

**ECODIM-VII - Austral Summer Institute, University of Concepción & Pontificia Universidad Católica de Chile**  
**ECOLOGY & DIVERSITY OF MARINE MICROORGANISMS at Las Cruces**  
**Programación de Curso - Enero 8 - 28, 2012**

**Actividades**

**Semana 1**  
Enero  
8-15

**Mañana**

**Tarde**

**Noche**

Domingo,  
08

Students, TAs and instructors arrive at the Estación Costera de Investigaciones Marinas (ECIM) at Las Cruces (Monica Sorondo (MS) course coordinator, phone (++56) (0)9-6821550, cell phone)

**19.30**  
Get together. Pizza and drinks will be served at Cabañas Quirinal (MS, EA)

Lunes,  
09

**08.30** Welcome (OU) and presentation of participants (RD).  
**08.45** Mission and Research Activities at ECIM (Dr. Sergio Navarrete, Director ECIM)  
**09.30** L1: Introduction to oceanic Phytoplankton diversity and ecology (DV)  
**11.00** L2: Overview: When the oceans suffocate: Microbial oceanography of oxygen minimum zones (OU)

**14.00**  
Laboratory facilities and equipment (RD, PV, NT, CG, JS). Installing Zeiss Microscope (KH)  
**14.30** Introduction to and Background Knowledge about the Course Study Areas (RD, PV)  
**15.30** Course organization. Introduction to the course goals, overview of course program (KH)  
**16.00** Individual study time, preparation of evening presentations

**19.00 – 21.00**  
Student presentations  
S1: Álvaro M. Plominsky  
S2: María Lorena González H.  
S3: María Jesus Gálvez  
TA1: Carla Gimpel

Martes,  
10

**07.15** Sampling Groups: Field work, water and sediment sampling (RD) with the aid of Ricardo Calderon and Randy Finke (ECIM)  
**08.30** Rotations: Cytometry, Microscopy, Sample Processing

**14.00** Rotations cont.: Cytometry, Microscopy, Sample Processing

**19.00 – 21.00**  
Student presentations  
S4: Silvia Narváez Florez  
S5: Nathalie Delherbe  
S6: Adriana Lopes  
S7: Priscila Ikeda Ushimaru

<p>Miércoles, 11</p>	<p><b>08.00</b> Bus departs from Cabañas Quirinal: Sampling at Cahuil Salt Ponds: Water and mud in salt gradients (ALL). After return: Sample processing and storage</p>		<p><b>19.00 – 21.00</b> Student presentations S8: Florencia Bertoglio S9: Marine Blanchet S10: Fernando G. Sorroche S11: Marcia C. Astorga</p>
<p>Juves, 12</p>	<p><b>08.30</b> L3 - L5: Introduction to Metagenomics - Preparation for Tutorial, Computer lab (EA)</p>	<p><b>14.00</b> Groups A &amp; B: Collecting metadata, sample processing continued in the lab (ALL) <b>14.00</b> Groups C &amp; D: Computer lab with EA <b>16.30</b> Groups C &amp; D: Collecting metadata, sample processing continued in the lab (ALL) <b>16.30</b> Groups A &amp; B: Computer lab with EA</p>	<p><b>19.00 – 21.00</b> Student presentations S12: Claudia Elizondo S13: Felipe Docmac S14: Carlos Henríquez Castillo S15: Yolaine Delgado Gómez</p>
<p>Viernes, 13</p>	<p><b>07.00</b> Bus leaves at the Cabañas Quirinal <b>10.15 - 18.00</b> Symposium on "Nitrogen fixation in aquatic environments: strategies and ecology" at Pontificia Universidad Católica de Chile in Santiago organized by Beatriz Díez and Mónica Vásquez (special program. MV, CF, LS, CF, LF, EF)</p>	<p><b>12.30</b> Lunch organized for symposium participants at local restaurant (MS, BD, MV) <b>18.30</b> Bus leaves from Alameda 340, Auditorio B201, Facultad de Ciencias Biológicas (MS)</p>	<p><b>20.30</b> Reception with course participants, symposium speakers and guests at ECIM, Las Cruces (MS)</p>
<p>Sábado, 14</p>	<p><b>10.00</b> L6: Diversity and biogeography of diazotrophic microorganisms in extreme habitats (BD) <b>10.30 - 12.30</b> Discussions with all Symposium Speakers <b>12.30</b> TA2: Juan Francisco (Pancho) Santibáñez-Bustos: Sulfur cycling in the OMZ <b>14.30</b> Introduction to exam paper presentations: Topics, internet, library and literature searches <b>15.00</b> Experimental possibilities and suggestions for investigations. Formation of research groups: Aquavirus, Saltys, Los Anoxigenicos, PHOSHYM. <b>17.00</b> Presentation and evaluation of proposed research projects (ALL)</p>		<p><b>19.00</b> Summary of achievements, week 1 Planning week 2 (ALL)</p>
<p>Domingo, 15</p>	<p>Free day. Relax and catch up</p>		

**Actividades**

**Semana 2**

Enero  
16 - 22

**Mañana**

**Tarde**

**Noche**

Lunes,  
16

**08.30** L7: Phytoplankton : major taxonomic groups (DV)  
**09.30** L8: Functional Metagenomics (EA)  
**11.00** L9: Post-Genomics (EA)

**12.30** Group PHOSHYM: Sampling at El Yali and abandoned Salt Works if necessary (EAI, JS).  
**14.00** Group Los Anoxygenicos: Project work continued in the lab  
**14.00** Groups Aquavirus & Saltys: Computer lab with EA  
**16.30** Groups Aquavirus & Saltys: Project work continued in the lab; preparation for resampling, if necessary.  
**16.30** Groups PHOSHYM & Los Anoxigenicos: Computer lab with EA

Student defined activities

Martes,  
17

Sampling at El Quisco and at Cahuil Salt Ponds as needed by groups and project work continued in the lab

Project work continued in the lab

Student defined activities

Miércoles,  
18

**08.30** L10: Flow cytometry in marine biology; measuring chlorophyll fluorescence action spectra of phytoplankton (GV)  
**09.30** L11: Physical scales relevant to marine planktonic microorganisms (PV)  
**11.00** L12: The role of viruses in the ocean and how we study them (RD)

**13.00** All Groups: Project work continued in the lab

Student defined activities

Juves,  
19

**08.30** L13: Eukaryotic Picoplankton (DV)  
**09.30** L14: Microbial community gene content and expression in a coastal upwelling ecosystem (OU)  
**11.00** L15: Harmful algal blooms and marine toxins in Chilean coastal waters (NT)  
White board lectures during power outage (KH)  
L19: Diets for microbes and  
L20: Redox concepts.

**13.00** All Groups: Project work continued in the lab

Student defined activities

Viernes,  
20

**08.30** L16: Metagenomic approaches to the study of eukaryotic picoplankton (DV)  
**09.30** L17: Life cycles of eukaryotic phytoplankton and importance to ecology, evolution, and biogeochemical functioning (PV)  
**11.00** L18: Microbial regulation of climatic changes through biogeochemical carbon cycling (KH)

**13.00** All Groups: Project work continued in the lab  
In between: Computer lab with DV: ARB & other phylogenetic Software Packages

Student defined activities  
L19: Diets for microbes. Self study  
L20: Redox concepts. Self study

Sábado,  
21

**Student Minisymposium: Discoveries in marine microbial ecology** (see special program)

**08.30** Session 1: 3 presentations  
Student exam and paper presentations (student guided, special program, max. 25 minutes per student, discussion included)  
**10.30** Session 2: 4 presentations  
Student exam and paper presentations (student guided, special program, max. 25 minutes per student, discussion included)

**13.30** Session 3: 4 presentations  
Student exam and paper presentations (student guided, special program, max. 25 minutes per student, discussion included)  
**15.30** Session 4: 4 presentations  
Student exam and paper presentations (student guided, special program, max. 25 minutes per student, discussion included)

**18.30**  
L21: Genomics of cyanobacteria (MV)  
**19.30:** Summary of achievements, weeks 1 and 2  
Planning week 3 (ALL)

Domingo,  
22

Free day. Relax and catch up

## Actividades

### Semana 3

Enero  
23 -28

Mañana

Tarde

Noche

Lunes,  
23

**08.30** L22: Introduction to Bio-Thermodynamics: Please study the slides L20 beforehand (KH)  
**09.30** L23: Biogeochemical cycling in oxygen gradients (OU)  
**11.00** L24: Biochemical microbial ecology (KH)

**13.00:** Environmental proteomics of microbial plankton in a highly productive coastal upwelling system (Marine Blanchet)  
**13.30** Tutorial Genius in Groups (DV)  
**13.30** Tutorial Bosque in Groups (OU)  
**13.30** Tutorial Thermodyn in Groups (KH). Please download "Thermodyn" onto your personal laptop  
**15.30** Project work continued in the lab

Student defined activities

Martes,  
24

**08.30** L25: Flow cytometric sorting approaches to photosynthetic picoplankton diversity and metagenomics (DV)  
**09.30** L26: The technology behind cell sorting (GV)  
**11.00** L27: The use of flow cytometers in marine science. Some examples and pointers for getting started (PV)

**13.00:** Project work continued in the lab  
**14.30:** Tutorial ARB in Groups (DV)  
**14.30:** Tutorial Thermodyn in Groups (KH)

Student defined activities  
DGGE in Santiago (Group)

Miércoles,  
25

**08.30** L28: Photosynthetic eukaryotes in polar marine systems (NT)  
**09.30** L29: Concepts in microbial ecology (RD)  
**11.00** L30: Microbial bio-diversity; what does it mean? (KH)

**Afternoon:** Finish project work (ALL)

Student defined activities

Juves,  
26

**08.30** Work on research results.  
Design poster

**Afternoon:** Work on research results.  
Design poster

Student defined activities

Viernes,  
27

**08.30** Work on research results.  
Design poster

Groups present Course Research Results:  
**12.30** PHOSHYM  
**13.30** Los Anoxigenicos  
**14.30** Aquavirus  
**15.30** Saltys

**16.30** Thank-you to ECIM campus staff and course staff (KH, OU, RD)  
**17.00** Course evaluation, achievements, ideas and recommendations for future ECODIM™ courses (ALL).  
**17.30** Course graduation (Course Participants, Faculty and invited Guests)  
**19.00** Party: Farewell, Au revoir, Até a vista, Fiesta de Despedida (MS, EAI & ALL)

Sábado,  
28

Equipment packed for storage and transport (RD, NT, CG, JS).  
Clean labs and files on the computers (ALL).  
Download files from OLAT

**12.00** Deadline for posters and abstracts.  
End of Course.  
Departure

Administrative course matters (KH, OU, RD, NT, CG, JS)

Domingo,  
29

Departure Staff

## Instructors, TAs, Lecturers, Course Coordinators, Symposium Speakers

EAI	Esteban <b>Alarcón</b> , ealarconcoronado@gmail.com	Departamento de Oceanografía, Universidad de Concepción, Chile	HL
EA	Eric <b>Allen</b> , eallen@ucsd.edu	Scripps Institution of Oceanography & University of California, San Diego, USA	L, I
RD	Rodrigo <b>De la Iglesia</b> , sirkonio@gmail.com	Laboratorio de Microbiología Marina, Pontificia Universidad Católica de Chile, Santiago, Chile	L, I
BD	Beatriz <b>Díez</b> , bdiez@bio.puc.cl	Pontificia Universidad Católica de Chile, Santiago, Chile	Y
LF	Laura <b>Farias</b> , lfarias@profc.udec.cl	Departamento de Oceanografía, Universidad de Concepción, Chile	Y
CF	Camila <b>Fernández</b> , camilafernandez@oceanografia.udec.cl and fernandez@obs-banyuls.fr	Laboratoire d'Océanographie Microbienne (LOMIC, CNRS) Observatoire Océanologique de Banyuls sur Mer-Francia and Centro COPAS - Fac. Cs Nat y Oceanograficas, Universidad de Concepción, Chile	Y
EF	Enrique <b>Flores García</b> , eflores@ibvf.csic.es	Instituto de Bioquímica Vegetal y Fotosíntesis, CSIC-Universidad de Sevilla, Spain	Y
CG	Carla <b>Gimpel</b> , cgimpel@inach.cl	Laboratorio de Biorrecursos Antárticos, Instituto Antártico Chileno or Antarctic Bioresources Lab, Chilean Antarctic Institute, Punta Arenas, Chile	TA
KH	Kurt <b>Hanselmann</b> , kurt.hanselmann@erdw.ethz.ch	Geomicrobiology Group, Department of Earth Sciences ETH Zürich, Switzerland	L, I
SN	Sergio <b>Navarrete</b> , snavarrete@bio.puc.cl	Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile	H
JS	Juan Francisco <b>Santibañez</b> , jusantib@profc.udec.cl	Departamento de Oceanografía, Universidad de Concepción, Chile	TA
MS	Monica <b>Sorondo</b> , asi@udec.cl	Austral Summer Institute, Universidad de Concepción, Chile	HL
LS	Lucas J. <b>Stal</b> , L.Stal@nioo.knaw.nl soon to be changed to lucas.stal@nioz.nl	Department of Marine Microbiology, Netherlands Institute of Ecology NIOO-KNAW and Department of Aquatic Microbiology Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, The Netherlands	Y
NT	Nicole <b>Trefault</b> , nntrefau@puc.cl	Centro de Genómica y Bioinformática & Instituto de Biotecnología, Universidad Mayor, Santiago, Chile	L, I

OU	Oswaldo <b>Ulloa</b> , oulloa@udec.cl	Departamento de Oceanografía, Universidad de Concepción, Chile	L, I
GE	Ger <b>van den Engh</b> , ger.engh@me.com	BD Advanced Cytometry group, Seattle, USA	L, I
DV	Daniel <b>Vaulot</b> , vaulot@sb-roscoff.fr	Station Biologique de Roscoff CNRS & Université Pierre et Marie Curie, France	L, I
MV	Mónica <b>Vásquez</b> , mvasquez@bio.puc.cl	Microbial Ecology & Environmental Toxicology, Pontificia Universidad Católica de Chile, Santiago, Chile	Y, L, I
PV	Peter Von Dassow; pvondassow@bio.puc.cl	Departamento de Ecología Facultad de Ciencias Biológicas Pontificia Universidad Católica de Chile	L, I

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Seventh Latin American Microbiology Postgraduate Course on "Ecology and Diversity of marine Microorganisms", (ECODIM-VII), offered by the Austral Summer Institute, University of Concepción & the Pontificia Universidad Católica de Chile, at Las Cruces, Chile, January 8 - 28, 2012

<http://www.profc.udec.cl/ecodim/>

#### Abbreviations

I	Instructor
H	Host
HL	Housing and Logistics
L	Lecture / Lecturing / Lecturer
TA	Technical Assistant
Y	Symposium Presentation / Speaker / Organizer
	Course activities open to the interested public

