This is an overview of all three Capstone exams. Specific details about each exam will be provided prior to those exams.

Goals

Application of material: Studying for the capstone provides opportunity to apply material learned to novel scenarios; the examination should assess this ability.

Assessment of students: The capstone examinations should be used to ensure that all students who progress in the program have a mastery of key concepts, and the ability to integrate and apply information from the previous year. Students should be able to use the capstones to identify deficits in knowledge or clinical reasoning abilities.

Integration of material, faculty: Faculty should use the capstones as a tool for integrating their material with other classes in the same year, and within the same discipline across years.

Integration of material, students: Preparing for and completing the capstone examinations should encourage students to integrate material across classes.

Review of material from the previous year: Studying for the capstone should ensure that students have reviewed important facts and concepts from the previous year, to optimize preparedness for learning new material.

Assessment of curriculum: The capstone exams should be used to track the performance of students as a whole in specific subject areas, disciplines and competencies, both within individual years and courses, and longitudinally throughout the curriculum. This analysis will be used to improve our curriculum in subsequent years.

Overview and Schedule

Capstone I refers to the exam that covers the first year of the curriculum. Capstone II refers to the exam that covers the second year of the curriculum, and Capstone III covers the third year of the curriculum with the expectation that at the time of Capstone III, students will have mastered knowledge covering all three years. There are three types of capstone exams: an online, open resource exam, an in-class, closed book exam and practical exams. The constituents of each capstone exam are as follows.
## Exam Information

<table>
<thead>
<tr>
<th>Capstone I</th>
<th>Online open resource exam</th>
<th>Dates</th>
<th>Closed book in-class exam</th>
<th>Dates</th>
<th>Practical exam</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>All summer after year 1</td>
<td>Yes</td>
<td>First day of class 2nd year</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Capstone II</td>
<td>Yes</td>
<td>All summer after year 2</td>
<td>Yes</td>
<td>First day of class 3rd year</td>
<td>Yes</td>
<td>First day of class 3rd year</td>
</tr>
<tr>
<td>Capstone III</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>Yes</td>
<td>Last week of regular classes 3rd year</td>
</tr>
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</table>

Capstone I and Capstone II begin in June after the spring semester has been completed. They begin with an open resource, online exam that consists of a series of cases. The cases are written collaboratively by the Capstone Committee together with invited faculty with the relevant expertise for each case. Questions range from factual recall of material presented in the previous year, to the presentation of novel concepts and information that will require the use of outside resources.

Capstone I and II finish with an in-class, closed book exam given on the first day of class. This exam consists of 100 -200 questions written by individual faculty, and reviewed by the Capstone Committee. Capstone II also has a practical session on the first day of class on clinical reasoning concepts from VM745 and VM747.

Capstone III consists of a closed-book, practical exam during which students walk through clinical cases presented progressively. Students make decisions about diagnostic tests and treatments, and once they have made that decision, they move to the next stage of the case.

### Exam Coverage

This table indicates which courses will be covered on each section of each capstone. Elective courses are not included in the capstone exams. Note that this coverage applies to 2015, but **Capstone III coverage will expand in 2016.**

For the closed-book exams (Capstone I and II) and the practical exam (Capstone III), the number of points derived from each course is proportional to the credits of that class. Note that this does not mean that the number of questions is proportional – questions may be weighted differently from each course. For Capstone III, small animal trackers will take two small animal exams, large animal trackers will take the food animal and equine exams, and general trackers will be able to choose which two exams they take. **Although the focus of the material in Capstone III are the courses listed below, at this point in your education you will be expected to integrate all aspects of a case – laboratory results, imaging, treatment, etc.**
Exam Logistics

Online Open Resource Exams
These exams open on Canvas June 1 and are available all summer. They consist of cases with a series of questions. They may be progressive (the student only sees one question at a time and needs to submit the answer before seeing the next question) or all-questions-at-once format. Students may use any resources to answer questions, including classmates who have not yet finished that case, veterinarians, books, notes, and online resources. Please note that non-scientifically peer reviewed resources (including Wikipedia, VIN) are good starting places, but unless the answer can be verified using a scientifically peer reviewed resource (Merck manual, textbooks, PubMed), it may be incorrect. Within the availability period, students may enter and exit the exams as many times as they like. All exams must be submitted by the Wednesday of the first week of classes at 5 p.m. No extensions will be given for any reason, so students are encouraged to start early!

Each student’s results and feedback will be visible when the exam is submitted. Therefore, although students may work with classmates, it is a violation of the honor code to have one classmate submit the case and transmit the answers to other students.

Closed Book In-Class Exams
These exams are given the first day of class years 1 and 2.

Capstone I: All students MUST arrive for the exam at 9 a.m. The exam is in two equal parts. Students may complete the entire exam in one sitting; alternatively, students may turn in part A, take a break for lunch, and then complete part B. Students who finish the entire exam in one sitting are asked to leave the area so they do not inadvertently discuss the questions around someone who has not yet taken part B. The exam period ends at 4, but if students need more
time they may move to a separate area for some additional time. The exam is multiple choice and scantron-graded.

**Capstone II:** All students MUST arrive for the exam at 8 a.m. The written exam is given in two equal parts, and each part must be completed in one sitting. Students will also need to take the practical exams (described below), and some students may choose to do some of the practical exams before taking either of the in-class exams. Students are asked not to discuss any aspects of the exam until the end of the day.

**Practical Exams**

**Capstone II:**
- **Clinical reasoning.** A single clinical case will be set up with several stations. Students will receive information about a case, and will move through the case by answering questions, turning in the answers, then going to the next question. Students will be asked to construct problem lists, differential lists and answer other questions about the case.

**Capstone III:** Capstone III is consists of cases like the **Clinical Reasoning** case in Capstone II, plus an OSCE (observed structured clinical exam). Capstone III is given during the last week before finals of junior year, and consists of two small animal exams, a food animal exam and an equine exam, with 8-12 cases each. Each exam is completed in a morning (starting at 7:30 a.m.), so students will spend two mornings during that last week in the Capstone III exam.

**Grading Policies**

*Procedures for removing questions from in-class and online exams (Capstone I and II)*

- If greater than 50% of the students answer a question correctly, the question remains regardless of the biserial correlation.
- If 30 – 50% of the students answer correctly, the question remains if the biserial correlation is > 0.1.
- If fewer than 30% of the students answer correctly, the question is removed.

**Passing Grades**

A passing grade for the open resource sections of Capstones I and II is 80%. A passing grade for the in-class portions of Capstones I and II, and for Capstone III, is 70%. The target date for returning all capstone grades is 2 weeks post exam.

**Calculation of Grade**

This table indicates the percentage of points from each part of the exam that will contribute to the calculation of your grade.
<table>
<thead>
<tr>
<th></th>
<th>Capstone I</th>
<th>Capstone II</th>
<th>Capstone III</th>
</tr>
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<tbody>
<tr>
<td>In-Class Multiple Choice</td>
<td>65</td>
<td>60</td>
<td>-</td>
</tr>
<tr>
<td>OSCE</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Practical</td>
<td>-</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td>Online</td>
<td>35</td>
<td>35</td>
<td>-</td>
</tr>
</tbody>
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### Remediation

If a student receives less than 70% on the in class portions of Capstones I/II or on Capstone III, or 80% on the online exams, he/she will have the opportunity to remediate regardless of how low the grade is (this is in distinction from all other VM classes, where a grade of less than 65-70% is an automatic fail). Remediation for all sections of the capstone series is another exam in the same format. For Capstones I and II, the remediation is given on the Monday after Thanksgiving break. To remediate Capstone III, the student will work through two (2) additional cases presented in the same format 2-3 weeks following the regularly scheduled Capstone III. A student who is scheduled to remediate will be allowed to start senior rotations, but has option of rescheduling a rotation during the week of the case remediation or requesting time off for the exam from the faculty member supervising the senior rotation. The student will also have an additional week(s) of clinics added to the senior schedule corresponding with the cases topics failed (e.g. neurology, medicine, cardiology, field service, etc.). One week prior to the scheduled remediation exam, the student will receive the signalment and presenting complaint for the case(s) so that he/she may better focus studying. The cases may or may not correspond to the specific topics covered within the original capstone case.

Failure to satisfactorily complete the remediation exercise, by achieving a 70% on an in-class exam or 80% on an online exam by the stated deadline for each semester will cause the “D” grade to revert to an “F” and initiate the academic dismissal process.

### Capstone Contact Information, and Asking Questions about Capstone

The first contacts for any capstone question are Vicki Gillis (Capstone I, Vicki.Gillis@colostate.edu) and Jay Oaks (Capstones II and III, Jay.Oaks@colostate.edu). This includes questions during the year and questions during the summer about the online exam. If these individuals cannot answer the question or if further clarification is needed, they will consult with the Capstone Exam Committee (Anne Avery, Lora Ballweber, Paul Avery, Dave Van Metre, Diana Hassel, Kristy Dowers). A response to the email query will be provided within three (3) working days. We respectfully request that students do not directly email individual members of the committee, course instructors or Dr. Frye about the exam. Each student will be given opportunities to provide written feedback about the exams.
Extensions and Personal Emergencies

There are no extensions given for the online exam, no matter what the circumstances (so start early!). The in-class exam is only offered on one day (I and II) and the Capstone III practical exam over a single week (III). Accommodations for work and travel cannot be made. A decision to give an excused absence for a significant personal emergency (e.g. death in the immediate family) that happens on the day of an in-class exam is made solely by the Associate Dean for Veterinary Academic and Student Affairs.