.VĒRITAS
UNIVERSIDAD

CENTER FOR INTERNATIONAL PROGRAMS & SUSTAINABILITY STUDIES

Course Title: Marine Mammals of Costa Rica: Biology for Conservation
Course code: ENV- 3200
Total contact hours & credits: 60 hours 4 credits
Pre-requisites: None

Course Description

This course is an introduction to the biology of marine mammals of Costa Rica, including whales, dolphins, manatees, fur seals and sea lions. Topics covered include the evolution, physiology, behavior, and ecology of marine mammals. Particular attention is paid to current topics in the management and conservation of cetaceans (whales and dolphins) in Costa Rica within marine protected areas or with local coastal communities. Fieldwork will focus on basic ecological monitoring techniques and primary care on marine mammals' stranding.

¿How to apply the elements of the biology and ecology of marine mammals for the valuation of their uses in different sectors and the promotion of their conservation?

In order to respond the query, we will study the following generative topics:

- Diversity and morphology of marine mammals
- Adaptations to the aquatic environment
- Marine conservation and marine mammals
- Adaptations of mammals to the aquatic environment
- Marine Mammal Stranding's & Response
- Benefits and threats of marine mammals

The course will promote the following skills:

- Ability to identify the main biological and ecological characteristics of marine mammals.
- Ability to compare species of marine mammals
- Ability to determine the main challenges of marine conservation and sustainable tourism related to marine mammals.

Some of the values and attitudes fostered among students are the following:

- Teamwork and leadership
- Interest in marine conservation
- Interest in tourism sustainability

Competencies, criteria and evidences

The competences for Veritas University are reflexive and integral actions that respond to the professional profile and context problems with suitability and ethical commitment, integrating *know how to do, know how to be and know how to feel* in a perspective of improvement. Both the disciplinary and general competences are presented, linked to their criteria and performance evidences for this course.

Type of Competencies	Performance criteria (Sub-competences)	Evidence of performance
Discipline Analyze the biological and ecological aspects of marine mammals that allow assessing the uses they receive and thus promote their conservation and responsible use	Differentiates the basic biological and ecological characteristics of marine mammals according to a particular marine ecosystem	Marine mammal's visual identification assessment.
	Deducts threats to cetaceans according to the uses they receive by different sectors of society	Species fact sheet.
	Evaluates the impact of the main uses to marine mammals, according to the particular characteristics of human activities, species and their ecosystems	Case study: Sustainable tourism on cetaceans in Costa Rica.
Type of Competencies	**Performance criteria (Sub-competences)**	**Evidence of performance**
Integrate the knowledge, skills and attitudes necessary to learn the techniques of teamwork and leadership	Work in a team and leadership.	Case study: Sustainable tourism on cetaceans in Costa Rica.
Integrates the knowledge, skills and attitudes necessary to learn interpersonal communication techniques.	Connect well with others. Manage and resolve conflicts. Negotiate knowing how to inspire confidence and empathy. Speak responsibly Listen in depth	Role playing: cetacean stranding
Integrates the knowledge, skills and attitudes necessary to learn continuously throughout life considering the effective development in the knowledge society.	Learn to learn	Species fact sheet.

Contents

Methodology

This is an introductory course on the topic of marine mammals in Costa Rica. The objective of the course is that students can differentiates the biological and ecological characteristics of marine mammals from their threats and ecological impacts of their use. The activities are designed through lectures and independent research students can identify the main characteristics of marine mammals. Under the analysis of a single species present in the country, a fact sheet will be developed that will address the issues of threats and their uses. Finally a case study will be developed and allow the impact of the main uses to marine mammals and thus link the acquired knowledge to achieve promote their conservation and responsible use.

Learning Strategies

The course will complete the following learning strategies:

- **Marine mammal's visual identification assessment.** The visual assessment of the identification of biological characteristics of marine mammals aims for students to apply their theoretical taxonomic knowledge in the identification of the species in the field immediately. The identifications will be made individually in the field or in classroom**.**
- **Species fact sheet**: This is a product that will be developed individually. It will allow the student to analyze and interpret the theoretical aspects relevant to each species and must synthesize the information received in the course and located in literature.
- **Case study:** Sustainable tourism of marine mammal sightings in coastal areas of Costa Rica promotes three basic aspects: knowledge management, reflective practice and adaptation to changes. With knowledge management, students are expected to acquire the strategies and techniques that allow them to learn by themselves; this implies awareness of the assimilation, reflection and internalization of knowledge so that, finally, you can assess and deepen from a personal option. The case study will be done as a group.
- **Role playing:** Simulation in stranding will be in teams, the aim is to apply their theoretical knowledge about marine mammal care in a practical and immediate way.

Didactic resources

For the proper development of the course and thus ensure learning, we have a library of updated bibliographic recommendations, multimedia equipment for individual exhibitions, furniture and acrylic slates for weekly sessions and readings provided by the teacher that can be a complement to the proposed project activities, as well as the different didactic techniques mentioned that give students a greater possibility of appropriating knowledge. Most of the lessons will be done in the classroom.

The student may make use during the hours of independent work of the library of the institution, of the study rooms or of the computer labs, as well as of any other area that he / she decides on the campus of the University, since it is counted with wireless Internet and free to use for all students, teachers and administrators.

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.

Assessment of learning outcomes

Competency assessment is the process by which evidence is collected and a judgment or opinion is made, taking into account pre-established criteria to give feedback in order to improve the suitability of the course or program. The evaluation of the course must be coherent with the competences and the teaching methodology. For each item of evaluation there is a rubric, which, although it gives a score, is a quantitative and qualitative description of the student's performance. The rubrics include the performance criteria of the general and disciplinary competences.

RUBRIC	WEIGHTING
Case study	**40%**
Marine mammal's visual identification assessment	**20%**
Species fact sheet	**20%**
Role playing	**20%**
Total of points	**100%**

Rubric to evaluate the case study

The case study will be about sustainable tourism of marine mammal sightings in coastal areas of Costa Rica. The case study will be done as a group.

INDICATOR	EXCELLENT	GOOD	REGULAR	INSUFFICIENT
Problem approach	The problem approach answer 86-100% of the questions	The problem approach answer 71-85% of the questions.	The problem approach answer 56-70% of the questions	The problem approach answer 55% or less of the questions
Structure of the report	The structure of the report presents 100% of the sections requested in the Guide	The structure of the report presents at least 75% of the sections requested in the Guide	The structure of the report presents at least 50% of the sections requested in the Guide	The structure of the report presents at least 25% of the sections requested in the Guide
Clarity	The report is presented with excellence in order and clarity.	The report is presented very well in terms of order and clarity.	The report is presented in regular order and clarity.	The report lacks order and clarity.
Bibliography	Presents at least 5 relevant bibliographic sources and updated in APA format.	Presents at least 4 relevant bibliographic sources and updated in APA format.	Presents at least 3 relevant bibliographic sources and updated in APA format.	Presents at least 2 relevant bibliographic sources and updated in APA format.
AP Style & Grammar	AP Style followed wonderfully. Rules of grammar, usage and punctuation are followed Language is clear and precise; excellent sentence structure	AP Style followed somewhat. Contains two or three grammatical, punctuation and spelling errors Language is clear, good sentence structure	AP Style not followed. Contains four or five grammatical, punctuation and spelling errors Language is frequently unclear; no sentence structure	AP Style not followed. Contains six or more grammatical, punctuation and spelling errors Language is frequently unclear; no sentence structure

Guide to Case Study structure

1. Title page: report title, your name, submission date
2. Table of contents: list of numbered sections in report and their page numbers
3. Introduction: Introduces the case, including the background and any previous studies of the issue.
4. Aims: Describes the purpose of the study and the specific questions you are trying to answer (problem approach).

5. Method: Explains how the study was carried out, e.g. what research methods did you use to collect data interviews, observations, questionnaires, etc.? What were the circumstances of your data collection?
6. Results: Describes what you found through your investigations, e.g. the main themes that came out in interviews, responses to questionnaires, significant observations.
7. Discussion: Explains the significance of the study and what can be learnt from it. Note that a case study is a study of a particular situation so you can't generalize the results to all other situations. That means your discussion should focus on what can be learnt about that particular situation and the individuals involved.
8. Recommendations: Provides proposals for future action to solve the problem or improve the situation, e.g. by applying a particular kind of treatment or intervention.
9. Bibliography: list of reference material consulted during research for report
10. Appendix: information that supports your analysis but is not essential to its explanation

Source: https://www.westernsydney.edu.au/__data/assets/pdf_file/0008/1082474/Case_Study_Structure.pdf

Rubric to evaluate the Role play

The simulation of a stranding event aims for students to apply their theoretical knowledge about the attention of stranded marine mammals in a practical and immediate way.

INDICATOR	EXCELLENT	GOOD	REGULAR	INSUFFICIENT
Analysis	The group identify and analyze at least 5 problems in the stranding event.	The group identify and analyze 4 problems or less in the stranding event.	The group identify and analyze 3 problems or less in the stranding event.	The group identify and analyze 2 problems or less in the stranding event.
Practice development	All the members of the team have a job in the attention of the stranding event.	At least 75% of the members of the team have a chore in the attention of the stranding event.	At least 50% of the members of the team have a chore in the attention of the stranding event.	Less than 50% of the members of the team have a chore in the attention of the stranding event.
Conclusions and recommendations	All team members provide at least one conclusion and recommendation relevant to a stranding event response	At least 75% of the team members provide at least one conclusion and recommendation relevant to a stranding event response	At least 50% of the team members provide at least one conclusion and recommendation relevant to a stranding event response	Less than 50% of the team members provide at least one conclusion and recommendation relevant to a stranding event response

Rubric to evaluate the Fact sheet

The Fact sheet is a product that will be developed individually. It will allow the student to analyze and interpret the theoretical aspects relevant to one marine mammal species and to synthesize the information received during the course.

INDICATOR	EXCELLENT	GOOD	REGULAR	INSUFFICIENT
Headline	Has a headline	Has a headline	No headline used	No headline used
Species image	Has a correct image of the species	Has a correct image of the species	No correct image of the species	No correct image of the species
Organization & Structure	The structure of the report presents 100% of the sections requested in the Guide	The structure of the report presents at least 75% of the sections requested in the Guide	The structure of the report presents at least 50% of the sections requested in the Guide	The structure of the report presents at least 25% of the sections requested in the Guide
AP Style & Grammar	AP Style followed wonderfully. Rules of grammar, usage and punctuation are followed Language is clear and precise; excellent sentence structure	AP Style followed somewhat. Contains two or three grammatical, punctuation and spelling errors Language is clear, good sentence structure	AP Style not followed. Contains four or five grammatical, punctuation and spelling errors Language is frequently unclear; no sentence structure	AP Style not followed. Contains six or more grammatical, punctuation and spelling errors Language is frequently unclear; no sentence structure
Bibliography	Presents at least 5 relevant bibliographic sources and updated in APA format.	Presents at least 4 relevant bibliographic sources and updated in APA format.	Presents at least 3 relevant bibliographic sources and updated in APA format.	Presents at least 2 relevant bibliographic sources and updated in APA format.

Guide to Fact Sheet structure

1. Headline
2. Species Image
3. Taxonomy
4. Description
5. Range and habitat (regional and local)
6. Behavior
7. Relation to humans (Protection, Captivity,other)
8. Conservation status

Course Schedule

WEEK	Sub competency	Contents	Learning strategies
1	Differentiates the basic biological and ecological characteristics of marine mammals according to a particular marine ecosystem	Marine environment: threats and benefits from oceans	Topic discussion and independent research
2		Diversity and morphology of marine mammals of the world	Topic discussion and independent research
		Taxonomy: pinnipeds, serenians, odontocetes, mysticetes,	
3		Pinnipeds and sirenians; adaptations to the aquatic environment: locomotion and thermoregulation, anatomical features, diving and physiology	Topic discussion and independent research
4		Cetaceans: taxonomy, identification, evolution, adaptations to the aquatic environment: (locomotion, thermoregulation, anatomical features, diving and physiology)	Lab
5		Cetaceans: taxonomy, identification, evolution, adaptations to the aquatic environment: (locomotion, thermoregulation, anatomical features, diving and physiology)	Topic discussion and independent research
6		Cetaceans / River Dolphins: taxonomy & identification	Topic discussion and independent research
7	Deducts threats to cetaceans according to the uses they receive by different sectors of society	Marine Mammal Strandings & Response: Immediate care, Reorientation & Release	Lab
8		Marine Mammal Acoustics & Impacts	Topic discussion and independent research
9		Marine Mammal and Whale watching impacts	Topic discussion and independent research
10	Evaluates the impact of the main uses to marine mammals, according to the particular characteristics of human activities, species and their ecosystems	Cetaceans in Costa Rica: Diversity and identification of species.	Topic discussion and independent research
		Cetaceans in Costa Rica: Social and economic importance	Topic discussion and independent research
11		Marine mammals in Costa Rica Fact sheet presentation	Topic discussion and independent research
12		Case study presentations	Case study: Sustainable tourism on cetaceans in Costa Rica.

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:

1) Be disruptive in the classroom.
2) Behave in a disrespectful way.
3) Be under the influence of alcohol or even smell like alcohol.
4) Be under the influence of any illegal drug.
5) 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.

General Observations

The student must comply with the provisions of the CIPSS Academic Policies Regime. To consult it you must go to the Veritas website to the CIPSS page to the Home Menu and download it.