

Wild felids of Costa Rica

CENTER FOR INTERNATIONAL PROGRAMS AND SUSTAINABILITY STUDIES
Course Title: Wildcats of Costa Rica (Felids)
Course code: ENV-3060
Total contact hours: 60 hours

Course description

Due to its geographic positioning Costa Rica has a high diversity in mammals, the former as a result of the role played by this country as a biological bridge. Felines are an important part of this group, their importance is focused on the role they play as predators and therefore as controllers of energy flows in the ecosystems they inhabit.

The objective of the course is to learn about the 6 species of wild cats found in Costa Rica, their natural history and the current challenges to ensure their conservation. The student will also be able to know different researches focused on feline conservation in the country. The contents of the program will be developed in conjunction with field trips so it has a high practical component.

Audience

This course is structured for International Students attending the Study Abroad program at Universidad Veritas. However, courses are not exclusive to foreigners so a few native students could enroll in this course. Some of the courses are also taught in Spanish as part of our Bachelors in Sustainability Management.

Attendance

Students are only allowed a total of 2 nonconsecutive (back to back) absences. The student will fail the course if he/she has more than two absences. Students will have a 0 on any assignment evaluated in class (presentations, evaluations, field trips, etc.) if he/she is absent unless the student presents an official document no later than one week after the absence. If the student presents an authoritative report to excuse the absence, he/she must submit the missed assignment on that same day. An unjustified absence to a field trip will immediately mean losing all of the points assigned to the field trip. If an official document is presented for the field trip absence students will have to present a research assignment to obtain 50% of the points. The only exception to this rule is when two-course field sessions collide in programming. Students can then opt for doing a research assignment not to lose any points.

Three late arrivals to class (15 minutes later) are treated as one absence. If you tend to be late for class, you will lose 25% of your total grade.

Code of conduct

Professors have the right to expel a student from the classroom should he / she:

- Be disruptive in the classroom.
- Behave in a disrespectful way.
- Be under the influence of alcohol or even smell like alcohol.
- Be under the influence of any illegal drug.
- Hygiene problems that may disturb other students.

Electronic devices

The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class. **Please turn all devices OFF and put them away when class begins.** Devices may be used ONLY when the professor assigns a specific activity and allows the use of devices for internet search or recording. Those who fail to comply with the rule must leave the classroom for the remainder of the class period.

This course has a theoretical-practical approach and responds according to the professional profile to the following question:

What is the importance of wild cats in Costa Rican ecosystems and what are the main threats they face today?

In order to answer this question, this course will study the following:

- Evolutionary, taxonomic, anatomical, physiological and ecological knowledge of the wild cats of Costa Rica.
- General characteristics of the 6 wild felids species in Costa Rica and their status.
- Importance of wild cats in the ecosystems they inhabit.
- Current problems in relation to the conservation of felines as well as strategies and techniques to ensure the viability of their populations.

Values and attitudes

- Teamwork and leadership
- Systemic thinking
- Logical and communicative intelligence
- Problem solving
- Learning how to learn
- Respect for nature and local communities

Competencies, criteria and evidence

At Veritas University competencies are reflexive and integrated actions that respond to the professional profile and to context issues ideally and ethically through the integration of abilities, skills and knowledge. What follows are the discipline and core competencies and their correspondent key competencies and evidence of learning for this course.

Competencies	Key competences	Evidence of learning
Discipline		
Discuss the current situation in the wild cats conservation processes in Costa Rica to understand their main conservation challenges considering the social and political reality	Explain the acquired knowledge in ecological aspects related to wild cat species in Costa Rica	Oral presentation Thematic discussions Final research project
	Associates the social reality of the country with the development of different conservation processes related to wild cats	Fieldtrip report Group presentation Round table
	Discusses the main challenges in the conservation of wild cats by analyzing and relating acquired knowledge with the social / political reality of the country and the region	Fieldtrip report Final research project Round table Group presentation
Generals		
Integrates knowledge, skills and attitudes to learn continuously and through one's life pursuing an efficient development in the knowledge-based society.	Learning to learn	Final research project Fieldtrips
Builds the necessary knowledge, skills and attitudes to learn how to communicate orally and in written form in the different disciplines that make up the curriculum.	Communicate thoughts of the discipline orally, iconically, and in written form.	Thematic discussion
Integrates the necessary knowledge, skills, and attitudes to learn teamwork and leadership techniques.	Execute teamwork and leadership.	Fieldtrips Fieldtrip report
Integrates the necessary knowledge, skills and attitudes to learn interpersonal communication techniques.	Relate well to others Manage and solve conflicts Negotiate reliably and empathetically Speak responsibly Listen attentively	Final research project Round table

COURSE CONTENTS

Unit I. Introduction to the wild felids

- 1.1- Carnivora
- 1.2- What is a felid?
- 1.3- Biogeography of felids

Unit II. Evolution and the Origin of Felidae

- 2.1- Evolution
- 2.2- Fossil record
- 2.3- Phylogeny

Unit III. Anatomy

- 3.1- Adaptations to hunting
- 3.2- Senses
- 3.3- Bones and body proportions
- 3.4- Teeth
- 3.5- Paws and claws

Unit IV. Diversity of wild felids in Costa Rica

- 4.1- Biogeography and bioclimatic aspects of Costa Rica
- 4.2- Species of wild felids in Costa Rica and their characteristics

Unit V. Ecology and behavior

- 5.1- Reproduction
- 5.2- Spatial ecology
- 5.3- Ethology

5.4- Main preys

Unit VI. Tools and techniques for studying wild felids

- 6.1- Study of wild felids as individuals
- 6.2- Study of wild felids in biological communities
- 6.3- Study of wild felids in populations and meta-populations
- 6.4- Study of wild felids across landscapes and regions

Unit VII. Management and conservation of wild felids

- 7.1- Current situation
- 7.2- Conflict jaguar-cattle-hunter
- 7.3- Anthropic impact
- 7.4- Biological corridors
- 7.5- Units conservation
- 7.6- Conservation strategies

COURSE PRE-REQUISITES

It is recommended, but not required, that students complete a basic biology course prior to entering this course

Methodology

This course aims to develop the critical thinking of students around the environmental and social issues that are covered in the course contents through teacher-student-environment interaction. This methodology aims to confront the student with the solution of real current problems that allow him to acquire competencies that can be of help throughout his professional career.

Classes will be taught twice a week on the campus of Veritas University, if necessary some classes will be taught during field trips. The fieldtrips will take place on weekends.

Learning strategies

The following learning strategies will be executed:

- **Individual presentation:** Students must prepare a presentation (power point) about an article that the teacher will send them. The presentation must not exceed 15 minutes, knowledge, clarity, good use of time and order will be evaluated. All presentations must be made on the assigned date, if not the grade will be 0 (unless the absence is justified). The class will assign 30% of the grade and the professor will assign the remaining 70%.
- **Group presentations:** The students must prepare a presentation (power point) about a case study offered by the teacher, the topic should be developed around the perception acquired by the student around Costa Rica. Presentations will be made in groups assigned by the teacher and may not exceed 15 minutes. During the presentation, knowledge, clarity, good use of time and order will be evaluated. All presentations must be made on the assigned date, if not the grade will be 0 (unless the absence is justified). The class will assign 30% of the grade and the professor will assign the remaining 70%.
- **Reports:** Each student must submit a report after each of the fieldtrips made. In the reports, the following information should be detailed.
 - Description and importance of the place visited
 - Objectives of the tour
 - Academic activities carried out
 - Critical analysis of the panorama found
 - Conclusions

The reports must be sent via CANVAS in Word format (.doc / .docx) on the date and time requested by the teacher using APA format.

- Round table: There will be a round table where the experiences acquired by the students in relation to the felines in Costa Rica will be discussed, this dynamic will be developed in relation to the conservation challenges that this group of carnivores have. Students will be evaluated in response to their participation, clarity of ideas and respect.
- Final research project: At the end of the course, the students will present the results of a thorough investigation on the subject given at the beginning of the course, the presentation must be oral and written. The research must argue the results obtained, broad bibliographic reference, and, if possible, consult experts on their research topic. Written research project must be presented in the form of a scientific article using APA format which will be evaluated by the professor, this segment has a value of 50% of the final grade of the research project. The presentation (power point) must not exceed 15 minutes, knowledge, clarity, good use of time and order will be evaluated. All presentations must be made on the assigned date, if not the grade will be 0 (unless the absence is justified). The presentation will have a value of 50% which 25% will be evaluated by the teacher and 25% by the students.
- Fieldtrip evaluation: The fieldtrip will have a value within the final evaluation, the percentage of the tours in the evaluation will be divided into different aspects. The elements to be evaluated in each of the fieldtrips will be:
 - Assistance
 - Participation
 - Punctuality
 - Respect
 - Follow instructions

In addition to the above items, the student must use a field notebook in which they will record important information given by the teacher, charlistas or by members of the communities. The notebook will be reviewed by the teacher in the last week of the course.

Fieldtrips

The fieldtrips are mandatory and participation in the tours has an important percentage in the final grade. There will be a total of 3 fieldtrips in different areas of Costa Rica. Field work might include volunteer work such as trail cleaning, late night monitoring species or long walks. The amenities in the tours (lodging, roads, internet access) may be of low quality in a few cases. The tours are composed of hiking trails, which is why it is necessary that the student has good physical condition. The areas to visit can be far away so it will be necessary to travel by land to destinations.

In some cases, communities will be visited, which is why it is mandatory to respect the traditions, culture and beliefs of the people who live there.

Educational resources

In order to guarantee good development of the course, therefore to guarantee learning, the following resources are available: an updated bibliographic database, multimedia equipment that students can use for their individual presentations; whiteboards and other school equipment for weekly sessions, and readings provided by the educator. All of these complement the suggested projects and provide the students with higher possibilities of knowledge own ship. Most of the lessons will take place in the classroom.

During independent work periods students will be able to attend the institution a campus library, study rooms, and computer labs are available for the students´ independent work time. Free Wi-Fi connection for students, educators, and staff is provided on campus, which gives students the possibility to work not only in the library or computer labs, but also around campus.

Learning evaluation

In order to make the course or program better competencies based evaluation compiles and evaluates evidence by taking into account feedback providing pre-established criteria. The course evaluation must be aligned with the competencies and the teaching methodology. There is a rubric for each evaluation resource. Even though the rubric grants a grade, it is also a quantitative and qualitative description of the students´ performance. The rubrics include the core and discipline key competences.

Rubrics	Percentage value
Individual presentation	15%
Group presentation	20%
Fieldtrips Reports: <ul style="list-style-type: none">• Three reports (5% each)	15%
Round table	10%
Fieldtrips <ul style="list-style-type: none">• Assistance 2%• Participation 2%• Puntuality 2%• Respect 2%• Follow instructions 2%	10%
Final research project: <ul style="list-style-type: none">• Written research project 15%• Oral presentation 15%	30%
TOTAL:	100%

Rubric to evaluate oral presentations

In the oral presentations students must present the results and conclusions obtained in the different tasks assigned by the teacher, so that through team or individual research the student can transmit in a critical way the knowledge acquired to the rest of his classmates and thus be able to open spaces for dialogue.

This rubric will be used to evaluate the individual presentation, the group presentation and the final research project presentation.

Category	Scoring Criteria	Total Points	Score	Comments
Organization (15 points)	The type of presentation is appropriate for the topic and audience.	5		
	Information is presented in a logical sequence.	5		
	The presentation properly cites references from scientific journals.	5		
Content (45 points)	Introduction is attention-getting, lays out the problem well, and establishes a framework for the rest of the presentation.	5		
	Technical terms are well defined in language appropriate for the target audience.	5		
	Presentation contains accurate information.	10		
	Material included is relevant to the overall message/purpose.	10		
	Appropriate amount of material is prepared, and points made reflect well their relative importance.	10		
	There is a conclusion summarizing the presentation.	5		
Presentation (40 points)	Speaker maintains good eye contact with the audience and is appropriately animated (e.g., gestures, moving around, etc.).	5		
	Speaker uses a clear, audible voice.	5		
	Delivery is poised, controlled, and smooth.	5		
	Good language skills and pronunciation are used.	5		
	Visual aids are well prepared, informative, effective, and not distracting.	5		
	Length of presentation is within the assigned time limits.	5		
	Information was well communicated.	10		
Score	Total Points	100		

Rubric to evaluate round tables

A round table dedicates to promote oral expression and investigation about different themes. The idea is that a group of students prepares the topic that the teacher will provide to produce ideas y points of view that either agree or disagree in order to generate new learning. Groups can be formed by 2 to 3 people who will investigate as much information as possible about the assigned topic. Then, they will sit in front of the rest of the class in forming a round table panel. The members of the group must choose a moderator. The moderator begins the round table discussion, informs the class about the topic, introduces the members of the round table group to the class, indicates when each member of the round table will intervene; asks previously planned questions, and takes notes that might work as conclusions. The moderator must be emotionally strong, must be unbiased, and must keep the group united. The moderator usually sits in the middle of the group to keep members focused and keep watch of how people work their goals. Ideally, a round table should last no longer than 60 minutes – 45 minutes to discuss the topics and 15 minutes to draw conclusions.

To run a round table each group must be assigned a topic. The group will investigate on the topic and will choose a moderator. They should also prepare some written information and short lectures through which they will make sure the topic and subtopics are clear for the audience. The group will also generate conclusions and a closure to the discussion. The students must provide evidence of their research through the composition of a written document that contains at least 3 dependable and reliable references. The document should also include the questions used to generate discussions that will be used in the round table. The students must also provide their classmates with a handout that briefly explains the topic and subtopics of the round table.

Category	Scoring Criteria	Total Points	Score	Comments
Effective Communication (40 points)	Create and express messages with clear language and nonverbal forms appropriate to the audience	10		
	Organize the message to adapt to cultural norms audience, purpose and medium	10		
	Support assertions/claims/conclusions with contextually appropriate and accurate examples and quantitative information	10		
	Demonstrate honesty, openness to alternative views, and respect for others' freedom to dissent	10		
Preparation (20 points)	Reference course contents	10		
	Clearly articulate research question and conclusion/s in the allotted time	10		
Critical Thinking and Intellectual Growth (40 points)	Reflect on own learning process	10		
	Use vocabulary and concepts from the course	10		
	Identify obstacles and challenges in research process	10		
	Articulate questions, responses, and ideas that further the discussion	10		
Score	Total Points	100		

Rubric to evaluate field notebook

The field notebook (logbook or workbook) is an instrument in which students take notes of ideas and any information that may be useful for your work. The goal of the log is for the student to verify the evolution of their learning and the development of skills and abilities from the evidence register, relating them to the theory, their own understanding and practice.

In the field notebook there are evidences, problems, observations, ideas, data, elements that arise, followed methodology for the development of a project, record of findings and personal notes.

Scoring Criteria	Total Points	Score	Comments
Division of logbook into logical sections which make entering, organizing, and finding information easier	25		
Applicable project notes, information, diagrams, etc. are thoroughly documented on a regular basis.	25		
The logbook is neatly organized with no loose pages; the documentation is easily read; the logbook is turned in on time	25		
The logbook is constructed as a current, working document so that any other team member and/or advisor could use it.	25		
Total Points	100		

Rubric to evaluate reports

A report is written for a clear purpose and to a particular audience. Specific information and evidence are presented, analyzed and applied to a particular problem or issue. The information is presented in a clearly structured format making use of sections and headings so that the information is easy to locate and follow.

Reports must be submitted the following Thursday after the field trip. They must follow the APA format. In the report the student will detail the area visited, the objectives of the field trip, activities carried out and a detailed analysis of the observed panoramas and relate them to a regional and cultural context.

Scoring Criteria	Total Points	Score	Comments
Good organization; points are logically ordered; sharp sense of beginning and end	15		
Use of the requested format.	15		
Associate the observations with the concepts seen in class	20		
The conclusions are made in a critical and precise manner.	20		
Citation references of scientific journals	20		
Sent on time	10		
Total Points	100		

Rubric to evaluate written research project

Scoring Criteria	Total Points	Score	Comments
Good organization of the topic, points are logically ordered.	20		
Use of the requested format.	10		
The student integrates the concepts learned in class.	25		
The conclusions are made in a critical and precise manner.	20		
Extensive bibliographical search	15		
Sent on time	10		
Total Points	100		

Field trip information

The following information is very important to be considered by students.

What to expect during the field course

- Field trips are not excursions.
- You could visit nearby communities as part of the development of the objectives, where respect and acceptance of local cultures and traditions is mandatory.
- Most activities are carried out in the forest, so adequate and comfortable clothing is necessary
- Although many places of the country have allowed us to find suitable accommodations many of the volunteer work stations or research areas require

Location	Main activities	Hiking difficulty level	Approximate elevation of the site (m.a.s.l.)
Guanacaste	Hiking, field practices and talks	Low	100-1400
Corcovado National Park	Hiking, field practices and talks	Mid-High	0-200
Tortuguero National Park	Hiking, field practices and talks	Mid	0-100
<ul style="list-style-type: none">• The teacher has knowledge of basic first aid and CPR.• Each student will be provided with life jackets for all activities that take place in boats.			

rustic accommodations.

What to bring (mandatory)

- Sun blocker and insect repellent
- Hats, caps
- Long-sleeve shirt
- Pants
- Sandals
- Boots
- Hiking shoes
- Bed sheets
- Flashlight
- Camera
- Field notebook
- Laptop/tablet to prepare presentation
- External batteries for cameras, laptops and cell phones
- Additional backpack
- Aluminum or plastic bottles with purifier

Bibliography

Macdonald, D., & Loveridge, A. (2010). The biology and conservation of wild felids. New York: Oxford University Press.

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Sunquist M., & Sunquist F. . (2002). Wild cats of the World. Chicago: University of Chicago Press.

Sunquist F., & Sunquist M. (2014). The Wild Cat Book. Chicago: The University of Chicago Press.

Turner A. Antón M. (1997). The big cats and their fossil relatives . New York: Columbia University Press.

Tentative lesson schedule

The course consists of 12 weeks of theory, two days a week, two hours a day, and 3 field trips.

Week	Key competence	Content	Teaching strategies
1 (8 - 10 jan)	Explain the acquired knowledge in ecological aspects related to wild cat species in Costa Rica	Unit I. Introduction to the wild felids: 1.1- Carnivora	Thematic discussion
2 (15-17 jan)		Unit I. Introduction to the wild felids 1.2- What is a felid? 1.3- Biogeography of felids	Thematic discussion
3 (22-24 jan)		Unit II. Evolution and the Origin of Felidae 2.1- Evolution 2.2- Fossil record 2.3- Phylogeny	Thematic discussion
4 (29-31 jan)		Unit III. Anatomy 3.1- Adaptations to hunting 3.2- Senses 3.3- Bones and body proportions 3.4- Teeth 3.5- Paws and claws	Fieldtrip Corcovado Fieldtrip report #3
5 (5-7 feb)		Unit IV. Diversity of wild felids in Costa Rica	Fieldtrip report #1

		4.1- Biogeography and bioclimatic aspects of Costa Rica 4.2- Species of wild felids in Costa Rica and their characteristics	
6 (12-14 feb)		Unit V. Ecology and behavior 5.1- Reproduction 5.2- Spatial ecology 5.3- Ethology 5.4- Main preys	Thematic discussion
7 (19-21 feb)	Associates the social reality of the country with the development of different conservation processes related to wild cats	Unit VI. Tools and techniques for studying wild felids 6.1- Study of wild felids as individuals 6.2- Study of wild felids in biological communities	Individual presentations
8 (26-28 feb)		Unit VI. Tools and techniques for studying wild felids 6.3- Study of wild felids in populations and meta-populations 6.4- Study of wild felids across landscapes and regions	Individual presentations Fieldtrip Tortuguero
9 (5-7 mar)		Unit VII. Management and conservation of wild felids 7.1- Current situation 7.2- Conflict jaguar-cattle-hunter	Fieldtrip report #2
10 (12-14 mar)	Discusses the main challenges in the conservation of wild cats by analyzing and relating acquired knowledge with the social / political reality of the country and the region	Unit VII. Management and conservation of wild felids 7.3- Anthropic impact 7.4- Biological corridors	Fieldtrip Guanacaste Fieldtrip report #3
11 (19-21 mar)		Unit VII. Management and conservation of wild felids 7.5- Units conservation 7.6- Conservation strategies	Guest expert Group presentation #1 Group presentation #2
12 (26-28 mar)		Unit VII. Management and conservation of wild felids 7.5- Units conservation 7.6- Conservation strategies	Guest expert Group presentation #3 Round table Research project presentation
13 (2-4 apr)	Final grades		

General observations

The student must comply with the provisions of the Veritas University student regimen regulation. To consult it you should go to the student self-management Portal at

the following address: <http://autogestion.veritas.cr/> and download it.