic evaluation for this task, however a brief demonstration of how to set up the slide and the low power objective (10x) evaluation should be included.***
3. Completed written report of findings using the form on the following page.

4. Labeled photographs of microscopic fields that reflect differential findings (at least 2-3 images of the monolayer).

Date: _____

Student Name: _____

Supervisor Name: _____ RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision and I reviewed the written report results.

Signature of Clinical Mentorship Supervisor: _____

8. ABNORMAL DIFFERENTIAL WRITTEN REPORT (PAGE 1)

Patient Name or ID: _____

RBC Morphology:

Size: _____

Shape: _____

Color: _____

WBC and Platelet Morphology (Specify):

WBC Estimate:

(Average # WBCs per 40x field x 2,000 (or 50x field x 3,000) = approximate # of WBCs/mm³) **SHOW YOUR WORK!**

Relative WBC Counts (%):

(Number (%) of each WBC type observed in 100 WBCs)

Band Neutrophils: _____

Segmented Neutrophils: _____

Lymphocytes: _____

Monocytes: _____

Eosinophils: _____

Basophils: _____

Nucleated RBC (Metarubricyte): _____

Absolute WBC Counts:

(% of WBC type x WBC estimate)

Band Neutrophils: _____

Segmented Neutrophils: _____

Lymphocytes: _____

Monocytes: _____

Eosinophils: _____

Basophils: _____

Nucleated RBC (Metarubricyte): _____

8. ABNORMAL DIFFERENTIAL WRITTEN REPORT (PAGE 2)

Corrected WBC count for NRBCs (if applicable): SHOW YOUR WORK!

WBC estimate x 100

(# of NRBCs + 100 = corrected WBC count/mm³)

Platelet Estimate: SHOW YOUR WORK!

(Average # platelets per 100x field x 20,000 = Estimated platelets/mm³)

YOUR CLINICAL MENTORSHIP SUPERVISOR MUST VERIFY YOUR RESULTS!

9. COAGULATION

Goal: To accurately perform and record results of an in-house coagulation test.

Description: The student accurately performed an in-house coagulation test and read and recorded the results.

Criteria: The student selected an in-house coagulation test from the following: buccal bleeding time, activated clotting time (ACT tube or automated), prothrombin time (PT), activated partial prothrombin time (APTT), fibrinogen assay (automated or heat precipitation), or other test approved by instructor. **(critical)**

The student explained the rationale for the procedure selected, which should include the reasoning behind the need for coagulation testing, as well as normal vs. abnormal ranges for the patient.

The student identified and described the quality control program for the procedure (if an automated method is used).

While wearing exam gloves, the student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the results, including proper units of measurement. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for coagulation signed by the clinical mentorship supervisor.
2. One video showing the student performing the coagulation test. The student should provide a narrative of the steps being performed during the video, including the equipment and supplies needed for each test.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

10. CROSSMATCH

Goal: To accurately collect blood samples for and perform crossmatch procedure.

Description: The student, using collected samples from a potential blood donor and recipient, accurately performed a crossmatch, using either the traditional method or a commercial test kit, to determine compatibility for a possible blood transfusion, and correctly reported the findings. **If using a commercial test kit, be sure to use a major crossmatch kit and not a blood type kit. If using the traditional method, please use the method posted in the course resource folder.**

Criteria: While wearing exam gloves, the student demonstrated and described proper processing of the samples for a crossmatch procedure including identifying the donor and recipient samples as plasma or serum and the condition of the sample (NSF, hemolyzed, lipemic) prior to testing. **(critical)**

The student demonstrated and described verbally on video, the entirety of the procedure and accurately reported the result of the crossmatch test, using proper medical terminology and units of measurement. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for crossmatch signed by the clinical mentorship supervisor.
2. One video showing the student performing the crossmatch procedure. The student should provide a narrative of the steps being performed during the video, including the equipment and supplies needed for the test.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision.

Signature of Clinical Mentorship Supervisor: _____

11. CANINE VAGINAL CYTOLOGY

*** This task may be performed on an anesthetized patient***

- Goal:** To properly collect, process, and accurately evaluate and report the cellular findings for canine vaginal cytology.
- Description:** The student properly collected a sample for vaginal cytology and properly processed, accurately stained, evaluated, and recorded the results.
- Criteria:** The student had an assistant hold the dog in either sternal or standing recumbency.
- The dog was held firmly to minimize movement prior to sampling.
- While wearing exam gloves, the student moistened a sterile cotton swab with sterile saline. **(critical)**
- The student collected the sample without contaminating the sample/swab or causing injury to the patient. **Note: if the student used a sterile speculum to collect the sample, the speculum must be the correct size and properly lubricated. (critical)**
- The student rolled the swab across the slide to distribute the cells along the slide and allowed it to dry. **(critical)**
- The student stained the slide with Diff-Quik®. **(critical)**
- The student examined the sample on the low power objective (10x) for an initial view of the cell types present. **(critical)**
- The student examined the sample on the high power objective (40x) and verbally identified the cells present. **Note: the oil immersion objective (100x) can be used to gain a closer view of bacteria or other cells/debris present. (critical)**
- The student thoroughly documented all results on the canine vaginal cytology written report and the student's mentor verified these results. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for vaginal cytology signed by the clinical mentorship supervisor.
2. One video showing the student performing and describing the cytology process (collection, preparation, reading and reporting). The student should provide a narrative of the steps being performed during the video, including the microscopic evaluation **(1-2 minutes of the initial microscopic evaluation is acceptable)**.
3. Completed written report of findings using the form on the following page.
4. Labeled photographs of microscopic fields that reflect written report findings.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision and I reviewed the written report results.

Signature of Clinical Mentorship Supervisor: _____

11. CANINE VAGINAL CYTOLOGY WRITTEN REPORT

Appearance of labia and behavior of patient (Describe):

Appearance of discharge (Color, Consistency, Odor):

Microscopic Evaluation (#/HPF):

Basal: _____

Intermediate: _____

Parabasal: _____

Superficial: _____

Metestral: _____

Mucus: _____

RBC: _____

Debris: _____

WBC (Specify): _____

Other/Abnormal Cells (Specify/Describe):

Bacteria (Specify): _____

YOUR CLINICAL MENTORSHIP SUPERVISOR MUST VERIFY YOUR RESULTS!

12. EAR CYTOLOGY

Patient must be pathologic. Do NOT use patients that have been treated in the past 48 hours with a topical ear medication.

Goal: To properly collect, process, and accurately evaluate and report the cellular findings for ear cytology.

Description: The student properly collected a sample, and properly processed, accurately stained, and read and recorded the results for ear cytology.

Criteria: The student had an assistant hold the patient in either sternal or standing recumbency.

The patient was held firmly to minimize movement prior to sampling.

While wearing exam gloves, the student placed one clean cotton swab into the patient's right ear to properly collect secretions. The swab should be inserted into the vertical ear canal and gently rotated to collect the sample. **(critical)**

The student placed a separate clean cotton swab into the patient's left ear to properly collect secretions. The swab should be inserted into the vertical ear canal and gently rotated to collect the sample. **(critical)**

The swabs containing the appropriate samples were safely removed from the ears.

The student rolled the swabs across the slide, confirming the location of the right and left ear samples on the slide, and allowed it to dry. **Note: the samples can be placed on the same slide or separate slides. (critical)**

The student stained the slide with Diff-Quik®. **(critical)**

The student examined the sample on the high power objective (40x) and verbally identified any cells or large structures present. **(critical)**

The student examined the sample on the oil immersion objective (100x) and verbally identified any bacteria or yeast present. **(critical)**

The student thoroughly documented all results on the ear cytology differential written report and the student's mentor verified these results. **(critical)**

Number of Times Task Needs to be Successfully Performed: 1

Materials Submitted for Evaluation and Verification:

1. Task verification form for ear cytology signed by the clinical mentorship supervisor.
2. One video showing the student performing and describing the cytology process (collection, preparation, reading and reporting). The student should provide a narrative of the steps being performed during the video, including the microscopic evaluation **(1-2 minutes of the initial microscopic evaluation is acceptable)**.
3. Completed written report of findings using the form on the following page.
4. Labeled photographs of microscopic fields that reflect written report findings.

Date: _____

Student Name: _____

Supervisor Name: _____

RVT, CVT, LVT
DVM, VMD

I verify that the student performed this task under my supervision and I reviewed the written report results.

Signature of Clinical Mentorship Supervisor: _____

12. EAR CYTOLOGY WRITTEN REPORT

RIGHT EAR

Appearance of Ear (Describe):

Appearance of Exudate (Color, Odor):

Microscopic Evaluation (#/field):

RBC: _____

WBC: _____

Epithelial Cells: _____

Yeast: _____

Bacteria (Rods): _____

Bacteria (Cocci): _____

Parasites: _____

Abnormal Cells (#/field and describe):

Other (Specify): _____

LEFT EAR

Appearance of Ear (Describe):

Appearance of Exudate (Color, Odor):

Microscopic Evaluation (#/field):

RBC: _____

WBC: _____

Epithelial Cells: _____

Yeast: _____

Bacteria (Rods): _____

Bacteria (Cocci): _____

Parasites: _____

Abnormal Cells (#/field and describe):

Other (Specify): _____

YOUR CLINICAL MENTORSHIP SUPERVISOR MUST VERIFY YOUR RESULTS!