PhD IN ENVIRONMENTAL SCIENCES

Dear Students, this short guide carries a first piece of information which might be useful to get acquainted with our administrative proceedings.

General organization

Change in the rules from 34th cycle

In early October 2018 the PhD Faculty Board approved a change in the rules.

Starting from 34th cycle each student is required to:

- attend a series of teaching activities offered by the PhD course for a total of at least 120 hrs during the first 18 months;
- Alternatives may be proposed should the following requirements be simultaneously met:
    - the student already possess a documented background on the topic;
    - the course proposed as an alternative is at least at MSc level;
    - PhD Coordinator/Faculty Board give their consent.

Moreover, starting from her/his 2nd year, each student will give a seminar (scheduled between October and June) about state-of-the-art of her/his scientific research (possibly covering the research conducted in her/his own group).

All PhD student must attend at least 50% of these seminars. It is intended that the above mentioned seminar does not replace the PPT presentation to be conducted before the PhD Faculty Board as end-of-the-year assessment (in early September).

Old rules (up to 33rd cycle)

Since 2007 the PhD Board of Professors has established a system to quantify educational and research activities carried out by PhD students in terms of credits. This system is not supposed to be considered equivalent to the University CFU system and will remain in force inside the PhD course only.

The PhD programme lasts three years and requires each student to sum up a total of 180 of the above mentioned credits, 120 of which being referred to the PhD research, the other 60 being achievable by carrying out the following activities:

- **PhD courses with final examination**: tot hours/3; for courses not belonging to the "PhD teaching annual planning" students must submit a request to the Board of Professors/PhD Coordinator if they wish them to be recognized in terms of credits. In case no final examination test is provided the Board of Professors/PhD Coordinator shall assess how many credits to award.
- **Workshop/Congress attended**: 1 credit for each
- **Poster/oral presentations in workshops and scientific events**: 2 credits for each

- **Tutoring**: tot hours/5; no more than 12 credits (unless the activity is assigned as a result of a public competition, credits will be recognized upon request to the PhD Coordinator/Board of professors - to be submitted before the activity has started)
- **Publication in national scientific journals**: 1 credit for each
- **Publication in international scientific journals**: 2 credits for each
- **Stage in a foreign country for research activity**: 2 credits per month
- **Support to University professors for their lectures**: tot hours/6; max 6 credits per year.

Any other activity performed but not included in the list can be submitted to the Board of Professors/PhD Coordinator to assess whether it can be recognized in terms of credits.

Students are required to send any supporting document to the PhD secretariat (dottorati.dais@unive.it).

A list of all the activities performed (and corresponding estimated credits) will be made available to each student on a semi-annual basis by means of a Google Drive xls file.

Teaching programme for academic year 2018-19

Within the above-mentioned general guidelines, the activities for students enrolled in the academic year 2018-19 are as follows:

Mandatory courses

APPLICATIONS OF COMPLEX SYSTEMS SCIENCE

Lecturer: prof. Francesco Gonella (DSMN Dept. - Ca' Foscari University)

Venue: Ca' Foscari Scientific Campus - via Torino, Mestre

Schedule: tentative period Feb 2018 or March/April 2018 (daily scheduling to be defined, 30 hrs)

Summary: Main objective: to introduce and illustrate the modern methodological approaches that, since the 70s and 80s, have allowed to develop the scientific study of systems since then considered unmanageable, due to the complexity of their operation and evolution.

Content:

- Principles of Systems Thinking. The systems zoo.
- Complex System. Non-linear systems. Cahos.
- Self-organization. Critical states. Emergent properties. Catastrophies.
- Embodied Energy. EMergy and sustainability.

Resources: books and material will be provided by the lecturer.

Assessment method: based on exercises performed during the lectures as well as on homework assignments.

ENVIRONMENTAL DATA ANALYSIS

Lecturer: prof. Marco Marozzi (DAIS Dept.)

Venue: Ca' Foscari Scientific Campus - via Torino, Mestre

Schedule: 10 days (5 weeks), 2 hour lecture and 1 hour practical each day. http://www.unive.it/pag/7914/

Summary: The course provides an introduction to environmental data analysis using R, a free software environment for statistical computing and graphics (www.r-project.org). Other programs are considered as well.

Learning prerequisites: Basic informatics, basic mathematics, basic statistics.

Contents (may vary according to students' background):

- Basic R programming. Logical expressions. Vectors, matrices and data frames. Reading, writing, editing data. Conditional execution. Loops. How to speed up R code. Contributed packages.
- Basic computational statistics. Bootstrap and permutation methods. Plotting.
- Regression models. Estimation and hypothesis testing. Goodness of fit.
- Time series analysis. Trend and Seasonality. ARIMA models. Forecasting.
- Case studies.

Resources: open source books on R, scientific papers, lecture notes

Assessment method: Paper

INTRODUCTION TO GIS (Geographic Information System)

Lecturer: to be named

Venue: Ca' Foscari Scientific Campus - via Torino, Mestre

Schedule: each day consists of 3 hours of lectures or practicals. http://www.unive.it/pag/7914/. Tentative period: late may 2019.

Summary: The aim of the course is to provide a basic knowledge of tools for modelling geographic information.

Content: During the course the students will deal with data entry and conversion, they will practice basic analysis on geographic data and different techniques to show the results on maps. Further they will learn how to filter geographic data to extract the relevant part for more advanced analysis. During practicals the students will use different tools: Google Maps and Google Earth, both freely available, for the first experiences with geographic data visualization and Quantum GIS (QGIS)/Geographic Resources Analysis Support System (GRASS), an open source GIS, for more advanced usage. Further they will be introduced to the basics of one commercially available GIS.

Resources: Useful readings: Open Source GIS: A GRASS GIS Approach. Third Edition. Markus Neteler and Helena Mitasova, 2008. The International Series in Engineering and Computer Science: Volume 773. 406 pages, Springer, New York.

Assessment methods: to be defined

Optional courses

Chemical Speciation of Metal Trace Elements in Water (30 hrs)

Lecturer: prof. Gabriele Capodaglio (DAIS)

Venue: Ca' Foscari Scientific Campus - via Torino, Mestre

Date and time:

- 25/03, 9:00-12:00 classroom D
- 25/03, 14:00-17:00 classroom D
- 26/03, 9:00-12:00 to be defined
- 26/03, 14:00-17:00 classroom Delta 2B
- 27/03, 9:00-12:00 classroom Delta 2C
- 27/03, 14:00-17:00 classroom Delta 2C
- 28/03, 9:00-12:00 classroom Delta 2C
- 28/03, 14:00-17:00 to be defined
- 29/03, 9:00-12:00 classroom Delta 0B
- 29/03, 14:00-17:00 classroom Delta 0B

Syllabus:

- Aims: The course aims to provide students with knowledge on importance of trace elements chemical reactivity in natural waters. It will be introduced the importance to differentiate the chemical forms assumed by trace elements in order to predict their behavior in the environment and the different approach applied to study their speciation.
- Requisites: Intermediate knowledge of instrumental analytical chemistry and general and inorganic chemistry.
- Contents:
    - Introduction to the metal speciation and chemical reactivity in water
    - Concentration of organic and inorganic compound in natural waters
    - Relation between reactivity and behavior of metals in aquatic systems
    - Interpretation of complexation equilibria.
    - Chemical and physical approach to differentiate metal forms.
    - Fractionation methods and direct determination of species
    - Fractionation based on single method and multiple methods.
    - Problems in the study of chemical speciation of metals.
    - Introduction at the detection window of analytical chemistry methods.
    - Simplified models to study complexation processes in complex systems
    - Literature examples on metal speciation in marine and fresh water environments.
- Reference texts:
    - Journal publications
    - J. Buffle. Complexation Reactions in acquatic systems. An Analytical approach. Ellis Horwood LtdJ. Wiley & Sons.
    - G.E. Batley. Trace element speciation: Analytica Methods and Problems. CRC Press Inc.

Ethnobotany (30 hrs)

Lecturer: prof. Renata Soukand

Venue: Ca' Foscari Scientific Campus - via Torino, Mestre

Date and time:

- 25/02, 9:00-12:00 classroom A
- 25/02, 13:00-16:00 classroom D
- 11/03, 9:00-12:00 to be defined
- 11/03, 13:00-16:00 classroom D
- 18/03, 9:00-12:00 to be defined
- 18/03, 13:00-16:00 classroom D
- 08/04, 9:00-12:00 classroom A
- 08/04, 13:00-16:00 classroom D
- 15/04, 9:00-12:00 classroom A
- 15/04, 13:00-16:00 classroom D

Syllabus: the course is optional and will include in-classroom lectures, fieldwork and seminars. Ethnobotany is the sub-discipline of ethnobiology, it studies the relationship between plants and human societies. The course will give the overview of methodologies and approaches in ethnobotany, historical and current trends, challenges and applications. Students will also have the possibility to receive interview training and field experience through independent or group work.

Other courses offered by Phd Office

Courses and seminars [ITA]

From 34th cycle on

Students are required to attend at least 2 teaching activities chosen among the ones managed by Ca' Foscari PhD Office, language courses excluded.

Up to 33rd cycle

Students will have the possibility to apply for other Schools and courses (even held outside Ca' Foscari. Minimum required level: M.Sc. courses) by submitting their requests to PhD Coordinator/Board of Professors.

Admission to final exam procedure (3rd year students only)

a) Within September 15th the PhD Board of Professors, based on the final reports submitted by each supervisor, will decide on admission to final exam procedure

b) If the student is admitted, the PhD Board will appoint two external referees

First step in final exam procedure: referees and review

a) **Within October 1st**: Submission of an advanced draft of the thesis by each student for the external referees assessment. This review can last up to 45 days

b) **Within November 15th**: Referees will submit two separate reports and suggest admission to final examination or a substantiated request for extension (6 months)

Second step in final exam procedure: defence

a) **If admitted to final exam**:

- Within December 12th: submission of final version of the thesis by the student, including any possible modification suggested by the referees

- Defence session: from mid-January to the end of March

- The defence committee is made up by a Ca' Foscari faculty, at least one of the external referees, and a third member. This core set may be extended adding up to 2 members coming from national/international research centres, when deemed necessary

b) **If 6 additional months are required**:

- **Within March 1st:** : PhD Board and supervisor evaluate the progress in the revision of the thesis and can propose:
  - admission to the final exam procedure
  - rejection of the student

- In case the student is admitted to final exam procedure, the PhD Board will have to appoint two external referees. The PhD Board can decide whether to confirm the initial external referees or to change them.

- **Within March 20th**: Submission of an advanced thesis draft for the referees. The review lasts about 40 days

- **Within May 2nd**: Report by referees. At this stage, they can suggest further changes to be implemented within 30 days and discussed during the defence

- **Within May 31st**: submission of the final version including any suggested modifications by referees

- **Defence session: from July 1st to September 15th**

- The defence committee is made up by a Ca' Foscari faculty, at least one of the external referees, and a third member. This core set may be extended adding up to 2 members coming from national/international research centres, when deemed necessary

NB: dates could be subject to slight changes. Final deadlines will be notified when officially scheduled.

Information on the administrative steps of final exam are also available on the relevant websites:

a) Submission of final exam request to the Administrative offices of Ca' Foscari
http://www.unive.it/pag/7729/ [ITA] http://www.unive.it/pag/20435/ [ENG]

b) Evaluation of thesis by external referees
http://www.unive.it/pag/7729[ITA]
http://www.unive.it/pag/20435[ENG]

c) Thesis submission and anti-plagiarism verification http://www.unive.it/pag/7744/ [ITA]
http://www.unive.it/pag/20433 [ENG]

Requirements of the PhD thesis

The PhD thesis must be structured as a coherent research project developed during the PhD course. It can include the results of papers already published in journals but it must not be a simple collection of unrelated papers not belonging to a systematic research project.

Doctor Europaeus label

The Doctor Europaeus title is an additional label attached to the Research Doctorate Degree issued nationwide. Full description and information can be read on the following website:

http://www.unive.it/pag/7882/ [ITA]

http://www.unive.it/pag/20450/ [ENG]

Any student interested in applying for the Doctor Europaeus label must be sure to meet all the requirements and must inform the Secretariat of the Programme before the final report has been submitted to the PhD board (approximately by August).

Co-tutelle and double degrees

For any information on co-tutelles and doubles degrees, please have a look at the following links:

http://www.unive.it/pag/7882/[ITA]

http://www.unive.it/pag/20450/ [ENG]

Publishing

ARCA catalogue

Each PhD student is required to include any of her/his publications (conference proceedings, working papers, article in journals, chapter of book etc.) inside the institutional Open Access Ca' Foscari research archive (ARCA). A user's guide can be found on the relevant website (https://arca.unive.it/)

ORCID CODE - *http://orcid.org*

Each student is also required to register to ORCID (Open Researcher and Contributor ID) and to communicate his/her ORCID code to the Secretariat after she/he's been regularly registered at Ca' Foscari University as PhD student.

Administrative regulations and procedures

In addition to the fulfilment of the above mentioned requirements, PhD students have to be fully aware and comply with the PhD programme general regulations of Ca' Foscari University, reported at http://www.unive.it/pag/8256/.

Rules and procedures are provided with a focus on: enrolment to subsequent years, suspensions, withdrawals and exclusions, scholarships and grants, outside employment during the PhD programme, together with further aspects of the PhD student's career.

Mobility

1. Study abroad period

Each PhD student is required to schedule, together with her/his supervisor, a period of research activity to be spent in a foreign University or research centre for at least 3 months, usually during the 2nd year of study.

2. Mobility funding

PhD students are granted an annual sum of 1534,33€ (for their 2nd and 3rd year) to be spent for mobility. This sum can be cumulated from second to third year but should be spent, in any case, within September 14th. Any student planning – with supervisor's agreement - to attend a conference or a summer school is required to fill in an online request following the instructions available at the following links:

http://www.unive.it/pag/7719[ITA]

http://www.unive.it/pag/20459/ [ENG]

No ticket purchase or any other personal arrangements must be done without the online authorization by the PhD Coordinator.

It is important to read and fully understand the regulations on expenses reimbursement. Please read the handbook which is available on the above stated website.

3. Scholarship increase for mobility

Any student conducting his/her research, training and studies in a foreign university or a foreign research body, will officially be recognized for a 50% increase in the scholarship, under authorization by the Teaching Committee of the PhD Programme. The maximum length of time to be spent abroad equals 18 months.
Detailed info can be found at this link: http://www.unive.it/pag/20459/

Faculty Board

	prof. Bruno Pavoni, **PhD Coordinator** brown@unive.it
	dr. Dario Battistel dario.battistel@unive.it
	prof. Enrico Bertuzzo, **Vice Coordinator** enrico.bertuzzo@unive.it
	prof. Gabriella Buffa buffag@unive.it

	dr.ssa Cristina Cavinato cavinato@unive.it
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	prof. Barbara Stenni barbara.stenni@unive.it

	prof. Annamaria Volpi Ghirardini voghi@unive.it
	dr. Andrea Bergamasco (Iamc-CNR, Venice) andrea.bergamasco@ismar.cnr.it

PhD course staff

Nicola Miotello

Segreteria didattica Dais

dottorati.dais@unive.it

Email account

Once enrolled as PhD student, you are part of Ca' Foscari University of Venice and this means that:

- you will receive an email account (studentnumber@unive.it) which will be the only email address used by our Central Administration to communicate on an official basis with you.
- you may apply for a name.surname@unive.it email. To do so please read here: http://www.unive.it/pag/11398
- once you've got your email address, you will be able to **feed your personal webpage** with your CV, publications and photo.

Links to Ca' Foscari University of Venice

The following are specific pages of Ca' Foscari website in which you will find useful information.

- **CA' FOSCARI ENGLISH WEBSITE**
  http://www.unive.it/pag/13526/
- **INTERNATIONAL WELCOME DESK – FOR FOREIGN STUDENTS**
  http://www.unive.it/welcome

- **ENROLMENT TO PHD PROGRAMMES 2017-18**
  http://www.unive.it/pag/28045
- **POSTGRADUATE ADMINISTRATIVE OFFICE**
  http://www.unive.it/data/strutture/111618
- **ADMINISTRATIVE PROCEDURES FOR PHD STUDENTS**
  http://www.unive.it/pag/7717/ [ITA] http://www.unive.it/pag/20463/ [ENG]
- **HOUSING OFFICE AND CANTEENS**
  http://www.unive.it/pag/19768
- **MULTISERVICE CARD**
  http://www.unive.it/pag/16409/
- **MEDICAL ASSISTANCE/LOCAL PHYSICIAN**
  http://www.unive.it/pag/12525/

Ca' Foscari Doctoral Office and Postgraduate Administrative Sector are the offices in charge of the management of PhD students from an administrative point of view (from enrolment throughout graduation).
Students are asked to become familiar with the websites:
http://www.unive.it/pag/252/ [ITA]
http://www.unive.it/pag/25684/ [ENG]
http://www.unive.it/pag/20069/

Last review: Feb 26th 2019