

January 1, 2018

**BIOL 466: Frontiers in Marine Biology (CRN 20385)**  
**THE DEEP SEA**

**Instructor**

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**Schedule**

Mon, Thurs 1300 – 1425h  
MAC D107

**Description:** This course explores new advances in topics related to ocean biology. This year we will focus on the deep sea with an eye on the tremendous challenges that face scientists and society over the next decade. Ocean change is rapid and unpredictable. Research programmes are struggling to understand species responses in the context of whole communities and ecosystems. We will explore contributions to this analysis in the context of specific systems, approaches and ecosystem integration.

**Format:** I offer a basic interactive lecture style to which I bring background preparation and deep-sea experience; you bring your ideas based in some reading. The “text” for this course is the paper by Ramirez-Llodra et al (*Deep, diverse and definitely different: unique attributes of the world’s largest ecosystem*). I will have some required readings as well that will be covered in class. “Required” means that you are expected to contribute discussion and comment. Please read before the class and prepare a question or comment: it is part of your participation mark.

We will have two guest lecturers to give you expert insight into specific topics. Please ‘exploit’ them with questions to acknowledge the time they invested in us.

The main assignment for the course is a project related to deep-sea exploration. You will gather data from deeps dives on seamounts in the Pacific with enough rigour to allow comparisons among you. Analysis will not be complex or beyond the skills you should have. You will be the first making these comparisons on some beautiful unknown places; I hope you find it interesting. There will be two reports submitted and a brief presentation on your results.

The Course Experience Survey is a useful mechanism to communicate to me. Please give me, and the Department, your feedback. [www.uvic.ca/learningandteaching/faculty/resources/ces/](http://www.uvic.ca/learningandteaching/faculty/resources/ces/)

**Assessment:**

Dataproject 1: Background, objective:	15	Test	20
Dataproject 2: Results/Discussion	20	Class participation	5
Presentation	5	Exam (Take Home)	35

**UVic Grading:** A+ (90-100); A (85-89); A- (80-84); B+ (77-79)

B (73-76) B- (70-72); C+ (65-69); C (60-64); D (50-59); F (0-49)

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**Lecture Schedule**  
~ subject to updates ~

<b>DATE</b>	<b>class</b>	<b>TOPIC</b>	<b>PRESENTER</b>	<b>Paper</b>
Jan 4	1	Intro; Ocean exploration	VT	DDD
Jan 8	2	Deep Env't; Seatube	VT; FdL	DDD
Jan 11	3	Project Overview	VT	Handout
Jan 15	4	Some guiding concepts	VT	Danovaro
Jan 18	5	Microbial processes	VT	suggested
Jan 22	6	OMZ and hypoxia	VT	DDD
Jan 25	7	Chemosynthetic systems	VT	Tunncliffe
Jan 29	8	Pelagic world	T. Giguère	DDD
Feb 1	9	Going Deep: Carbon cycle	VT	(still to come)
Feb 5	10	Canyons	F. De Leo	
Feb 8	11	<b>TEST</b>		
Feb12/15		<b>BREAK</b>		
Feb 19	12	Deep-sea diversity	VT	
Feb 22	13	Corals/Ecosystem engineers	C. Du Preez	
Feb 26	14	Hot Vents	VT	
Mar 1	15	Connectivity	VT	
Mar 5	16	Ecosystem Function	VT	
Mar 8	17	Anthropogenic impacts		
Mar 12	18	Open ocean governance		
Mar 15	19	<i>Presentations</i>	you	
Mar 19	20	<i>Presentations</i>	you	
Mar 22	21	Deep-sea mining		
Mar 26	22	Seabed policy		
Mar 29	23	Discussion	VT	
Apr 6	24	Summary: Grand Challenges	VT	Borja