UNIVERSITÀ DEGLI STUDI DI TORINO

"Annex 1" updated on 1st June 2020
(The updates and the corrections are highlighted in red colour)

(ANNEX 1)

CALL FOR PHD POSITIONS – 36th cycle
PHD PROGRAMME IN PHARMACEUTICAL AND BIOMOLECULAR SCIENCES

PhD Programme Coordinator	Prof. Gianmario Martra
Department	Chemistry
PhD Programme Length	3 years
PhD website	http://dott-sfb.campusnet.unito.it/do/home.pl
Course start date	1st October 2020
Departments involved in PhD programme	Department of Chemistry, Department of Pharmaceutical Science and Technology, Department of Life Science and Systems Biology, Department of Public and Pediatric Health Sciences, Department of Molecular Biotechnology and Health Sciences

Positions offered by the PhD Programme	
n. 12 positions with scholarship, of which n. 3 reserved to candidates with international qualifications	of which: - 7 scholarships are funded by the University of Torino - 1 scholarship is funded by Department of Clinical and Biological Sciences - 1 scholarship funded by SOREMARTEC ITALIA S.r.l. - 1 scholarship funded by Dipartimento di Biotecnologie Molecolari e Scienze per la Salute - 1 scholarship funded by University of Torino (cofunded by Dipartimento di Scienze e Tecnologie del Farmaco) - 1 scholarship co-fundeb by CNR (Centro Nazionale delle Ricerche) and by Bracco Imaging S.p.A.

n. 4 positions without scholarship
n. 1 apprenticeship position for Higher Training and Research with GREEN HAS ITALIA S.p.A. *(subject to approval by the Regione Piemonte (Piedmont Region). This position is linked to specific research topic)*
n. 1 apprenticeship position for Higher Training and Research with BIRRIFICIO BALADIN s.s. agricola *(subject to approval by the Regione Piemonte (Piedmont Region). This position is linked to specific research topic)*

CALL FOR ORDINARY POSITIONS	
Admission procedure for ordinary positions	
Assessment of qualifications, research project and interview	
Qualifications to be uploaded on the on-line application	
· Research project (max 400 words, references excluded) written in English by the applicant (see section "Further information on examination" below) choosing a title among the list provided by the PhD Programme · Abstract Thesis 2nd Cycle Degree (see section "Further information on examination" below) · Publications (max 3) · Other qualifications (see below)	
Assessment criteria for ordinary positions and for one separate ranking lists	**maximum score 100 points**
Assessment of qualifications:	**maximum score 20 points**

UNIVERSITÀ DEGLI STUDI DI TORINO

Final grade of second cycle degree: •110 e lode _____ 12 points •110 _____11 points •107-109_____ 10 points •104-106 _____ 9 points •99-103_____ 8 points •≤98_____ 7 points Weighted average of list of examinations taken during the Laurea Magistrale/2nd cycle degree or Laurea Magistrale a Ciclo Unico for candidates applying under condition: •Average from 29/30 to 30/30 ____12 points •Average of 28/30 ____11 points • Average from 26/30 to 27/30 ___ 10 points • Average of 25/30 _____9 points • Average of 24/30 _____8 points points • Average < 24/30_____ 7 points The average is rounded up if the decimal part is ≥ 5, otherwise it is rounded down (<5).	maximum score 12 points
Thesis Abstract of 2nd Cycle Degree	maximum score 3 points
Publications 1 point for each publication, for a maximum of 3 publications Only published or accepted JCR papers relevant to the PhD programme will be considered.	maximum score 3 points

Other qualifications: • Honours for the dissertation ("menzione", "dignità di stampa", awards): **1** point • Second/additional master degree: **2** points • Italian specialising master 1st and 2nd level degree if relevant to the PhD Programme: **1** point • Non-university master : **0.3** point • Post-graduation research periods (supported by an official declaration of the hosting laboratory): **1.2** points per year (and in proportion for shorter periods) • Any other pertinent research specialising course: **0.5** point • Communications to congresses: 0.1 points (max 5 communications on topics relevant to the PhD programme) • For candidates applying under conditions: **1** point for at least 3 examination passed with laude Any qualifications related to professional skills, not pertinent with research activity, will not be considered	maximum score 2 points
Minimum threshold for admission to the next examination	***11 points***
Research Project (see the section "Further information on examination")	**Maximum score 20 points**
Minimum threshold for admission to the interview	***11 points***
Interview	**Maximum score 60 points**
Minimum threshold for passing the interview	***40 points***

Further information on examinations:

1) Knowledge of the English language for scientific purpose is compulsory.

2) **Thesis Abstract**: max 400 words. The candidate must develop the following points:
a) scope of the thesis;
b) methods used;
c) results achieved

Moreover, the name of the supervisor must be indicated

3) The **Research project** must be written in English, max 400 words, references excluded. Applicants are required to choose a project title among the list offered by the PhD Programme. The title of the selected project (and related tutor) should be reported at the beginning of the text.

In the text, the following three points should be implemented:
a) state of the art of the topic selected;
b) targets of the project;
c) research plan over 3 years.

The Examining Board will evaluate the scientific dimension of the project, its feasibility related to the length of the PhD, the target setting, the scientific impact of outcomes.

4) The **interview** will cover the qualifications and the publications submitted by the candidates, their studiorum and professional curricula, their scientific and cultural interests and will assess the level of basic knowledge of the subjects involved in the PhD Programme. The examination board will focus on:

- level of knowledge of the topic and the ability to present it;

- level of knowledge of the topic of the research project;

- originality and interdisciplinarity of the research proposal.

The skill in the use of English will be assessed as well.

CALL FOR POSITIONS RESERVED TO APPLICANTS WITH INTERNATIONAL QUALIFICATIONS	
Assessment procedure for positions reserved to applicants with international qualifications	
Assessment of qualifications, research project and interview	
Qualifications to be uploaded on the on-line	
· Research project (max. 400 words, references excluded) written in English by the candidate (see the section "Further information on examination" below), choosing a title among the list provided by the PhD Programme · Thesis Abstract 2nd Cycle Degree(see the section "Further information on examination" below) · Publications (max 3) · Other qualifications (see below) · Curriculum vitae et studiorum	
Assessment criteria for positions reserved to students with international qualifications	**Maximum score 100 points**
Assessment of qualifications:	**Maximum score 50 points**
Curriculum vitae et studiorum	maximum score 10 points

UNIVERSITÀ DEGLI STUDI DI TORINO

Thesis Abstract (see the section "Further information on examination")	maximum score 10 points
Research Project (see the section "Further information on examination")	maximum score 25 points
Publications **1** point for each publication, for a maximum of 3 publications. Only published or accepted JCR papers relevant to the PhD programme will be considered.	maximum score 3 points
Other qualifications: If completed, the following will be assessed: - Second/additional master degree: **1** point - Italian specialising master 1st and 2nd level degree if relevant: **0.5** point - Communications to congresses: **0.1** points (max 5 communications) Any qualifications related to professional skills, not pertinent with research activity, will not be considered	maximum score 2 points
Minimum threshold for admission to the interview	***26 points***
Interview	**Maximum score 50 points**
Minimum threshold for passing the interview	***35 points***

UNIVERSITÀ DEGLI STUDI DI TORINO

Further information on examinations for reserved positions

Knowledge of the English language for scientific purpose is compulsory.

Thesis Abstract: max 400 words. The candidate must develop the following points:
a) purpose of the thesis;
b) methods used;
c) results obtained.

The **Research project** must be written in English, max 400 words, references excluded. Candidates are required to choose a project title among the list offered by the PhD Programme. The title of the selected project (and related tutor) should be reported at the beginning of the text.

In the text, the following three points should be implemented:
a) state of the art of the chosen topic;
b) targets of the project;
c) research plan over 3 years.

The Examining Board will evaluate the scientific relevance of the project, its feasibility related to the length of the PhD, the target setting, the scientific impact of outcomes.

The **interview** will be in English and will cover the qualifications and the publications submitted by the candidates, their studiorum and professional curricula, their scientific and cultural interests and will assess the level of basic knowledge of the subjects involved in the PhD Programme. The Board will focus on:
- level of knowledge of the topic and the ability to present it;
- level of knowledge of the topic of the research project;
- originality and interdisciplinary character of the research proposal.

Titoli progetti di ricerca

Dottorato di Ricerca in Scienze Farmaceutiche e Biomolecolari

Titles of research projects

PhD Programme in Pharmaceutical and Biomolecular Sciences

UNIVERSITÀ DEGLI STUDI DI TORINO

Titoli dei progetti per posti ordinari /Titles of research projects for ordinary positions

1) Nuove strategie farmacologiche per la modulazione dell'infiammazione immuno-mediata / New pharmacological strategies for targeting immuno-inflammation (tutor: Chiara Dianziani)
2) Strategie analitiche per la caratterizzazione dei "Botanicals" /Analytical strategies for the characterization of botanicals (tutor: Patrizia Rubiolo)
3) Nuove tecnologie ibride per l'intensificazione di processi chimici /New green hybrid technologies for chemical process intensification (tutor: Emanuela Calcio Gaudino)
4) Evoluzione diretta di citocromi P450 per applicazioni in ambito farmaceutico e ambientale / Directed evolution of cytochromes P450 for pharmaceutical and environmental applications (tutor: Gianfranco Gilardi)
5) Inibizione della Diidroorotato Deidrogenasi nell'induzione di apoptosi e differenziazione in Leucemie Mieloidi (EG). / Dihydroorotate Dehydrogenase Inhibition to Induce Apoptosis and Differentiation in Myeloid Leukemias. (tutor Donatella Boschi)
6) Strategie analitiche di tipo omics per la definizione di "qualità alimentare" nella produzione su larga scala, responsabile scientifico. / Omics analytical strategies to define the "food quality" in a perspective of large-scale production. (tutor: Chiara Irma Emilia Cordero) *(titolo di progetto abbinato alla borsa di studio finanziata da SOREMARTEC ITALIA S.r.l. / research project linked to the scholarship funded by SOREMARTEC ITALIA S.r.l.)*
7) Sviluppo di una nuova classe di agenti di contrasto per Overhauser Magnetic Resonance Imaging (MRI), contenenti radicali nitrossidi e responsivi all'attività di enzimi specifici. / Development of a new class of contrast agents for Overhauser Magnetic Resonance Imaging (MRI), based on nitroxyl radicals and responsive to specific enzymatic activity. *(tutor: GENINATTI CRICH Simonetta) (titolo di ricerca abbinato a borsa finanziata dal Dipartimento di Biotecnologie Molecolari e Scienze per la Salute / research project linked to the scholarship funded by Dipartimento di Biotecnologie Molecolari e Scienze per la Salute)*
8) Uso di strumenti bioisosterici innovativi nello sviluppo di ligandi ortosterici al recettore GABAA EG). / Use of innovative bioisosteric tools in the design of orthosteric ligand of the GABAA receptor. *(tutor: Marco Lolli) (titolo di ricerca abbinato a borsa di Ateneo cofinanziata da Dipartimento di Scienza e Tecnologia del Farmaco)*
9) Sviluppo di sensori elettrochimici per la determinazione di biomarcatori, per l'applicazione in campo biomedico, alimentare ed ambientale / Development of electrochemical sensors for the determination of biomarkers, for application in the biomedical, food and environmental fields (tutor: Agnese Giacomino)
10) Nuove vie sintetiche per la preparazione di antibiotici β-lattamici / New Synthetic Routes for the Preparation of β-Lactam Antibiotics (tutor: Giancarlo Cravotto)
11) Studio del ruolo dell'acidosi tumorale nella progressione del tumore mediante tecniche MRI multiparametriche / Investigation of the role of tumor acidosis in cancer progression by using multiparametric MRI techniques (tutor: Enzo Terreno)
12) Sviluppo di nuovi biostimolanti microbici a base di batteri promotori della crescita (PGPR) per migliorare la resa, la qualità e la tolleranza agli stress abiotici nelle colture agricole. / Development of new microbial biostimulants based on plant growth-promoting rhizobacteria (PGPR) for improving yield, quality and abiotic stress tolerance in crops. *(tutors: Cinzia Bertea, Valeria Cortese) (research project linked to the* apprenticeship position for Higher Training and Research with GREEN HAS ITALIA S.p.A.*)*

13) Sonde di imaging multimodali per la diagnosi e il trattamento di patologie tumorali. / Multimodal imaging probes for cancer diagnosis and treatment. (tutor: Enzo Terreno)
14) Development of new technologies for the valorization of brewery by *products. / Sviluppo di nuove tecnologie per la valorizzazione di sottoprodotti di birrificio. (titolo di ricerca abbinato a posto in apprendistato presso BIRRIFICIO BALADIN s.s. agricola / research project linked to the apprenticeship position with BIRRIFICIO BALADIN s.s. agricola)*
15) Progettazione e sintesi di composti di interesse farmaceutico /Design and synthesis of pharmaceutical compounds intended for diagnostics applications" *(tutor universitario: Massimo Bertinaria; tutor CNR: Luca Domenico D'Andrea; tutor aziendale: Roberta Napolitano) (titolo di ricerca abbinato alla borsa cofinanziata da CNR e da Bracco Imaging S.p.A. / research project linked to the scholarship co-funded by CNR and Bracco Imaging S.p.A.)*

Titoli dei progetti per posti riservati a laureate all'estero /Titles of research projects for PhD positions reserved to candidates graduated at foreign Universities:

1) Nuovi approcci per la somministrazione intranasale di molecole bioattive nel trattamento di patologie neurodegenerative / Nose-to-brain drug delivery approaches for the treatment of neurodegenerative disorders (tutor: Roberta Cavalli)

2) Donatori di monossido di carbonio non metallici e la loro applicazione nel trattamento del cancro farmacoresistente / Non-metallic carbon monoxide donors and study of their application in resistant cancer treatment (tutor: Konstantin Chegaev)

3) Utilizzo di approcci combinati in silico/in vitro per combattere la resistenza antimicrobica in batteri Gram-positivi e Gram-negativi / Combined in silico/in vitro approaches to target antimicrobial resistance in Gram-positive and Gram-negative bacteria (tutor: Francesca Spyrakis)

4) Nanosistemi mirati per migliorare la terapia fotodinamica e la diagnosi del cancro / Targeted Nanosystems for Improving Photodynamic Therapy and Diagnosis of Cancer (tutor: Sonja Visentin)

5) Controllare le proprietà molecolari per scoprire nuovi farmaci orali nello spazio chimico al di fuori della Regola del 5 / A rational control of molecular properties to discover new oral drugs in the beyond-Rule-of-5 chemical space (tutor: Giulia Caron)

6) Magnetopercezione nelle piante: metabolomica e trascriptomica delle piante al variare del campo magnetico / Plant magnetoreception: metabolomics and transcriptomics of plant responses to varying magnetic fields (tutor: Massimo Maffei)

7) Nanopolimeri a stampo molecolare prodotti mediante sintesi in fase solida per lo sviluppo di metodi analitici pseudo-immunologici di peptidi bioattivi / Solid phase synthesis of bioactive peptides-imprinted nanopolymers for the development of pseudo immunoanalytical methods (tutor: Laura Anfossi)

8) Progettazione e validazione preclinica di sonde per applicazioni MRI nell'imaging molecolare / Design and preclinical validation of probes for MR-molecular imaging (tutor: Enzo Terreno)