

# Technical Annex - Implementing Agreement

of the **ACADEMIC COOPERATION AGREEMENT**

*regarding the establishment of a joint interdisciplinary Master's  
double degree program in  
**Physics and Nanotechnology**  
– **Condensed Matter Physics and Nanotechnology***

made by and between



**UNIVERSITÀ  
DEGLI STUDI  
DELL'AQUILA**

**Università degli Studi dell'Aquila  
The University of L'Aquila (Italy)**  
Represented by the Vice-Rector for International Affairs,  
*Prof Bruno Rubino*

and



**Politechnika Gdańska  
Gdańsk University of Technology (Poland)**  
Represented by the Vice-Rector for Internationalization and Innovation,  
*Prof Janusz Nieznański*

**2022/2023 edition**

Having regard to the ACADEMIC COOPERATION AGREEMENT made by and between the University of L'Aquila (UNIVAQ), represented by the Rector, *Prof. Edoardo Alesse*, and Gdańsk University of Technology (Gdańsk Tech, formerly GUT), represented by the Rector, *Prof. Krzysztof Wilde*, entered into on 09/11/2020, the undersigning universities hereby agree on the following:

### **Article 1 – Program Committee**

The members of the joint Program Committee, responsible for the selection of candidates, curricula of students taking part in the program and all other issues related to the realization of this program are:

- 1) Prof Alessandra Continenza,
- 2) Prof Carlo Pierleoni
- 3) Dr. Justyna Szostak,
- 4) Prof Agnieszka Witkowska.

### **Article 2 – Limits of admitted students**

For the academic year 2022/23 cohort the maximum number of students admitted to the joint interdisciplinary Master's double degree program in Physics and Nanotechnology – Condensed Matter Physics and Nanotechnology is 20 (twenty), 10 (ten) for each Institution. These provisions may be modified, subject to the written agreement between Parties.

### **Article 3 – Selection of applications**

The joint Program Committee, responsible for the for the selection of highly motivated candidates, will evaluate the applications to the program submitted by prospective students that meet the admission requirements of both Institutions and compile a ranked list of eligible students.

Eligible students will be notified by their Home Institution and will have 15 days to accept the position offered.

### **Article 4 – Language policy**

The language of instruction for the Condensed Matter Physics and Nanotechnology program is English. To this purpose students are required to prove a satisfactory (minimum B2, according to C.E.F.R.) level of both spoken and written English. Language certificates issued by proper units of both Partner Institutions, e.g. university language centers, will be accepted for this purpose.

**In order to support and implement the multilingualism policy of the European Union the following regulations will be introduced:**

It will be compulsory for non-native students to acquire a basic level of proficiency in Italian (A1, according to C.E.F.R.) before the end of the period of study at UNIVAQ. Analogically, it will be compulsory for non-native students to acquire a basic level of proficiency in Polish (A1, according to C.E.F.R.) before the end of the period of study at Gdańsk Tech.

### Article 5 – Structure of the joint paths, mobility and curriculum

Condensed Matter Physics and Nanotechnology program is designed for completion in 4 semesters of full-time study. All students enrolled to the program will follow a study path described below, that will consist of two semesters of study at UNIVAQ and two semesters of study at Gdańsk Tech, and will be associated with collection of a minimum of 30 ECTS credits in each of the Institutions. During 4 semesters of studies, students of the program have to collect at least 120 ECTS credits, and all learning outcomes necessary for both of the qualifications.

To be awarded with both of the final qualifications students of this program have to:

- A) obtain the minimum number of ECTS credits and learning outcomes specified below, i.e. to follow and pass all of the courses given in the curriculum associated with this path (Tab.1).

TABLE 1. Condensed Matter Physics and Nanotechnology program Curriculum

| course name   |   | ECTS credits |
|---|---|--------------|
| <b>Semester 1 - fall/winter 2022/23, L'Aquila</b>   |   |              |
| 1   | Condensed Matter Physics  | 6            |
| 2   | Nuclear and Subnuclear Physics (drop)   | 6            |
| 3   | Statistical Mechanics   | 6            |
| 4   | Quantum Electrodynamics   | 6            |
| 5   | Experimental Methods in Physical Research                                     | 6            |
| 6   | Chemistry of Surfaces and Interfaces  | 6            |
| 7   | foreign language:<br>Italian (A1) for non-Italian students<br>or English (C1) | 3            |
|   |   |              |
| Total 1st semester at UNIVAQ                        |   | <b>33</b>    |
| <b>Semester 2 - spring/summer 2022/23, L'Aquila</b> |   |              |
| 1   | Advanced Physics Laboratory - Condensed Matter Physics                        | 6            |
| 2   | Apprenticeship  | 6            |
| 3   | Solid State Physics   | 10           |
| 4   | Advanced simulations techniques (new) (B)                                     | 6            |
| Total 2nd semester at UNIVAQ                        |   | <b>28</b>    |
| <b>Semester 3 - fall/winter 2023/24, Gdańsk</b>     |   |              |
| 1   | Physics of materials laboratory   | 3            |
| 2   | Materials science - classical particle approach                               | 6            |

|   |  |                |
|---|--|----------------|
| 3   | Computer modelling and design of nanomaterials                                 | 5              |
| 4   | Group project  | 2              |
| 5   | Magnetism: from fundamentals to spintronics                                    | 2              |
| 6   | Humanities and social science course 1   | 2              |
| 7   | Humanities and social science course 2<br>(Methodology of scientific research) | 1              |
| 8   | Polish I (for non-Polish students)   | 2              |
| 9   | MSc thesis laboratory  | 10             |
| Total 3rd semester at Gdańsk Tech                 |  | <b>31/33</b>   |
| <b>Semester 4 - spring/summer 2023/24, Gdańsk</b> |  |                |
| 1   | Experimental nanotechnology  | 4              |
| 2   | Synthesis methods of nanomaterials   | 3              |
| 3   | Polish II (for non-Polish students)  | 1              |
| 4   | Nanotechnology and human environment   | 2              |
| 5   | MSc thesis   | 20             |
| Total 4th semester at Gdańsk Tech                 |  | <b>30</b>      |
| <b>TOTAL</b>                                      |  | <b>122/124</b> |

Individual study plans may also be taken into account, if appropriately motivated, but they will have to be verified in terms of the diploma requirements and approved by both Partner Institutions.

Students enrolled to the program will sign a proper Learning Agreement stating the program of their studies and degrees awarded. The template of the Learning Agreement is given in the Appendix 1. The Learning Agreement will be valid for the study period, i.e. from the moment of signing the document by all parties of that agreement until student's graduation or student's rejection from the program related to the breach of Study Regulations in force, or student's resignation from the program.

- B) Prepare and submit a diploma thesis co-tutored by a professor or researcher from UNIVAQ, and by a professor or researcher from Gdańsk Tech. The thesis has to be written in English and meet the requirements of diploma theses of both Institutions. The thesis will be subjected to plagiarism verification according to the regulations of both Institutions.
- C) Pass the final diploma exam, referred to as defense. Students will be informed about the details of the defense procedure and the formula for calculating the diploma grade at least one month prior to the planned date of this exam.

### **Article 6 – Credit transfer policy**

Students' performance will be documented in both Institutions through the national grading system in force in these Institutions. After the study period spent in one of the Institutions, this Institution will issue official Transcripts of Records (ToR) for of each of the students enrolled in the program individually. Transcripts of Records will be sent to the other

Institution no longer than 5 weeks after the end of the study period at each of the Institutions. The transfer and recognition of grades will be based on the following national grading scales:

| Recognition of grades gained at UNIVAQ by Gdańsk Tech |             |
|---|-------------|
| UNIVAQ  | Gdańsk Tech |
| 28, 29, 30, 30 cum laude                              | 5.0         |
| 26, 27  | 4.5         |
| 24, 25  | 4.0         |
| 21, 22, 23  | 3.5         |
| 18, 19, 20  | 3.0         |
| <18   | 2.0 (fail)  |

| Recognition of grades gained at Gdańsk Tech by UNIVAQ |        |
|---|--------|
| Gdańsk Tech   | UNIVAQ |
| 5.0   | 30     |
| 4.5   | 27     |
| 4.0   | 25     |
| 3.5   | 22     |
| 3.0   | 19     |
| 2.0   | fail   |

1 ECTS credit is assigned to the total workload of 25-30 hours.

#### Article 7 – Degrees awarded

The Parties agree that upon meeting the requirements described in Article 5 of this agreement graduates of the Condensed Matter Physics and Nanotechnology program will be awarded with:

- a **Master's degree in Physics** issued by the **University of L'Aquila**, and
- a **Master's degree in Nanotechnology** issued by Gdańsk Tech.

If students manage to collect the required ECTS credits and learning outcomes assigned to only one of these qualifications, issued either by their Home or Partner Institution, they will be awarded only that qualification.

#### Article 8 – Students' rights and obligations

Throughout the study period spent under the supervision of UNIVAQ, the Study Regulations in force at this Institution are applied to all of the students taking part in the program. Analogically, throughout the study period spent under the supervision of Gdańsk Tech, the Study Regulations in force at this Institution are applied.

#### Article 9 – Participation costs

Students participating in the Condensed Matter Physics and Nanotechnology program will be enrolled in both Institutions since the beginning of the program but will pay tuition fees (and any other fees) to their Home Institution only. Any other fee that might be required for the enrolment and registration at the Hosting Institution, being a party to this Agreement, will be covered by this Institution, local authorities, public bodies and private corporations available at the Hosting Institution.

Students will be required to cover any personal expenses incurred by them during the

exchange period, including travelling and lodging.

Students participating in the Condensed Matter Physics and Nanotechnology program are required to obtain (prior to the beginning of their mobility period) a proper insurance, covering the health insurance, personal accident insurance, civil liability insurance, and the cost of transport of a dead body, valid during travelling and studying abroad.

### Article 10 – Amendments and validity of the agreement

This Implementation Agreement is valid for students of the 2022/23 cohort. Any amendments to this agreement will require written approval by both Institutions unless null or void.

In witness hereof, the cooperating universities have signed this agreement in two originals by their hands on the day and year below.

L'Aquila, \_\_\_\_\_

Gdańsk, \_\_\_\_\_

The Vicerector for International  
Affairs

University of L'Aquila

Professor Bruno Rubiño



26 SET. 2022

The Vice-Rector for Internationalization  
and Innovation

Gdańsk University of Technology

Professor Janusz Nieznański

Vice-Rector for Internationalization  
and Innovation

Professor Janusz Nieznański



Z-ca Kierownika

mgr inż. Monika Czerepak  
DZIAŁ MIĘDZYNARODOWEJ  
WSPÓŁPRACY AKADEMICKIEJ

## Appendix 1

### Learning Agreement Template

# LEARNING AGREEMENT FOR THE CONDENSED MATTER PHYSICS AND NANOTECHNOLOGY PROGRAM

## The Student

|               |  |                          |  |
|---------------|--|--------------------------|--|
| Last name (s) |  | First name (s)           |  |
| Date of birth |  | Nationality <sup>i</sup> |  |
| Sex [M/F]     |  | Academic year            |  |
| Phone number  |  | E-mail                   |  |

## The Home Institution

|                |  |                         |  |
|----------------|--|-------------------------|--|
| Name           |  | Faculty                 |  |
| Contact person |  | e-mail and phone number |  |

## The Partner Institution

|                |  |                         |  |
|----------------|--|-------------------------|--|
| Name           |  | Faculty                 |  |
| Contact person |  | e-mail and phone number |  |

## I. CURRICULUM AND RECOGNITION OF EDUCATIONAL COMPONENTS

Planned period of study: from [month/year] till [month/year]

Chosen study path according to the Implementation Agreement:

Degree awarded by UNIVAQ upon successful completion of the planned program: Master of Physics

Degree awarded by Gdańsk Tech upon successful completion of the planned program: Master of Nanotechnology

Table A: Planned study program including all of the courses to be completed at both of the Institutions

| Name of the Institution at which the course will be completed | Component (course) code, if any | Component title (as indicated in the course catalogue) at the Institution at which the course is completed | Semester | Number of ECTS credits to be awarded by the Institution running the course upon successful completion of this component |
|---|---------------------------------|--|----------|---|
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          | Total:  |

## II. COMMITMENT OF THE THREE PARTIES

By signing this document, the student, the Home Institution and the Partner Institution confirm that they approve the proposed Learning Agreement and that they will comply with all the arrangements agreed by all parties. Both Institutions undertake to apply all the regulations of the Condensed Matter Physics and Nanotechnology program, stated in the agreements related to this program.

Any changes in the study program or degrees awarded may be introduced in writing in the part III of this agreement entitled "Changes to the Learning Agreement for the Condensed Matter Physics and Nanotechnology program if agreed by all parties.

**The student**

Student's signature

Date:

**The Home Institution**

Local coordinator of the program

Date:

**The Partner Institution**

Local coordinator of the program

Date:



### III. CHANGES TO THE LEARNING AGREEMENT FOR THE CONDENSED MATTER PHYSICS AND NANOTECHNOLOGY PROGRAM

#### The Student

|               |  |                          |  |
|---------------|--|--------------------------|--|
| Last name (s) |  | First name (s)           |  |
| Date of birth |  | Nationality <sup>i</sup> |  |
| Sex [M/F]     |  | Academic year            |  |
| Phone number  |  | E-mail                   |  |

#### The Home Institution

|                |  |                         |  |
|----------------|--|-------------------------|--|
| Name           |  | Faculty                 |  |
| Contact person |  | e-mail and phone number |  |

#### The Partner Institution

|                |  |                         |  |
|----------------|--|-------------------------|--|
| Name           |  | Faculty                 |  |
| Contact person |  | e-mail and phone number |  |

Planned period of study after the changes: from [month/year] till [month/year]

Chosen study path after the changes according to the implementation Agreement:

Degree awarded by UNIVAQ upon successful completion of the program after the changes:

Degree awarded by Gdańsk Tech upon successful completion of the program after the changes:

Table A1: Planned study program including all of the courses to be completed at both of the Institutions after the changes

| Name of the Institution at which the course will be completed | Component (course) code, if any | Component title (as indicated in the course catalogue) at the Institution at which the course is completed | Semester | Number of ECTS credits to be awarded by the Institution running the course upon successful completion of this component |
|---|---------------------------------|--|----------|---|
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          |   |
|   |                                 |  |          | Total:  |

#### IV. COMMITMENT OF THE THREE PARTIES

By signing this document, the student, the Home Institution and the Partner Institution confirm that they approve the proposed changes to the Learning Agreement and that they will comply with all the arrangements agreed by all parties. Both Institutions undertake to apply all the regulations of the Condensed Matter Physics and Nanotechnology program, stated in the agreements related to this program.

**The student**

Student's signature

Date:

**The Home Institution**

Local coordinator of the program

Date:

**The Partner Institution**

Local coordinator of the program

Date:

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<sup>i</sup> **Nationality:** Country to which the person belongs administratively and that issues the ID card and/or passport.