

## TEACHING PLAN AND PROCEDURE FOR CURRICULAR INTERNSHIPS

### 1. Basic description

**Name of the course:** Curricular Internship

**Academic year:** 2019/2020

**Year:** 3rd

**Term:** 2nd term

**Titulación / Estudios:** Bachelor Degree in Bioinformatics

**Code:** 50920

**Number of credits:** 20

**Total number of hours committed:** 500 hours

**Teaching language:** english

**Lecturer:** Cedric Notredame - [cedric.notredame@esci.upf.edu](mailto:cedric.notredame@esci.upf.edu)

### 2. Presentation of the course

The aim of the curricular internship (CI) is to help the students developing new skills in a professional context. It is meant to complement the theoretical skills acquired in other subjects.

The CI is elective and distinct from the TFG. It brings 20 ECTS credits.

Students will have to apply on their own for an Internship, with the help and guidance of their academic tutor. The internship will be required to have a precise objective, in line with the degree and approved by the CI Lecturer. This objective may include a research project or training on a specific methodology. During the CI students will divide their time between the host institution, tutorials and independent work dedicated to reporting (Annex 4,5).

The evaluation will take into account both the preparation of the internship, feedback from the host institution and reporting by the student.

The only part of the subject that may be recovered is the final report.

### 3. Competences to be worked in the course

Activity Type	Hours	Presence
Practice	375	100%
Tutoring	3x20 minutes	100%
Individual Work	124	0%
Total	500	

<b>Core and general competencies</b>	<b>Transversal and specific competencies</b>
<p>CB1. That the students have demonstrated to have acquired the knowledge and understanding in a field of study that starts from the basis of general secondary education, and is typically at a level that although it is supported by advanced textbooks, includes some aspects that involve knowledge of the forefront of their field of study.</p> <p>CB2. That the students know how to apply their knowledge to their work or vocation in a professional manner and have competencies typically demonstrated through devising and defending arguments and solving problems within their field of study.</p> <p>CB3. That the students have the ability to gather and interpret relevant data (usually within their field of study) to make judgments that include reflection on relevant social, scientific or ethical subjects.</p> <p>CB4. That the students can convey information, ideas, problems and solutions to both</p>	<p>CT1. Mastering oral and written communication in English.</p> <p>CE11. To participate in the development of a bioinformatics research project, defining the current state of the subject and possible strategies to carry it out.</p> <p>RA11.1. Set out research hypothesis from bibliographic data, experiments and computer calculations.</p> <p>RA11.2. Apply elements of decision making in specific situations.</p> <p>RA11.3. Apply techniques, tools, and skills in the practice of bioinformatics</p>

<p>specialist and non-specialist audiences.</p> <p>CB5. That the students have developed those skills needed to undertake further studies with a high degree of autonomy.</p> <p>CG1. That the students will acquire an intra-and interdisciplinary training in both computational and scientific subjects with a solid basic training in biology.</p>	
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#### 4. Duties of Academic and External Tutors

The **Lecturer** responsible for this subject will be the **Academic Tutor**. He/she will have the following tasks:

- Validate the internship offers
- Guide the student through a minimum of three individualized tutoring sessions, depending on the student's abilities, directing them to the most appropriate place according to their profile; help them solving any doubt that may arise during selection.
- Act as academic tutor representative of the university.
- Monitor the internship both at the level of the host institution and at the level of the student, by supervising the tasks and assignments.
- Evaluate and possibly authorize the modifications that occur in the training project.
- Carry out the evaluation process of the student's internship

The external tutor from the host institution will have to:

- Provide the student with a topic and a description of the tasks involved in the Internship (Annex 2)
- Welcome the student to the organization and organize their activity to comply with the objectives established in Annex 2.
- Supervise their activities and guide and control the development of the practice.

- Issue the final evaluation report no more than one week after the end of the Internship.

## 5. Schedule

Table 1.

Name	Date	Action
CV	15/11/19	Upload Document
Tutoring #1	10/19	Meeting
Applications	10-11/19	Activity
Acceptation	11/19	Activity
Convention	30/11/19	Upload Document
Tutoring #2	12/19	Meeting
Internship	07/01/20 - 16/03/20	
Final Grade Project	25/03/20 - 18/06/20	
Internship + Final Grade Project	07/01/20 - 18/06/20	
Incorporation Report	15/01/20	Upload Document
Tutoring #3	02/20	Meeting
Mid Term Report	15/02/20	Upload Document
Request for Host Tutor Evaluation Report	01/03/20	Communication
Final Report	20/03/20	Upload Document
Final Grades Publication	02/04/20	Communication
Final Report Recovery	12/07/20	Upload Document
Final Grades Publications Recovery	16/07/20	Communication

## 6. Methodology and Working Plan

The Internship module has been organized in 4 phases that are briefly described below. **Each phase will involve the mandatory uploading of specific documents on Aul@-ESCI**

**Table 2.**

Phase	Calendar	Tasks	Objectives, results	Document to upload on Aul@-ESCI	Date
First phase: Application Preparation	June-October	Tutoring Session #1 (October)  5h - Individual Work	Preparation of a CV, Identification of a suitable internship, application.  Result: CV ready and good understanding of the most suitable environment for internship.	CV	15/11/19
Second phase – Internship Application	June-November	20 hours of personal work - identification of hosting institutions, applications	Applications  Result: Each student has a an internship The student must sign a convention (provided by ESCI) and a statement of commitment (Annex 3)	Project	30/11/19
<b>Third phase: Internship initiation</b>	December-January	Tutoring Session #2 (December)  20 hours - Individual work - synthesis of scientific material related to the project or the methodology being deployed. Drafting of a background document.	The student must upload the incorporation report (cf section 5.4 and Annex 7) and later deliver a one page mid term report (Annex 4) outlining the structure of the final report  Results: mid term report	Incorporation Report (annex 7)	15/01/20
				Midterm Report (Annex 4)	15/02/20
<b>Fourth phase Internship and final report</b>	February-March	375 hours - Work in the host institution	The student must carry out the project and preparation of the final report by maintaining a diary lab book. The final report should follow	Final Report (annex 5)	20/03/20
				Recovery (Annex 5)	12/07/20

		100 hours - Individual work  Tutoring Session #3 (February)	the provided template (Annex 5)  Result: final report		
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**Tutoring Sessions.** The mandatory tutoring sessions will be arranged by the lecturer who will set meeting times at least one week in advance. Under exceptional circumstances, these sessions will take place remotely, either by phone or video conferences. Non mandatory sessions may be carried out using the most effective mean (one to one meeting, emails, video/phone calls). **NOTE:** Students are encouraged to contact the Lecturer as early as possible with respect to any issue arising in the context of the internship. **The pedagogic team will always do its best to insure that students do not get penalized as a consequence of circumstances out of their control.**

**Reports.** Students must follow the format (Annex 4,5) and reports. However, depending on the constraints of the internship and **only after agreement with the Lecturer** other types of formats may be accepted (e.g. software, software documentation, database documentation, high quality lab book, Jupyter lab book, etc, etc). ***In case of any doubt on the final format, students are encouraged to discuss the matter with the Lecturer as early as possible.***

## 5.1. Application Preparation

**Table 3.**

Activity	Date of delivery
First Mandatory Tutoring Session	<b>10/19</b>
CV	<b>15/11/19</b>
Internship Identification	<b>15/11/19</b>

**CV.** Elaboration of a CV in European format and a mandatory tutoring session during which the application strategy and the potential host institutions will be discussed.

**First mandatory tutoring session:** students must come with a least of the three internship they find the most relevant. They must have prepared a justification for their choice and uploaded their CV.

### **Internship positions.**

Two types of internship positions may be considered:

*Public internship.* The internship positions are communicated via the Aula global to the students as they come, and a full list is maintained in the aula.

*Personal Internship:* Internship secured through spontaneous applications. Students are also encouraged to contact host institutions and discuss with them a potential internship. If the discussion is successful, the students should then ask the institution to fill up an Internship proposal (Annex 1) and **communicate it to the Lecturer. When communicating the proposal to the lecturer, it must be made explicitly that the proposal is earmarked for a specific applicant.** If the proposal is validated by the Lecturer, the student will be allowed to apply.

## **5.2 Internship Application**

This phase will take place between October and November.

**Table 4.**

<b>Activity</b>	<b>Date of delivery</b>
Applications	10-11/19
Acceptation	11/19

**Applications.** Students can apply any time a project is posted. Unless they have a position secured through spontaneous applications, **students should apply for at least three internships and should have a maximum of three simultaneous application (i.e. another application can be made after rejection so that the total of pending applications does not exceed 3).** Each application should be personalized. Mass mailing is explicitly forbidden and will lead to suspension. **Students who have not be admitted for an**



**internship by the end of October MUST urgently contact the lecturer. They will receive a mandatory assignment.**

**Acceptation.** Students must can only accept **ONE** offer. They will normally not be allowed to change internships except under exceptional circumstances defined by the ESCI internship general rules. The duration of the process for preparing the convention is roughly one week and **no work should start before the convention has been signed.**

Once the student has received an offer, the acceptance process must proceed as follows:

1-The student must immediately confirm their acceptance by e-mail to the host institution and CC the lecturer and the degree secretary (**[ainhara.delpozo@esci.upf.edu](mailto:ainhara.delpozo@esci.upf.edu)**). The student must asoo fill the online form (Annex #2) required to start the paperwork.

2- When the student receives the convention from ESCI, he/she must notify notify the tutor so that a meeting can be arranged to sign the convention during the second tutoring session (cf 5.3). The student must then get the convention signed by the host institution.

3-The student must bring the signed copies to ESCI (**[ainhara.delpozo@esci.upf.edu](mailto:ainhara.delpozo@esci.upf.edu)**)

**Note: Internships carried out abroad.** The student will be responsible for requesting the visa, when appropriate, through the local country consular representation. The process of obtaining it can be quite long, so it is recommended that it be done well in advance. More information in: Ministerio de Asuntos Exteriores y de Cooperación, apartado "Servicios al ciudadano > Si viajas al extranjero" (<http://www.maec.es>)

### **5.3 Internship Preparation**

During this period, the student will have to undergo the second mandatory tutoring session with the lecturer .

**Table 5.**

<b>Activity</b>	<b>Date of delivery</b>
Second Mandatory Tutoring Session	12/19

**Second Mandatory tutoring session.** The student will sign the convention and statement of commitment. The student will then pitch the project in 5 minutes and the Lecturer will explain to the student the educational purpose of the internship and the expected reporting. They will discuss the project together.

#### 5.4. Internship and Reporting.

This phase will start when the student starts the internship in the host institution. This period will include the following reporting exchanges

**Table 6.**

Activity/Document	Action	Period/delivery date	Template
Internship	Presential	07/01/20 - 16/03/20	
Incorporation Report	<b>Upload Report</b>	<b>15/01/20</b>	Annex 7
Mid Term Report	<b>Upload Report</b>	<b>15/02/20</b>	Annex 4
Mandatory Tutoring #3	Meeting	02/20	
Request of Host Tutor Report	<b>Communication of Annex 6 to Host tutor</b>	<b>01/03/20</b>	Annex 6
Final Report	<b>Upload Report</b>	<b>20/03/20</b>	Annex 5
		<b>12/07/20</b>	Annex 5

**Internship.** During the internship the student is expected to be physically present at the host institution during the hours agreed with the host tutor in the convention. In total the student should work 375 for the host institution complemented with 100 hours of personal work for reporting and associated tasks.

**Incorporation Report.** During the first week of incorporation of the student the student will have to upload on Aul@-ESCI The following information (**Annex 7**):

**Midterm report.** This report will be a first draft of the introduction of the final report (**Annex 4**) that will have to be uploaded on Aul@-ESCI

**Third Mandatory Tutoring Session.** During this session the student will report on the progresses made during the first part of the internship.

**Report of Host Institution Tutor.** The student must communicate to the host tutor the evaluation report (Annex 6). The model must be sent to the host tutor with the academic tutor and the degree secretary ([ainhara.delpozo@esci.upf.edu](mailto:ainhara.delpozo@esci.upf.edu)) in CC, with the following subject: **Report of Host Institution Tutor.**

**Final Report.** Students must upload the final report in Aul@-ESCI following the guidelines in **Annex 5**.

## 6. Evaluation

The evaluation of curricular practices is conditioned By the Royal Decree 592/2014, of July 11. The Royal Decree determines that the practices must be evaluated through, at least, a final report and the tutor report from the host institution tutor.

In accordance with the previous regulation, in the case of ESCI-UPF internships will integrate the following elements:

### 1-Application - 5%

- CV: quality of the CV
- Applications: pro-activity of the student, quality of the applications (i.e. effort at making sure the application is targeting the host institution)

This item counts for 5% of the total and a minimum of 5 points is required.

### 2-Introduction report - 20%

This item (Annex 4) will be evaluated after its presentation during the tutoring session. It counts for 10% of the total and a minimum of 5 points is required.

### 4-Host institution Tutor report - 50% - Minimum 4 points

The tutor of the host institution evaluates the student internship(Annex 5). This item counts 50% of the final grade of the subject. A minimum of 4 points is required in this item.

### 5-Final Report - 25% - Minimum 5 points

The final report (Annex 5) will count for the remaining 25% of the final note.

Synthesis activities.

Element	Evaluation	Evaluator		Activity	Nature		Weight (%)
	Compulsory	Lecturer	Host Tutor		Indiv	Grupo (#)	
CV and Applications	X	X		Continuous	X		5 %
Midterm Report	X	X		Continuous	X		20%
Host institution Report	X		X	Continuous	X		50 %
Final Report	X	X	X	Synthesis	X		25 %

**Table 6.**

<b>Request for Host Tutor Evaluation Report</b>	<b>01/03/20</b>
<b>Final Report</b>	<b>20/03/20</b>
<b>Final Grades Publication</b>	<b>02/04/20</b>

#### Recovery criteria

-The elements of continuous evaluation are not recoverable.

-The element of evaluation of synthesis that is recoverable is the final report. If the student has not achieved a minimum of 4 points in the final report, he/she will be able to present it again (i.e. upload it a second time on **Aul@-ESCI**) as a recovery of the synthesis activity.

## **Annex**

**Annex 1 – Internship offer**

**Annex 2 – Description of the Internship**

**Annex 3 – Statement of Commitment**

**Annex 4 – Midterm Report**

**Annex 5 – Final Report**

**Annex 6 – Report of the host institution Tutor**

**Annex 7 - Incorporation Report**

## **Annex 1 – Internship Offers Form**



# **PROPOSAL FOR INTERNSHIP/FINAL GRADE PROJECT**

## **Bachelor's Degree in Bioinformatics (UPF-UPC-UB-UAB)**

### **HOST Institution/Company**

Name of the Institution/Company:

Main activity:

Address:

City and postal code:

Web:

Telephone:

### **Contact person**

- Name:
- Position:
- e-mail:

## APPLICANT

- ☐ project developed in concertation with <student name>
- ☐ project opened to any applicant having the following qualifications:
  - 
  - 
  - 
  -

## PROJECT

**Title:**

**Description** (*10 lines max*):

### Requirements to be met by the student:

Familiar with Python, C++, willingness to learn C would be a plus. A lot of the work will involve learning, mastering and adapting some of the tools developed within the group (aln\_compare package, Nextflow)

**Duration/Period – select an option**

<b>Internship</b>	07/01/20 - 16/03/20		<b>Second Trimester</b>
<b>Final Grade Project</b>	25/03/20 - 18/06/20		<b>Third Trimester</b>
<b>Internship + Final Grade Project</b>	07/01/20 - 18/06/20		<b>Second+Third Trimester</b>

**Other observations:**

Please, fill out this form and return to [ainhara.delpozo@esci.upf.edu](mailto:ainhara.delpozo@esci.upf.edu)

**Annex 2 – Description of Internship - to be filled by the student.**

[https://docs.google.com/forms/d/e/1FAIpQLScnv7-qLyIOh-8j4mX0FYX7sjeGx4MYSiAr\\_ExGEkwJLG7tHg/viewform](https://docs.google.com/forms/d/e/1FAIpQLScnv7-qLyIOh-8j4mX0FYX7sjeGx4MYSiAr_ExGEkwJLG7tHg/viewform)

## Annex 3 – Statement of Commitment

### STUDENT's COMMITMENT LETTER FOR EXTERNAL PRACTICES

Student name:

DNI:

Email:

Host institution:

According to current regulations for external practices, students have to comply with the following duties during the completion their internships:

- 1) Comply with current regulations regarding internships established by the university. An important element that must be taken into account is that, if the student seriously fails to comply with the agreement, the subject will be suspended.
- 2) Know and complete the training project of the practices following the instructions of the tutor assigned by the collaborating entity and under the supervision of the academic tutor of the university.
- 3) Maintain contact with the academic tutor of the university during the development of the practice and communicate any incident that may occur. The data of the Lecturer
- 4) Provide the Lecturer with the following documentation on the established dates and format.

Document	Deadline	Action
Incorporation Report	15/01/20	Upload Document
Mid Term Report	15/02/20	Upload Document
Final Report	20/03/20	Upload Document
Final Report Recovery	12/07/20	Upload Document

- 5) **The student will send the evaluation report template the host company tutor two weeks before the end of the internship.** The host institution tutor will have to send the completed report to the e-mail of the Lecturer within 15 days after the end of the internship. **The student is responsible for ensuring that the company tutor delivers the report to**

**the teacher responsible for the subject of external internship within the established period.**

I SIGN THE DOCUMENT, AS I HAVE RECEIVED THE WORK PLAN OF THE PRACTICE SUBJECT.

Signature and date

#### **Annex 4 - Mid-term Report**

Students must follow the mandatory reporting format format (Annex 5) and reports. However, depending on the constraints of the internship and **only after agreement with the Lecturer** other types of formats may be accepted (e.g. software, software documentation, database documentation, high quality lab book, Jupyter lab book, etc, etc). In case of any doubt on the final format, students are encouraged to discuss the matter with the Lecturer as early as possible. **Request for other reporting format must be provided along with the mid-term report, as a cover letter.**

- Report cover
  - Title
  - Student Name
  - Host Institution
  - Name of Host Institution Tutor/email
  - Start/End
  
- Summary of the Internship topic, 350 words. This summary should be a first draft of the abstract that will be provided with the final report.

Length: 1 pages max.

- A4 page format
- Times New Roman or Arial font
- At least 11 point size
- Single line spacing
- Margins at least 2cm side and 1.5 cm top and bottom

#### **Annex 5 – Final Report**

Students must follow the format (Annex 4,5) and reports. However, depending on the constraints of the internship and **only after agreement with the Lecturer** other types of formats may be accepted (e.g. software, software



documentation, database documentation, high quality lab book, Jupyter lab book, etc, etc). In case of any doubt on the final format, students are encouraged to discuss the matter with the Lecturer as early as possible.

Length: 15 pages max.

- A4 page format
- Times New Roman or Arial font
- At least 11 point size
- Single line spacing
- Margins at least 2cm side and 1.5 cm top and bottom

## Structure

Cover. Must feature:

- Title
- Student Name
- Host Institution
- Name of Host Institution Tutor/email
- Start/End

**Section 1** - Abstract - 350 words - not included in total page count

**Section 2** - Introduction - 3 pages -

**Section 3** - Material and Methods - 5 pages.

This section must explain the nature of the methods being deployed in the context of the project, describing their relevance and specificity.

**Section 4** - main dissertation - 5 pages

**Case 1.** *Recommended in the case of an Internship followed by a TFG in the same lab.*

This section should read as a grant application and should come along with the following sections:

- Scientific hypothesis - the hypothesis that will be tested.
- Proposed Methodology
- Expected milestones: List the main expected results, provide the timing of when they are expected to be obtained.  
Describe these expected results and explain how they should contribute to the project.
- Contingency plan: describe the alternative plan in case the milestones are not met.

Case 2. Recommended in the case of an Internship based around a scientific project.

Results and Discussion. This section should read like the research section of a scientific publication. It should present the results in the light of the scientific question asked in the introduction.

Case 3. Recommended in the case of technical and engineering work.

Development. This section should describe how the section 3 methods were used to develop a tool, implement a software and in general carry out some engineering work. This section should describe all the new resources (web site, documentation, repositories) and provide an overview explicating the relationship between all these resources.

Students should feel free to select any of these three solutions, they may also propose other types of content but they should get in contact with the Lecturer before doing so. get in contact with the Lecturer.

Section 5. Conclusion - 2 pages

Section 6. Bibliography - 25 references max - **not included in page count**

Section 7. Tables - two tables max - **included in page count**

Section 8. Figures - Maximum of 4 sub panels (i.e. 4 Figures, or 2 figures with 2 sub panels each, etc) - **included in page count**

Important Note:

**Supplementary material** will be accepted but not reviewed. The reports should therefore be self contained without this extra information.

**Length Limitations are compulsory.** They are meant to reflect similar restrictions imposed on scientific production. Learning how to concisely express a problem and its solution is an essential skill to acquire. For this reason, **submissions longer than twice the limit will lead to a suspension** and the notation of **submissions otherwise over the limit will have their evaluation lowered by a 20% penalty**. No exception will be made.

## **Annex 6 – Report of the host institution Tutor**

This report must be sent to the host institution tutor by the student. It is the responsibility of the student to insure this report is sent in time.

**Thank you for hosting one of our students in your institution. Please fill in the following report and send it to: [cedric.notredame@esci.upf.edu](mailto:cedric.notredame@esci.upf.edu) with [ainhara.delpozo@esci.upf.edu](mailto:ainhara.delpozo@esci.upf.edu) in CC**

Email:

Total Number of hours:

**Mark with an X the relevant value (0: lower 10: Maximum)**

[illegible]

[illegible]

15. English											
16. Other language if required:_____)											
17. Understanding of the scientific problems											
18. Understanding of the methodologies											

## 2. Activities Carried Out

**3. Has the student made a worthy contribution to the activity carried out in the host institution**

**Yes \_\_\_\_**

**No \_\_\_\_**

**4. Additional Comments**

**5. Global Evaluation (0-10, notes below 4 result in a failed subject)**

**Date and Signature**

### **Annex 7 – Incorporation Report**

- Start of the internship period:
- Name and surname of the host tutor:
- Email of the host tutor
- Phone of the host tutor:
- Any incident detected at the beginning of the stay related to the training